

**FRAMEWORK FOR INTEGRATING KNOWLEDGE MANAGEMENT AND HUMAN  
RESOURCE MANAGEMENT FOR THE REDUCTION OF ORGANISATIONAL  
KNOWLEDGE LOSS IN SELECTED SOUTH AFRICAN STATE-OWNED  
ENTERPRISES**

**By**

**MALEFETJANE PHINEAS PHALADI**

**(Student Number: 35610018)**

**Submitted in accordance with the requirements for the degree of**

**DOCTOR OF PHILOSOPHY**

**in the subject**

**INFORMATION SCIENCE**

**at the**

**UNIVERSITY OF SOUTH AFRICA**

**PROMOTER: Prof. Patrick Ngulube**

**February 2021**

## SUMMARY

State-owned enterprises (SOEs) play a significant role in the South African economy and are the key drivers for delivering on the country's developmental mandate. Nevertheless, many SOEs are facing a phenomenon of organisational knowledge loss caused largely by an attrition of their much-needed firm-specific human resources through voluntary and involuntary turnover and a lack of retention strategies. Human resource management (HRM) departments in state-owned enterprises are failing to play their role in the knowledge management (KM) agenda despite being the custodians of firm-specific human resources. In any company, organisational tacit knowledge, as a source of sustained competitive advantage, is contingent on human resources. In SOEs, employees are sources of such knowledge. In many SOEs, this problem of organisational knowledge loss is exacerbated by a lack of knowledge management practices, the absence of organisational structures and roles dedicated to knowledge management, a silo mentality and red tape.

The purpose of the study was to develop a framework on knowledge loss reduction that integrates knowledge management and human resource management practices in the South African state-owned enterprises. This study followed a mixed methods research approach by using an exploratory sequential design. A qualitative phase was conducted first (through the interviews and document analysis of annual reports), while in the second, and quantitative phase, a survey questionnaire was used to test the knowledge and research findings revealed by the qualitative phase.

The qualitative data were collected from nine SOEs in five market sectors through the use of interviews with twenty purposively selected HR managers. The data collection phase also included the analysis of annual reports. The research findings of the qualitative phase were used to develop a survey questionnaire for testing in the quantitative phase. The survey questionnaire that was used to collect data in the second phase of the study, was distributed to 585 employees and KM practitioners in the SOE sector and had a response rate of 25%.

The study revealed that the majority of the SOEs lacked dedicated KM functions and roles in their organisational structures. The study also established that there was a serious lack of synergy between the HRM and KM practices of the few SOEs that had dedicated knowledge management function and roles in the structures. A lack of key strategies for managing and reducing organisational knowledge loss contributed to knowledge stickiness and reduced knowledge protective capacity. However, on a positive note, recruitment and training practices were found to be effective in the sourcing and development of firm-specific human and knowledge resources. Despite their shortcomings, these two practices played an important role in capacitating knowledge creation and acquisition, thus boosting knowledge-absorptive capacity in the SOEs. Nonetheless, the same cannot be said of the human resource retention practices.

The study recommends that HRM practices be aligned and integrated into KM for effective management and reduction of organisational knowledge loss. Furthermore, HRM practitioners should develop and lead strategies aimed at embedding a knowledge-centric organisational culture, structures and processes to ensure that knowledge management is fully institutionalised. In this regard, knowledge-oriented leadership is required across all levels of organisations. The study offers a framework for knowledge loss reduction as a baseline to assist SOEs with integrating their HRM and KM practices in order to reduce the dire risks associated with losing much-needed, firm-specific human and knowledge resources.

**KEY WORDS:** Organisational knowledge loss, knowledge management, human resource management practices, theories of the firm, resource-based theory of the firm, knowledge-based theory of the firm, sustainable competitive advantage, South Africa, state-owned enterprises, organisational culture, organisational structure, organisational barriers.

## ACKNOWLEDGEMENTS

A research study of this nature is highly impossible to accomplish without the structural guidance and support of the supervisor. On that note, I would like to place on record my debt of gratitude to my research supervisor, Prof. Patrick Ngulube, who has been there for me when the going got tough and provided the required support on this study. It has been such a wonderful learning curve working under his wings and this research output is the testament of all the efforts we put together on the study. Prof. Ngulube, my sincere gratitude for all your efforts and your ‘never get tired’ spirit in guiding and sharpening this piece of intellectual work into a balanced scholarly output.

Furthermore, this scholarly tract would not have been possible without the qualitative and quantitative data that were required to address the research objectives and research questions. It is in that spirit that I sincerely wish to extend my debt of gratitude to all South African state-owned companies, their respective human resource managers, knowledge management practitioners and employees for making the scholarly treatise possible. For that, I shall always remain grateful for your support and resources provided in the study. Moreover, I wish to thank my colleague at Tshwane University of Technology and a fellow PhD student at UNISA, Mr Stevens Mamorobela, for his constructive engagements during the development of the survey instrument and his support regarding the Atlas.ti software. To my statistician, Miss Zandile Nonyana, thank you for all the statistical analyses and your support with the interpretation of the outputs. I also thank my mother Ramadimetje Phaladi, my wife Phylia Mologadi Phaladi, my daughter Ramadimetje Tshegofatjo, my sons Sepitle Tebogo, Kgope Mphakane Tshepo, Thabiso and my brother Sepitle Frans (Ten-ten) Phaladi for all their support. I also wish to thank everybody who has assisted me in one way or the other in this study, including those I cannot mention their names here. My deep appreciation goes to the following people for their support on the study: Dr Vincent Mello, Bra Sam Molekoa, Ayanda Mda, Alice Machele, Daniel Legoabe, Paulinah Mampa, Itumeleng Khunoane, Jantina Bertha Louw, Kholane Chauke, Yvonne Hlatswayo, and Nombulelo Lekota. Dr AJ Swanepoel, thank you for your time and support in language editing the thesis. My appreciation also goes to Tshwane University of Technology for

sponsoring this research study and its Research and Innovation portfolio for the grant awarded for the transcription of the qualitative data. Finally, I wish to place on record my appreciation to UNISA for granting me a bursary for statistical analysis and language editing services.

## **DEDICATION**

This thesis is dedicated to my late grandmother, Ramakgahlele Phaladi – Hunadi a Sefetse sa Gobetse le Mahlako – who unselfishly put me through the university education system with the small pension grant she received from government. My granny, your undying spirit to get us educated, no matter the background and support, is a living testimony of my academic success. May your soul rest in eternal peace ngwana Mahlako.

## DECLARATION

I declare that **FRAMEWORK FOR INTEGRATING KNOWLEDGE MANAGEMENT AND HUMAN RESOURCE MANAGEMENT FOR THE REDUCTION OF ORGANISATIONAL KNOWLEDGE LOSS IN SELECTED SOUTH AFRICAN STATE-OWNED ENTERPRISES** is my own original work and that all the sources that I used or quoted are indicated and acknowledged by means of complete references.

.....

**Signature**

**(Mr MP. Phaladi)**

.....

**Date**

# TABLE OF CONTENTS

SUMMARY .....	i
ACKNOWLEDGEMENTS .....	iii
DEDICATION .....	v
DECLARATION .....	vi
TABLE OF CONTENTS .....	vii
LIST OF FIGURES .....	xvii
LIST OF TABLES .....	xix
LIST OF APPENDICES .....	xx
LIST OF INITIALISMS, ACRONYMS AND ABBREVIATIONS .....	xxi
CHAPTER ONE: INTRODUCTION AND CONTEXTUAL SETTING OF THE STUDY .....	1
1.1 Introduction .....	1
1.2 Background to the study .....	2
1.3 Contextual setting of the study .....	7
1.4 Research problem .....	10
1.5 Research objectives .....	13
1.6 Justification for the study .....	18
1.7 Originality of the study .....	19
1.8 Significance of the study .....	23
1.9 A brief literature review including key theories and models .....	23
1.10 Theoretical grounding of the study .....	26
1.11 Definition of key concepts .....	29
1.12 Research methodology overview .....	37
1.13 Scope and limitations of the study .....	38
1.14 Thesis layout .....	39



1.15	Summary of the chapter .....	40
<b>CHAPTER TWO: CONCEPTUAL FRAMEWORK AND A LITERATURE REVIEW ON THE INTEGRATION OF HUMAN RESOURCE MANAGEMENT PRACTICES INTO KNOWLEDGE MANAGEMENT.....</b>		
		<b>42</b>
2.1	Introduction.....	42
2.2	The purpose of a literature review .....	43
2.3	State-owned enterprises in the knowledge economy .....	46
2.4	Review of relevant theories on organisational knowledge .....	47
2.4.1	Human resources in the context of the resource-based view of the firm .....	49
2.4.2	The genesis and nature of resource-based view of the firm .....	51
2.4.3	Theoretical perspectives on organisational knowledge.....	55
2.4.4	The knowledge-based view of the firm on sustainable competitive advantage .....	59
2.5	Role of human resources management in knowledge management .....	64
2.6	HRM practices supporting knowledge management activities.....	68
2.6.1	Recruitment and selection .....	70
2.6.2	Compensation and rewards systems.....	70
2.6.3	Organisational design.....	72
2.6.4	Performance management.....	72
2.6.5	Training and development.....	74
2.7	A case for knowledge management in the organisation.....	75
2.8	Core knowledge management processes and underlying theories .....	78
2.8.1	Knowledge creation process .....	78
2.8.2	The knowledge transfer process.....	81
2.8.3	Knowledge retention process .....	86
2.8.4	Knowledge application process.....	88
2.9	Organisational factors affecting knowledge management .....	89

2.9.1	Organisational culture .....	90
2.9.2	Trust .....	91
2.9.3	Leadership .....	92
2.9.4	Organisational structure .....	93
2.9.5	Ba (space) in an organisational context.....	94
2.9.6	Information technology infrastructure .....	96
2.10	Critique of knowledge-based theories of the firm.....	97
2.11	Summary of the chapter .....	100
<b>CHAPTER THREE: RESEARCH METHODOLOGY AND DESIGN .....</b>		<b>102</b>
3.1	Introduction.....	102
3.2	Research paradigms .....	105
3.2.1	The positivist research paradigm.....	106
3.2.2	Interpretivism as a research paradigm.....	108
3.2.3	Pragmatism as a research paradigm .....	112
3.3	Research approaches.....	117
3.3.1	Qualitative versus quantitative research approaches.....	118
3.3.2	Motivation for mixed methods research approach .....	121
3.3.3	Mixed methods research designs.....	128
3.3.3.1	Convergent design .....	129
3.3.3.2	Explanatory sequential design .....	130
3.3.3.3	Exploratory sequential design.....	131
3.3.3.4	Embedded design.....	132
3.4	Research design .....	134
3.4.1	Motivation for using an exploratory sequential design.....	135
3.5	Research procedure.....	137
3.5.1	Population and sampling .....	137

3.5.2	Justification for the use of the sampling technique .....	139
3.5.3	Multi-case study design.....	142
3.5.4	Research methods for data collection and document analysis .....	144
3.5.4.1	Interviews.....	145
3.5.4.2	Questionnaire .....	147
3.5.4.3	Document analysis .....	149
3.5.5	Data analysis and presentation .....	150
3.5.5.1	Qualitative data analysis .....	151
3.5.5.2	Quantitative data analysis .....	154
3.6	Reliability and validity of the instruments .....	155
3.7	Ethical considerations .....	159
3.8	Evaluation of research methods .....	161
3.9	Summary of the chapter .....	164
<b>CHAPTER FOUR: PRESENTATION AND ANALYSIS OF RESULTS .....</b>		<b>165</b>
4.1	Introduction.....	165
4.2	Response rate and participants' profile .....	166
4.3	Presentation of the qualitative interview results .....	167
4.3.1	Causes of organisational tacit knowledge loss .....	168
4.3.2	Recognition and treatment of organisational knowledge loss .....	170
4.3.3	The role of human resource management in building and facilitating knowledge management capabilities .....	172
4.3.3.1	The role of human resources in knowledge management.....	173
4.3.3.2	Work relationship between human resource managers and knowledge management practitioners .....	175
4.3.3.3	Knowledge-driven human resource management practices.....	177
4.3.4	Human resource recruitment practice supporting knowledge management activities .....	178

4.3.4.1	Human resource recruitment practices supporting knowledge management activities .....	179
4.3.4.2	Time and costs involved in replacing critical skills lost due to voluntary turnover.....	180
4.3.4.3	Knowledge management attributes as part of the recruitment process.....	182
4.3.4.4	Effectiveness of human resource recruitment practices in attracting potential employees with required knowledge attributes.....	184
4.3.5	Human resource management training and development practices that support knowledge management activities .....	185
4.3.5.1	Staff training and development practices that support knowledge management processes .....	186
4.3.5.2	Design and implementation of staff training and development .....	188
4.3.5.3	On-the-job boarding and shadowing as knowledge management strategies directed by human resource management.....	191
4.3.5.4	Staff training and development practice that focus on job-specific knowledge acquisition, application, sharing and retention.....	193
4.3.5.5	Ensuring return on investment from staff training and development practices .....	194
4.3.5.6	Effectiveness of staff training and development practice .....	195
4.3.6	Human resource management retention practices that support knowledge management activities .....	198
4.3.6.1	Retention strategies to prevent voluntary turnover.....	198
4.3.6.2	Programme for retiring experts with critical skills .....	201
4.3.6.3	Rewards and recognitions .....	202
4.3.6.4	Compensation practices supporting retention and sharing of critical skills, knowledge and expertise.....	204
4.3.6.5	Performance management system rewards for required knowledge-sharing behaviour .....	207
4.3.6.6	Success of knowledge-driven HRM retention practices .....	208
4.3.7	Organisational culture and design .....	211

4.3.7.1	Organisational structure and the role of human resource management in supporting knowledge management behaviour such as knowledge acquisition, creation, sharing and retention.....	212
4.3.7.2	Organisational culture and the role of a human resource department in supporting knowledge management .....	215
4.3.7.3	Barriers to effective knowledge management.....	219
4.3.7.4	Organisational leadership support to knowledge management.....	221
4.3.8	Alignment and focus of HRM practices on managing organisational knowledge loss.....	223
4.3.9	Overall effectiveness of human resource practices in facilitating the management and reduction of organisational knowledge loss .....	225
4.3.9.1	Overall effectiveness of human resource management practices in facilitating the retention and management of organisational knowledge.....	225
4.3.9.2	Strategies to make human resource management practices effective in facilitating the retention and management of organisational knowledge.....	228
4.3.10	Summary of the qualitative interview results.....	231
4.4	Presentation of the findings from the document analysis .....	232
4.4.1	Causes of organisational tacit knowledge loss.....	232
4.4.2	Knowledge and human resources as sources of sustained competitive advantage .....	235
4.4.3	Knowledge management practices in the state-owned enterprises .....	241
4.4.4	Knowledge-driven HRM practices supporting knowledge management.....	242
4.4.4.1	Training and development practices .....	242
4.4.4.2	Retention practices.....	245
4.5	Presentation of the quantitative findings obtained from the questionnaire.....	248
4.5.1	Biographical data of the respondents .....	249
4.5.2	Presentation of the results from survey questionnaire.....	249
4.5.2.1	Recognition and causes of knowledge loss.....	250
4.5.2.2	The effectiveness of knowledge management practices .....	251

4.5.2.3	Human resource recruitment practices supporting knowledge management activities .....	253
4.5.2.4	Human resource training practices supporting knowledge management activities .....	255
4.5.2.5	Human resource retention practices supporting knowledge management activities.....	257
4.5.2.6	Overall effectiveness of human resource practices in supporting KM activities .....	259
4.5.2.7	Organisational culture and design that support knowledge management .....	261
4.5.3	Results of the exploratory factor analysis .....	263
4.5.3.1	Structural detection .....	263
4.5.3.2	Factors useful for the development of the framework .....	265
4.5.3.3	Grouping of common variables .....	267
4.5.3.4	Knowledge loss and knowledge management practices .....	269
4.5.3.5	Knowledge-driven human resource practices .....	270
4.5.3.6	Summary of the findings of the exploratory factor analysis .....	272
4.5.4	Chi-square and logistic regression .....	273
4.5.4.1	Deriving variables and responses.....	273
4.5.4.2	Chi-square test for independence.....	276
4.5.4.3	Logistic regression.....	277
4.5.4.4	Summary of chi-square and logistic regression analysis .....	279
4.5.5	Summary of the chapter .....	279
<b>CHAPTER FIVE: INTERPRETATION AND DISCUSSION OF THE RESEARCH FINDINGS .....</b>		<b>281</b>
5.1	Introduction.....	281
5.2	Causes of organisational tacit knowledge loss.....	281
5.3	Recognition and treatment of organisational knowledge loss.....	282
5.4	Knowledge management practices and their effectiveness.....	284
5.5	The role of human resource management in building knowledge management capacity.....	287
5.6	Knowledge-driven human resource management practices.....	289

5.6.1	Knowledge-driven human resource recruitment practices .....	289
5.6.2	Knowledge-driven training and development practices .....	292
5.6.3	Knowledge-driven human resource retention practices .....	294
5.7	Overall effectiveness of knowledge-driven human resource practices .....	297
5.8	Organisational culture and structure .....	300
5.8.1	Organisational culture and the role of HR in facilitating knowledge-driven culture .....	300
5.8.2	Organisational structure and the role of human resources departments in facilitating knowledge-driven structures .....	302
5.8.3	Organisational barriers to effective knowledge management .....	304
5.8.4	Leadership support to knowledge management .....	307
5.9	Alignment of HRM practices in managing organisational knowledge loss .....	309
5.10	Summary of the chapter .....	310
<b>CHAPTER SIX: RESEARCH FINDINGS, CONCLUSIONS, RECOMMENDATIONS AND KNOWLEDGE LOSS REDUCTION FRAMEWORK .....</b>		<b>312</b>
6.1	Introduction .....	312
6.2	Summary of research findings .....	312
6.3	Conclusions of the study .....	318
6.3.1	Conclusions pertaining to the causes of organisational tacit knowledge loss .....	319
6.3.2	Conclusions pertaining to the recognition and treatment of organisational knowledge loss .....	320
6.3.3	Conclusions pertaining to the role of human resource management in knowledge management .....	321
6.3.4	Conclusions pertaining to knowledge management practices.....	321
6.3.5	Conclusions pertaining to knowledge-driven human resource management practices.....	322
6.3.5.1	Conclusions pertaining to knowledge-driven human resource recruitment practices.....	322
6.3.5.2	Conclusions pertaining to knowledge-driven human resource training and development practices.....	323

6.3.5.3	Conclusions pertaining to knowledge-driven human resource retention practices.....	324
6.3.6	Conclusions pertaining to the overall effectiveness of the knowledge-driven human resource practices .....	324
6.3.7	Conclusions pertaining to organisational culture and structure .....	325
6.3.7.1	Conclusions pertaining to organisational culture and the role of HR in facilitating a knowledge-driven culture .....	325
6.3.7.2	Conclusions pertaining to organisational structure and the role of HR in facilitating knowledge-driven structures.....	326
6.3.7.3	Conclusions pertaining to organisational barriers to effective knowledge management.....	327
6.3.8	Conclusions pertaining to the alignment and integration of HRM practices in managing organisational knowledge loss.....	327
6.4	Recommendations.....	328
6.4.1	Causes of organisational tacit knowledge loss.....	328
6.4.2	Recognition and treatment of organisational knowledge loss.....	330
6.4.3	Knowledge management practices.....	331
6.4.4	The role of human resource management in building knowledge management capacity...	332
6.4.5	Knowledge-driven human resource management .....	333
6.4.5.1	Knowledge-driven human recruitment practices .....	333
6.4.5.2	Knowledge-driven human training and development practices.....	334
6.4.5.3	Knowledge-driven human retention practices .....	335
6.4.6	Organisational culture and structure .....	336
6.4.7	Organisational culture and the role of HR in facilitating knowledge-driven culture .....	336
6.4.8	Organisational structure and the role of HR in facilitating knowledge-driven structure ....	338
6.4.9	Organisational barriers pertaining to effective knowledge management.....	338
6.4.10	Alignment and integration of HRM practices in the management of organisational knowledge loss.....	339



6.5	Proposed framework .....	341
6.6	Implications for theory, policy and practice .....	344
6.7	Limitations and suggestions for future research .....	345
6.8	Final conclusion .....	347
LIST OF REFERENCES.....		349

## LIST OF FIGURES

Figure 1: State-owned enterprises in the Fortune Global 500.....	8
Figure 2. SOEs' influence on urban growth and development.....	9
Figure 3: Map of the literature review used in the study.....	45
Figure 4: Resource-based view versus Market-based view.....	48
Figure 5: Human resources and competitive advantage.....	50
Figure 6: Peteraf's cornerstones of competitive advantage.....	54
Figure 7: Source of sustained competitive advantage.....	55
Figure 8: The SECI knowledge creation framework.....	57
Figure 9: HRM practices affecting KM outcomes.....	69
Figure 10: Interaction of organisational culture and knowledge management.....	94
Figure 11: A road map of the research methodology for the current study.....	104
Figure 12: Four main mixed methods research designs.....	133
Figure 13: Network diagram of the role of HRM in building KM capabilities.....	173
Figure 14: Network diagram of the role of HRM practice supporting KM.....	178
Figure 15: HRM training and development practices supporting KM activities.....	186
Figure 16: HRM retention practices supporting KM activities.....	198
Figure 17: Organisational culture and design.....	211
Figure 18: Overall effectiveness of human resource management practices.....	225
Figure 19: Job titles of the respondents.....	249
Figure 20: Recognition and causes of knowledge loss.....	250
Figure 21: Knowledge management practices.....	253
Figure 22: HR recruitment practice support to KM activities.....	254
Figure 23: Staff training practice support to knowledge management activities.....	257
Figure 24: Staff retention practice support to knowledge management.....	259
Figure 25: Overall effectiveness of HRM practices in supporting knowledge management.....	261
Figure 26: Organisational culture and design support to knowledge management.....	262
Figure 27: Scree plot and variance explained.....	267

Figure 28: Summary of the responses to knowledge management practices.....	270
Figure 29: Summary of the responses to human resource practices.....	272
Figure 30: Knowledge loss reduction framework.....	342

## LIST OF TABLES

Table 1: Research objectives, questions, methods and instruments .....	15
Table 2: Origin, similarities and approaches of RBV and KBV of the firm.....	62
Table 3: Ba and knowledge creation process .....	96
Table 4: Overview of the paradigm differences.....	112
Table 5: Qualitative versus a quantitative research approach.....	120
Table 6: Cronbach's coefficient alpha.....	159
Table 7: Participating SOEs from which research participants were drawn.....	168
Table 8: Time it takes to replace critical skills lost due to voluntary turnover.....	181
Table 9: Bartlett's test of sphericity.....	264
Table 10: Eigenvalues.....	265
Table 11: Correlation coefficient of factors and variables.....	268
Table 12: Factors and corresponding labels.....	269
Table 13: Surrogate variables and correlation coefficient.....	274
Table 14: Test for independence.....	276
Table 15: Bivariate test.....	278
Table 16: Odds ratio.....	278

## LIST OF APPENDICES

Appendix A: Interviews protocol with HR managers.....	391
Appendix B: Questionnaire for data collection from knowledge managers.....	405
Appendix C: Supervisor introductory letter for the interview protocol.....	413
Appendix D: Supervisor introductory letter for the survey questionnaire.....	414
Appendix E: Request for permission to conduct research at the state-owned enterprises.....	415
Appendix F: Survey questionnaire link e-mailed to the participants.....	417
Appendix G: Ethical approval certificate from the Research Review Committee.....	418
Appendix H: Ethics Approval Departmental Ethics Review Committee.....	420
Appendix I: An example of approval letter from the participating SOEs.....	422
Appendix J: Informed consent with HR Managers in the participating SOES.....	423
Appendix K: Consent to participate in a research questionnaire.....	424
Appendix L: Project creation on Atlas.ti.....	429
Appendix M: Grouping of codes and assigned quotations into code groups.....	430
Appendix N: An example of code report generated from Atlas.ti.....	431

## LIST OF INITIALISMS, ACRONYMS AND ABBREVIATIONS

AC	absorptive capacity
APP	annual performance plan
CAQDAS	computer-aided qualitative data analysis software
CoP	community of practice
CoMs	communities of mentoring
DFIs	development finance institutions
EFA	exploratory factor analysis
HPWPs	high-performance work practices
HR	human resources
HRM	human resources management
IDPs	individual development plans
IT	information technology
KBS	knowledge-based strategy
KBT	knowledge-based theories
KBV	knowledge-based view
KCC	knowledge creating company
KCT	knowledge creation theory
KIFs	knowledge-intensive firms
KM	knowledge management
KMC	knowledge management capability
KMS	knowledge management system
KMSA	Knowledge Management South Africa
KPIs	key performance indicators
KPAs	key performance areas
KSA	knowledge skills and abilities
KSAOs	knowledge, skills, abilities and other characteristics
KRT	knowledge retention theory

KT	knowledge transfer theory
L&D	learning and development
MBV	market-based view
MBT	market-based theory
MMR	mixed methods research
MNC	multinational companies
MSA	measure of sampling adequacy
NDP	National Development Plan
NPC	National Planning Commission
NPD	new product development
OECD	Organisation for Economic Co-operation and Development
PC	protective capacity
PDPs	personal development plans
PFMA	Public Finance Management Act
PMS	performance management system
QUAL	qualitative
QUANT	quantitative
RBT	resource-based theory
RBV	resource-based view
R&D	research and development
ROI	return on investment
SETA	Sector Education & Training Authority
SA	South Africa
SCA	sustained competitive advantage
SECI	socialisation, externalisation, combination and internalisation
SHRM	strategic human resource management
SMEs	subject matter experts
SAS	statistical analysis system
SOEs	state-owned enterprises
TA	thematic analysis

VRIN valuable, rare, imperfectly imitable and non-substitutable  
WSP workplace skills plan



# CHAPTER ONE

## INTRODUCTION AND CONTEXTUAL SETTING OF THE STUDY

### 1.1 Introduction

The slogan 'knowledge is power' remains a myth unless knowledge is shared, because knowledge becomes powerful only when it is shared and used. Therefore, knowledge should be shared, otherwise it will be lost as employees resign, retire, die and are laid off. Knowledge loss means loss of power. Similarly, in organisational terms, loss of organisational knowledge means loss of organisational-strategic competitive advantage and firm capabilities (Singh & Gupta 2020; Durst & Zieba 2020; Massingham 2018, Lin 2016; Daghfous, Belkhodja & Angell 2013). Voluntary turnover and retirement increase the vulnerability of affected organisations (Su, Bai, Sindakis, Zhang & Yang 2021; Dalkir 2020; Bratianu 2018). These factors influence the situation of knowledge loss and knowledge risks in many companies (Durst & Zieba 2020; Durst 2018; Zieba & Durst 2018). According to Durst and Zieba (2020:1), knowledge loss and its associated inherent risks negatively affect the sustainability of organisations.

Organisational knowledge loss is a central problem in knowledge management (KM) literature and practice (Mariano, Casey & Olivera 2020; Handa, Pagani & Bedford 2019; DeLong 2004; Levy 2011; McQuade et al., 2007; Parise et al. 2006; Scalzo 2006; Schmitt et al. 2011), together with its creation, transfer, application and retention (Nonaka 1994; Nonaka & Takeuchi 1995; Argote & Ingram 2000; DeLong 2004; Levy 2011; Szulanski 2000). However, loss of organisational knowledge is not regarded a central issue by human resource management (HRM) functions (Bordeianu & Buta 2015; Vaiman & Vance 2008). The literature points out that unfortunately a lot of valuable knowledge is leaving companies due to inadequate attention given to effective knowledge management (Mariano et al. 2020, Vaiman & Vance 2008). Staff turnover, whether voluntary and involuntary, means losing more than just workers (Monte 2020; Davis 2018). At the heart of turnover complexities is the loss of organisational knowledge. The complexity calls for the effective management of these organisational knowledge risks, together with the management of human resources as critical sources of that knowledge. Organisations

cannot compete effectively in the knowledge economy unless they are serious about knowledge retention and management (Ensslin, Mussi, Ensslin, Dutra & Fontana 2020; Gope, Elia & Passiante 2018; DeLong 2004).

The creation, acquisition, transfer and retention of specialised knowledge in organisations, especially in technical disciplines, are generally recognised in the knowledge management literature as issues of increasing importance (Ensslin et al. 2020; Argote & Ingram 2000; Calo 2008; DeLong 2004; Szulanski 2000). In contrast, the shortage of skilled workforce, high staff turnover and brain drain are central issues in the HRM literature. In theory and in practice, HRM is concerned with attrition and staff retention issues, whereas knowledge loss, its acquisition, creation, transfer and retention are central issues of KM. Knowledge, skills and experience of individual employees are said to be critical organisational assets and provide firms with sustainable competitive advantage in the knowledge economy. The development of human resources as sources of such knowledge assets, is therefore equally important for organisations operating in the new knowledge-based economy (Gope et al. 2018; Arunprasad 2017; Swart & Kinnie 2010; McFarlane 2008). Similarly, when employees leave their organisations, they take away the knowledge, skills and experience accumulated over a period of years on the job. Such transitions within organisations create a knowledge management challenge in the form of tacit knowledge loss.

The next section attempts to paint a picture of the landscape of organisational tacit knowledge loss within firms.

## **1.2 Background to the study**

Organisational tacit knowledge loss is a common phenomenon in many organisations across the globe. Knowledge loss in firms is closely related to employee turnover, which can be divided into voluntary and involuntary turnover (Su et al. 2021; Singh & Gupta 2020; Lin 2016; Zieba 2016; Phaladi 2011; Shaw et al., 1998; Sutherland & Jordan 2004). Voluntary turnover occurs when employees resign, whereas involuntary turnover is associated with the retirement, retrenchment, dismissal or death of employees (DeLong 2004; Durst & Wilhelm 2011; Stovel &

Bontis 2002). Shaw et al. (1998:512) point out that HRM practices affect quits and discharges at an organisational level. It therefore appears that loss of organisational tacit knowledge, as a knowledge management issue, cannot be fully detached from the HRM role of organisations. Hislop (2003:184) asserts that one of the key tasks of a company should be the retention of employees who possess critical knowledge. However, Durst and Wilhelm (2011) point out that the retention of employees cannot be ensured forever in the knowledge-based competition. The loss of critical knowledge workers such as scientists, engineers, researchers and technicians may expose companies to many risks. The loss of critical knowledge may cause organisations to experience serious productivity and capacity risks (Durst & Zieba 2019; Durst 2018; Zieba & Durst 2018; DeLong 2004; Stam 2009). DeLong (2004:31) posits that organisational knowledge loss can have a negative influence on the business strategy and performance in five main ways, which means that the capacity to innovate is reduced; the capacity to pursue growth strategies is exposed; reduced effectiveness endangers low-cost strategies; losing knowledge can give rival companies an added advantage; and finally, losing certain knowledge at the unexpected times build-ups vulnerability.

Staff turnover is not the only source and cause of organisational knowledge loss. Globally, this is largely attributed to demographic factors characterised by an aging workforce and a lack of suitably trained and experienced younger replacements or entrants (Durst, Lindvall & Bruns 2018; DeLong 2004; Streb et al., 2008). Many employees born in the late 1940s up to 1964, the so-called 'baby boomers', are beginning to retire *en masse* and they are leaving with a wealth of organisational knowledge in their minds (Sumbal, Tsui, See-to & Barendrecht 2017; Eckardt, Skaggs & Youndt 2014; Dychtwald, Erickson & Morison 2004; Slagter 2007; Stam 2009; Strack, Baier & Fahlander 2008). It is common wisdom that the retiring of baby boomers is probably no news to anyone. Many authors and researchers such as Durst & Zieba (2020), Rashid et al. (2019), Calo (2008), Joe (2010) and Poole and Sheehan (2006) contend that in addition to the loss of expertise and on-job knowledge obtained during employees' careers, the loss of client intelligence, the loss of established internal and external networks and the loss of social and networking skills may also reduce organisational capacity to perform and innovate. Workers who reach retiring age are important element contributing to a situation of

organisational knowledge attrition (Sumbal et al. 2020; Bratianu 2018; Sumbal et al. 2017; Phaladi 2011). This means that employees with valuable knowledge and skills will take these knowledge and skills with them when they finally retire. Briefly, this implies a reduction in the organisations' overall knowledge stock. Massingham (2008: 543-544) stresses the impact of knowledge loss in the context of intellectual capital theory and argues that the retiring of key members of staff will result in lost human capital, lost social capital, lost structural capital and lost relational capital. The loss of such intellectual capital may, for some obvious reasons, threaten organisational performance, since knowledge, skills and experience provide organisations with sources of sustainable competitive advantage.

From the literature reviewed, it appears that in many organisations employee downsizing also contribute to knowledge loss. Chadwick, Hunter and Walston (2004) point out that human resource downscaling is a common strategy to enhance operational efficiency through work reductions. Cascio (1993:96) defines it as "planned eliminations of positions or jobs" and states that staff reduction has nevertheless been called into question as a practice to increase a firm's long-term survival. The existing body of knowledge points out that many employee-downscaling interventions fail to retain mission-critical capabilities and human capital (Eckardt et al. 2014; Borzillo & Probst 2011; Guthrie & Datta 2008; Schmitt et al. 2011). The strategic human resource management view also indicates that reducing employees runs the risk of undermining sustainability of companies involved in such organisational cost reduction initiatives. Human resource downscaling and organisational restructuring efforts may result in the loss of key human capital and employees, leading to deteriorating productivity and inefficiencies (Eckardt et al. 2014; Bedeian & Armenakis 1998 in Schmitt, Borzillo & Probst 2011). It is also argued that if downsizing strategies are not prioritised and implemented accordingly, such practices run the risk of causing a major loss of critical organisational knowledge and memory, especially if the key staff members are laid off (Fisher & White 2000; Guthrie & Datta 2008).

Brain drain, skills shortages and high turnover in South African companies have been largely attributed to the organisational knowledge loss, which is considered a crisis (Erasmus & Breier 2008). However, this has been done from a skills perspective. In South Africa this phenomenon can be regarded as a special case, because the country has a relatively young population. Even

though the demography of South Africa differs from other countries, from a skills perspective the country faces similar issues as other countries regarding organisational knowledge loss, transfer and retention in public utilities, which need specialist and technical knowledge to deliver services (Phaladi 2011). Phaladi's study (2011) was the first of its kind in South Africa to look primarily at the issue of 'loss of knowledge' from a KM perspective regarding impending retirements in a public utility. In similar studies, Martins (2010; 2011) and Martins and Meyer (2012) also acknowledge the phenomenon of knowledge loss in organisations. However, they focused on organisational and behavioural factors that influence knowledge retention in the organisation.

According to Storey and Quintas (2001:344), it is such a contradiction that while so many researchers and champions on knowledge management have established that KM ultimately depends upon employees, it is precisely the human or personnel aspect that has been most neglected in research in this emerging field of study. Moreover, human resource managers and analysts have been failing to make their mark in this evolving field. Many HR studies acknowledge the fact that HR has not come forward to address central issues in knowledge management (Bordeianu & Buta 2015; Currie & Kerrin 2003; Hislop 2003; Scarbrough & Carter 2000; Vaiman & Vance 2008). KM literature is accused of having made only partial and limited use of human resource management concepts and frameworks (Hislop 2013, 2003). People management perspectives have yet to be fully developed, as far as managing the phenomenon of tacit knowledge loss in the organisation is concerned. Considering this gap in the KM literature and considering Phaladi's study (2011), which did not look at organisational knowledge loss in general but more specifically on the critical role played by HRM in the process of knowledge creation, transfer and retention, the research reported in this thesis attempted to close the gap in the existing body of knowledge on KM and HRM in South Africa. More so, the study determined the challenges of organisational knowledge loss from a much broader perspective.

It is common knowledge that though South Africa has a relatively young population, many of its engineers, scientists and technicians in public utilities are at the advanced stages of retiring within the next few years. What complicates the situation of knowledge loss in the country even more, is the problem of brain drain, shortage of skills and high employee turnover in the

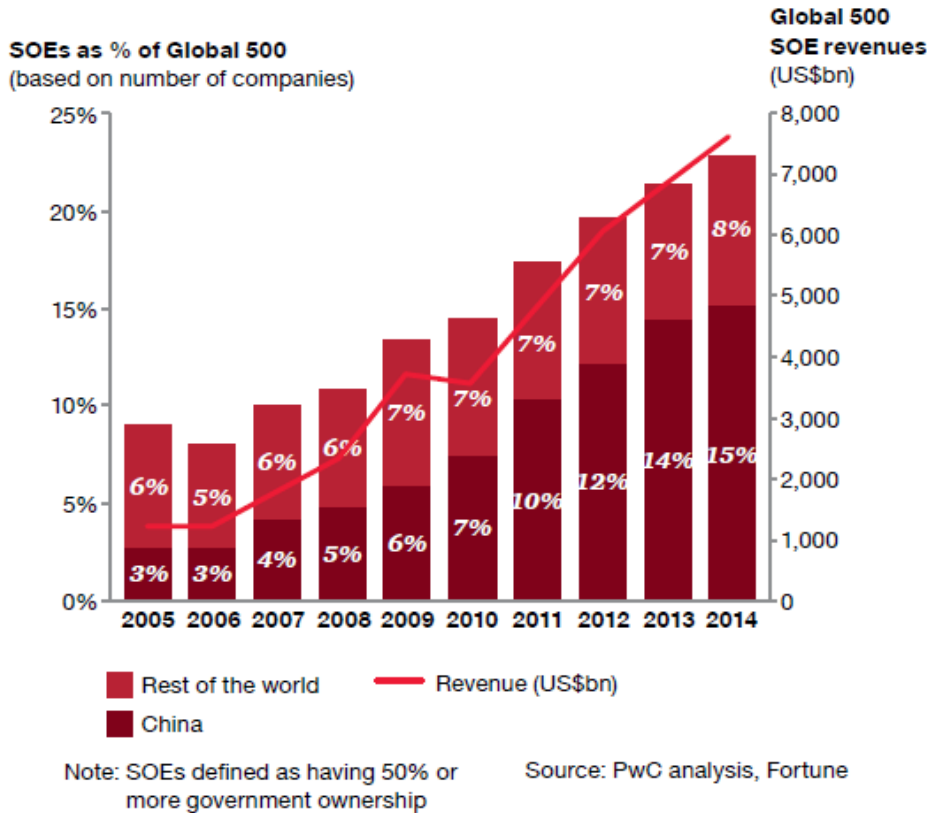
technical disciplines of the economy. Though it is believed that government is giving the issue of skill shortages considerable attention, DNA Economics Report (2020) laments the fact that skill shortages are still very real in South Africa. The issues of skill shortages contribute to lost knowledge in an organisation. Blankley et al. (2004) attest the concern that since 1994, South Africa has undergone a loss of key skilful people through emigration. It is an interesting development that over the same period, manufacturing, technology, science, and engineering related sectors have been going through a major revolution, which included increasing pressures on research development sector and universities to supply more graduates in science, engineering and technology disciplines. These circumstances pose organisational risks in the sense that organisational knowledge, skills and experience will be lost when these experts retire and knowledge transfer and retention strategies are not in place.

Engineering, scientific and technical specialists have scarce skills gained and honoured through years on the job. These scarce skills are critical to drive organisational growth strategies of South African state-owned enterprises. Thus, the loss of such knowledge creates a threat for the survival and sustainability of state-owned enterprises. Whenever critical employees in the science or engineering related industries retire or resign, their knowledge, skills, experience, judgment and social capital networks depart with them (Phaladi 2011). Besides, the risk of losing subject matter experts and their skills about technical issues, there is also the risk of losing valuable social capital and professional related networks, which are needed for problem solving or decision-making, gathering information or networking with colleagues. In addition, the current generation of subject matter experts such engineers, technologists, technicians and scientists, in their own technical and engineering specialised fields, will be harder to replace. When they retire, valuable organisational tacit knowledge will gradually disappear from the state-owned enterprises.

The section below provides a contextual setting of the study.

### **1.3 Contextual setting of the study**

Throughout the globe, state-owned enterprises are known to play a critical role in the economic development of their countries. In the global economy, SOEs have grown in influence in the past decade (OECD 2015; PWC 2015). According to PWC (2015:9), the proportion of SOEs among the Fortune Global 500 companies has grown from 9% in 2005 to 23% in 2014. This indicates the significant inputs of SOEs as serious role players in the economies of the world (see Figure 1). SOEs are independent bodies, partially or wholly owned by the government (Benassi & Landoni 2017:6). They are government-backed and drivers of socio-economic development. The PWC research report (2015:8) on state-owned enterprises indicates the fact that they are becoming catalysts for sustainable public value creation in the knowledge economy. Globally, it is emphasised that SOEs are growing in exponential influence and are cornerstones of the knowledge economy (Vlasov & Panikarova 2015; Antonelli, Amidei & Fassio 2014). In western countries, SOEs have played a major role in post-war development, accounting for a greater share of the GDP (Antonelli et al. 2014; Benassi & Landoni 2017). Similarly, in developing economies such as Russia (Vlasov & Panikarova 2015), India and China (PWC 2015; Chen and Young 2010), SOEs are at the forefront of economic growth.



**Figure 1: SOEs in the Fortune Global 500**

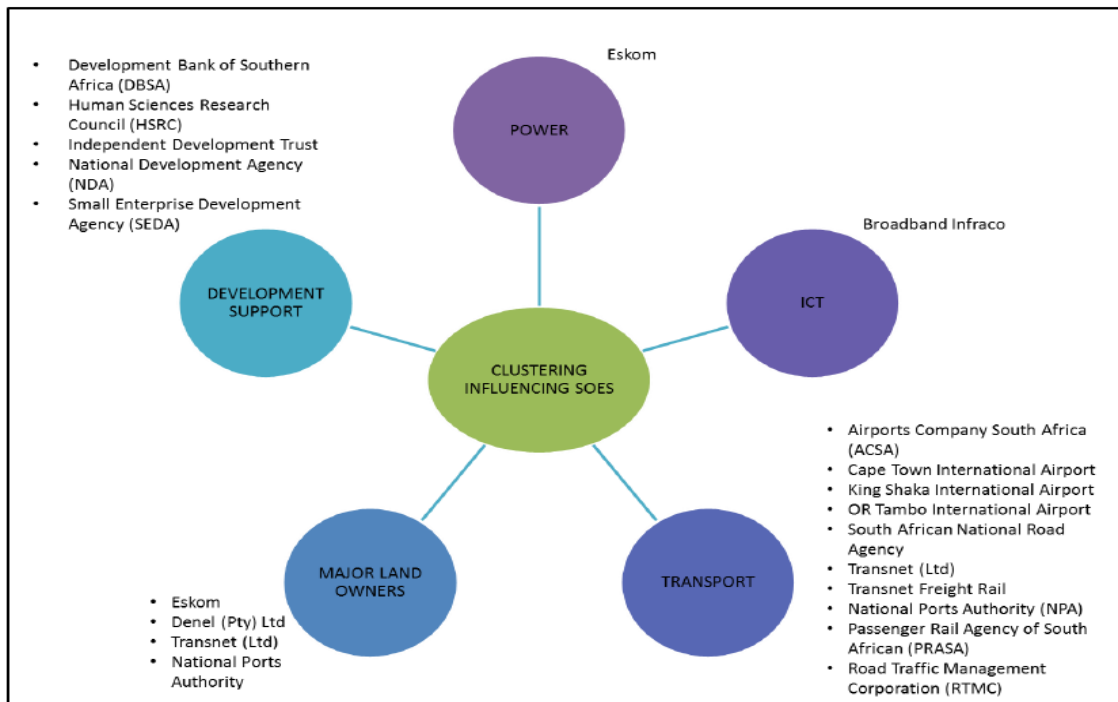
(Source: PWC 2015:9)

In South Africa, SOEs are playing an important role in building a democratic and developing state and positioning the country in the knowledge economy (Gumede, Govender & Motshidi 2011). Sultan Balbuena (2014:40) indicates that there are over 300 public-owned utilities across all levels of government reporting to relevant ministries. Sultan Balbuena (2014) emphasises that this number could surpass 500 if the subsidiaries in some of those SOEs are included. The existence of SOEs differs across sectors, ranging from the energy sector, petroleum refining sector, transportation sector, financial services, water utilities, and telecommunication services to aerospace and defence (PWC 2015, Wendy Ovens and Associates 2013 and McGregor, n.d.). State-owned enterprises in South Africa play an important role in providing economic infrastructure, employment and development (McGregor, n.d.). According to Wendy Ovens and Associates (2015:5), SOEs are critical stakeholders and key contributors in shaping the urban



development landscape. They are the most important contributors and stakeholders in shaping the urban landscape in major metropolitan areas in the country, as illustrated in Figure 2 below.

There were nine state-owned companies that volunteered to participate in this study. Two of them are listed in the PFMA as schedule 2 entities (major public entities), five are listed as schedule 3A entities (national public entities) and two are listed as schedule 3B entities (national government business enterprises) (National Treasury 2015). These SOEs were drawn from five sectors of the utility economy, two from development finance institutions (DFIs), two from the services sector, two from the compliance and regulatory sector, two from the research and development (R&D) sector and one from the water sector. These state-owned companies are playing a critical role in positioning South Africa as a developing state and, thus, driving the economic growth of the country (National Planning Commission 2013; Wendy Ovens & Associates 2013). For the purpose of maintaining anonymity of these state-owned enterprises, they remain anonymous in the study.



**Figure 2: SOEs’ influence on urban growth and development**

(Source: Wendy Ovens & Associates 2013:5)

The plan of the *National Development Plan 2030* (National Planning Commission 2013) to create a capable and developmental state through state-owned enterprises is facing many challenges on different fronts, ranging from financial mismanagement, misalignment and corporate governance issues to complex human capital loss (Tsheola, Ledwaba & Nembambula 2013; Wendy Ovens & Associates 2013). If these challenges are left unattended, they could hamstring the objectives of realising the envisaged developmental state. State-owned enterprises in South Africa are sometimes called public utilities, parastatals or public enterprises, since the state has a stake in these companies. SOEs support government's economic strategies by providing infrastructure to business and in reducing unequal access to public services (National Planning Commission 2013). As such, they remain strategically connected to the government.

All over the world, state-owned enterprises across all sectors are facing business pressures such as a loss of organisational knowledge due to impending retirements, poor governance, brain drain, skill shortages, high staff turnover and downsizing (Sumbal et al. 2017; Rasool & Botha 2011; Phaladi 2011; Erasmus & Breier 2008; Strack et al. 2008; Chadwick et al. 2004). These challenges certainly affect their capacity to deliver on their developmental objectives and to meet government expectations. High staff turnover at board, senior management, professional and technical levels does not help the situation as this causes the erosion of the organisational memory. Because of many business pressures and challenges facing SOEs in the country, these issues could hamper their central role in shaping the national development trajectories (Tsheola et al. 2013). South African SOEs are not excluded from many of these challenges. Benassi and Landoni (2017) assert that many SOEs experience organisational challenges such as knowledge spillover and attrition, which in a way threatens their innovation capacity and competitive advantage.

#### **1.4 Research problem**

Loss of organisational knowledge is a global phenomenon (Singh & Gupta 2020; Monte 2020; Handa et al. 2019; Rashid et al. 2019; Durst 2019; Singh & Gupta 2018; Sumbal et al. 2018; Massingham 2018; Eckardt et al. 2014, Daghfous, Belkhodja & Angell 2013). According to Sumbal, Tsui, Durst, Shujahat, Irfan & Ali (2020:5) there is a shortage of literature that

systematically and empirically explore factors and causes of employees' knowledge loss across sectors of the economy. Knowledge in organisations is contingent on employees. However, the existing frameworks on knowledge loss, as depicted in the literature (Sumbal et al. 2020; Durst 2019; Daghfous et al 2013), do not empirically and systematically address the knowledge loss phenomenon by integrating HRM and KM practices in mitigating the risks associated with such loss. Knowledge loss affects a number of industries across the globe, for example, the manufacturing industry (Sumbal et al. (2020); the oil and gas industry (Sumbal et al. 2017); the municipal service sector (Durst et al. 2020); military organisations (Singh & Gupta 2020); the information technology sector (Rashid et al. 2019); project environments (Karagoz, Whiteside & Korthaus 2020; Rashid et al. 2019); public utilities (Benassi & Landoni 2017; Phaladi 2011); and small and medium-sized enterprises (Durst & Ferenhof 2014). According to Lin, Chang and Tsai (2016:1757), knowledge loss affects the absorptive capacity and performance of the firm. Organisational knowledge loss in the public utility industry of South Africa is a pertinent research area, as state-owned enterprises are now important sectors playing a key role in economic and infrastructure development, and positioning the country as a developing state.

When an organisation loses employees, it loses skills, experience, knowledge and its corporate memory. Such losses contribute to organisational knowledge attrition, thus negatively affecting the knowledge base of companies. Monte (2020:1) argues that knowledge loss is a critical issue that should not be ignored. It negatively affects the sustainability and organisational performance of many business enterprises (Durst & Zieba 2020; Durst, Hinteregger & Zieba 2019). HRM practices or systems are lamented of being ineffective in instilling the required knowledge acquisition and knowledge sharing behaviours in modern economies and companies (Zaim, Keceli, Jaradat & Kastrati et al. 2018; Chuang, Jackson & Jiang 2016; Lepak, Hu & Baer 2012; Vaiman & Vance 2008). Lochhead and Stephens (2004:1) state that the magnitude and nature of these losses is a critical management issue, affecting productivity, profitability, and product and service quality. For employees, high staff turnover, retirement of skilled experts and downsizing can negatively affect employment relationships, morale and workplace safety. From a knowledge and human resource management perspective, such situations create serious organisational management challenges of knowledge transfer and talent retention issues.

While well-designed HRM practices are recognised as the drivers of organisational performance outcomes (Gope et al. 2018), Chuang et al. (2016), Pe'er (2016), Buta (2015) and Hislop (2013) postulate that there is a little research examining how HRM systems influence knowledge management behaviours such as acquisition, application, transfer and retention. The problem of organisational knowledge loss in critical technical and specialist fields has not been adequately researched interdependently from knowledge and human resource management perspectives. It is predominantly researched either as KM or HRM (Zaim et al. 2018; Bordeianu & Buta 2015; Vaiman & Vance 2008; Hislop 2013, 2003). To a significant extent, employees embody 'knowledge in use' in organisations. Similarly, from a knowledge-based view (KBV) of the firm, as advanced by Grant (1996), the employee know-how that greatly contributes to a firm's human core competencies provides companies a strategic competitive advantage to adapt and compete in their respective market industries (Haesli & Boxall 2005; Prahalad & Hamel 1990). Many HRM practices tend to focus largely on recruiting, developing and retaining employees. However, they fail to adequately recognise that human talent is both tacit and explicit repositories of potentially valuable knowledge (Papa, Dezi, Gregori, Mueller & Migilietta 2020; Zaim et al. 2018; Chuang et al. 2016; Vaiman & Vance 2008). It is argued that a higher degree of knowledge creation, transfer and retention is expected when HRM practices are applied as an integrated system of interdependent practices (Minbaeva 2005:125). A lack of synergy and integration creates a management challenge to contain loss of knowledge in the organisations. A study by Zaim (2018:316) posits that despite the existence of a positive relationship between knowledge management and HRM, several KM and HRM practices tend to neglect the importance of the positive relationship between the two domains. Baldi and Trigeorgis (2020:781) call for HRM flexibility in the deployment of human resources in the face of the growing demand for skills and skill shifts, and changing workplace demographics. Therefore, this study investigated the role of human resource management practices in building knowledge management capability in order to address knowledge loss in state-owned enterprises. As such, the research project has implications for policymaking and professional practice at human resource management and knowledge management levels.

## 1.5 Research objectives

The purpose of this study was to develop a framework for integrating knowledge management and human resource management for the reduction of organisational knowledge loss in the South African state-owned enterprises. The study attempted to address these issues from knowledge management and HRM perspectives and offer a plethora of integrated KM and HRM strategies to contain knowledge loss risks. Human resource management practices can play a moderating role in employee retention (Papa, Dezi, Gregori, Mueller & Miglietta 2020), thus helping organisations in the management and reduction of organisational knowledge risks associated with staff turnover. The study assessed the fusion of human resource management and knowledge management, which is important for both the current research and knowledge transfer and retention practices. Both strategic management concepts have a critical role to play in the management of organisational knowledge loss (Gope et al. 2018; Zaim et al. 2018; Bratianu 2018; Arunprasad 2017; Hislop 2013; Schmitt et al. 2011; Whelan & Carcary 2011). Gope et al. (2018:653) emphasise the importance of human resource management practices and KM in building knowledge management capability in organisations. In order to achieve the main aim of the study, the following objectives, outlined below and also in Table 2, were pursued:

- I. To identify causes of organisational tacit knowledge loss in selected South African state-owned enterprises.
- II. To establish whether organisational knowledge and employees are recognised as sources of sustained competitive advantage.
- III. To establish whether organisational knowledge loss and its transfer are recognised and treated as a knowledge management (KM) issue or a human resources management (HRM) issue or an organisational issue in selected state-owned enterprises.
- IV. To establish the role of human resource management in building and facilitating knowledge management capabilities in selected state-owned enterprises.

- V. To identify KM practices currently in place and their effectiveness in addressing the phenomenon of organisational tacit knowledge loss in selected state-owned enterprises.
- VI. To determine knowledge-driven HRM practices, and their role and effectiveness in reducing loss of organisational tacit knowledge.
- VII. To establish whether organisational culture and structure support knowledge management and the role of HRM in building a knowledge-driven culture and design in selected state-owned enterprises.
- VIII. To assess the overall impact of HRM practices in facilitating the management and reduction of organisational knowledge loss in the state-owned enterprises.
- IX. To identify areas and gaps for alignment and integration of HRM practices in managing impending organisational knowledge loss risks in the state-owned enterprises.

**Table 1: Research objectives, questions, methods and instruments**

<b>Objective</b>	<b>Research question</b>	<b>Research method</b>	<b>Data source</b>	<b>Research instruments</b>
To identify causes of organisational tacit knowledge loss in selected South African state-owned enterprises.	What are the causes of tacit knowledge loss in the selected state-owned enterprises?	Mixed method research (MMR) – Qualitative and quantitative.	HR managers Knowledge managers and employees Practitioners Annual reports	Interviews Questionnaire Document analysis
To establish whether organisational knowledge and employees are recognised as sources of sustained competitive advantage.	Do the state-owned enterprises put knowledge and employees at the centre of business strategy?  How do they prioritise knowledge and employees in their organisational strategy as sources of sustained competitive advantage?	Mixed method research (MMR) – Qualitative and quantitative	HR managers Knowledge managers and employees Practitioners Annual reports	Interviews Questionnaire Document analysis
To establish whether organisational knowledge loss and its transfer are recognised and treated as knowledge management (KM) or human resources management (HRM) or an	Do the state-owned enterprises recognise knowledge loss as a key strategic issue?  Is the loss of organisational knowledge recognised and treated as a knowledge	Mixed method research (MMR) – Qualitative and quantitative	HR managers Knowledge managers and employees	Interviews Questionnaire

organisational strategic issue in the selected state-owned enterprises.	management issue or a human resource management issue or an organisational issue?			
To establish the role of human resource management in building and facilitating knowledge management capabilities in state-owned enterprises.	<p>What is the role of HRM in knowledge management?</p> <p>Is there a role for HRM in knowledge management and to what extent does it facilitate or support management of knowledge in the SOEs?</p> <p>What are the HRM practices currently in place that enhance knowledge management capabilities?</p> <p>How close are HR managers working with knowledge management practitioners in managing organisational knowledge?</p>	Mixed method research (MMR) – Qualitative and quantitative	<p>HR managers</p> <p>Knowledge managers and employees</p> <p>Practitioners</p> <p>Annual reports</p>	<p>Interviews</p> <p>Questionnaire</p>
To identify KM practices currently in place and their effectiveness and impact in addressing the phenomenon of organisational tacit knowledge loss in state-owned enterprises.	<p>Which knowledge creation practices and transfer and retention initiatives are currently in place to manage organisational knowledge loss risk?</p> <p>How effective are these strategies and initiatives in reducing organisational</p>	Mixed method research (MMR) – Qualitative and quantitative	<p>Knowledge managers and employees</p> <p>Annual reports</p>	<p>Questionnaire</p> <p>Document analysis</p>



	knowledge loss?			
To determine knowledge-driven HRM practices and their role and effectiveness in reducing loss of organizational tacit knowledge.	<p>Which knowledge-driven HRM practices are currently in place in the organisation that address loss of organisational tacit knowledge?</p> <p>How do HRM practices such as recruitment, training and development, and retention systems support knowledge management activities in the SOEs?</p> <p>How effective are these HRM practices in facilitating organisational knowledge management and mitigating the risk of knowledge, experience and skills leaving the SOEs unshared?</p>	Mixed method research (MMR) – Qualitative and quantitative	HR Managers Knowledge managers and employees Annual reports	Interviews Questionnaire Document analysis
To establish whether organisational culture and structures support knowledge management behaviours and the role of HRM in building a knowledge-driven culture and design in the SOEs.	<p>How does organisational culture and design support knowledge management behaviours in the state-owned enterprises?</p> <p>What role do HR departments play in facilitating knowledge-centric organisational</p>	Mixed method research (MMR) – Qualitative and quantitative	HR Managers Knowledge Managers	Interviews Questionnaire

	culture and design?			
To assess the overall impact of HRM practices in facilitating the management and reduction of organisational knowledge loss in the state-owned enterprises.	Do the HRM practices facilitate building knowledge management capabilities in the organisation?  How effective are the HRM practices in facilitating the management and reduction of organisational knowledge loss in the state-owned enterprises?	Mixed method research (MMR) – Qualitative and quantitative	HR managers  Knowledge managers	Interviews  Questionnaire
To identify areas and gaps for alignment and integration of HRM practices in managing impending organisational knowledge loss risks in the state-owned enterprises.	Is there a need for the integration of HRM practices in knowledge management?  How should the integration be approached, facilitated and implemented?	Mixed method research (MMR) – Qualitative and quantitative	HR managers  Knowledge managers and employees	Interviews  Questionnaire

## 1.6 Justification for the study

The justification for this study is the possible contribution to the body of knowledge in the field of knowledge management and HRM in so far as management of organisational knowledge loss is concerned. It is also to reduce existing gaps in the literature. In the empirical and theoretical literature of HRM and KM, organisational knowledge loss, skill shortage, turnover and the challenges resulting from knowledge transfer have been researched independently of one other. But what many KM scholars have missed from their predominantly theoretical perspective, is the

fact that effective knowledge management in practice is largely dependent upon human resource management (Gope et al. 2018; Zaim et al. 2018; Vaiman & Vance 2008). Practical HRM components such as recruitment of talent, training, succession planning and rewards management systems play a central role in the knowledge transfer and retention process.

In South Africa, the issues of aging technical employees, skill shortage and brain drain have been widely addressed, however, purely from a skill and HRM perspective (Erasmus & Breier 2008; Kraak & Press 2008). Knowledge loss in organisations cannot be left only to the whims of knowledge management; it is also an area of concern for HRM. Thus, HRM has a critical role in the knowledge transfer and retention process.

The important contribution of this study will be the integration of HRM practices in the knowledge management processes in organisations. Hegems and Verbeke (2004) note that past HRM research generally fails to consider the new challenges that HRM faces in knowledge-based organisations. The literature reviewed on the subject show a need to attend to the interface or relationships of strategic HRM practices and knowledge management processes in organisations (Papa et al. 2020). From the conceptual, empirical and knowledge management practitioner perspectives, the key issue is to understand how the deployment of specific human resource management strategies may best facilitate knowledge management processes such creation, transformation, transfer and harvesting (Papa et al. 2020; Gope et al. 2018; Vaiman & Vance 2008).

## **1.7 Originality of the study**

At a doctoral level, examination requirements often recommend that the judgement passed on the research work be often determined by the manifestation of originality and the substantial impact to an existing body of knowledge in the discipline. Originality is considered a ‘must’ in a PhD research. Originality is mostly described as the application of new approaches, methods or data, studying a new topic and doing research in an understudied area, as well as producing new novel concepts, models or frameworks and findings (Guetzkow, Lamont & Mallard 2004:191). Philips and Pugh (1999:61) argue that a doctoral degree is conferred for an original impact to the

existing body of knowledge in the field of study. The same study points out and agrees on six ways in which students may be considered to have shown originality in their research projects, namely:

- i. Generating a key piece of new scientifically proven knowledge in writing for the first time.
- ii. Adding to a previously researched piece of work.
- iii. Undertaking a novel work assigned by the research promoter.
- iv. Delivering a distinct original method, technique, approach or research findings in an otherwise unoriginal but competent piece of scientific work.
- v. Presenting many novel ideas, research strategies and interpretations to the research works previously undertaken by other researchers in the related field
- vi. Proving originality by testing somebody else's research findings, frameworks or models.

Philips (1992) further points out that research for a PhD degree can be original if it is undertaking empirical work that was never done before by others; making a research finding that has not been made before; using existing procedures but with a new interpretation; trying out something in a different national context that has previously only been done in other nations; taking a particular method or procedure and applying it in a new context; bringing new evidence to bear on an old issue; being cross-disciplinary or multi-disciplinary and using different research strategies; looking at new research areas that scientists in the discipline have not looked at before; and lastly, adding to an existing information in a way that has never been done before.

Although conceptual studies by Bordeianu and Buta (2015), Afiouni (2007), Hislop (2003), Oltra (2005), Soliman and Spooner (2000) and Vaiman and Vance (2008) have hinted at the critical relationship between some knowledge management practices and human resource management practices in managing organisational knowledge. These authors indicate that little empirical work has been done to address the phenomenon of organisational knowledge loss from both KM and

HRM perspectives. Globally, few similar empirical works seem to have been carried out to establish the connection between the two strategic concepts. The empirical study by Fong, Ooi, Tan, Lee and Chong (2011) examined the association between human resources management practices and knowledge sharing from the Malaysian industry context. Oltra (2005) examined the role of HRM in determining the effectiveness of knowledge management in Spanish companies. However, this study and other similar studies provide limited empirical perspectives on how loss of organisational tacit knowledge can be effectively managed through integration of KM and HRM concepts. A closely-related study is that of Urbancova and Linbartova (2011) that investigated staff turnover as a possible threat to knowledge loss. The study viewed the phenomenon of knowledge loss mainly from a knowledge continuity perspective. The findings of the study posit that labour turnover results in an organisation's inability to ensure knowledge continuity. The study highlights organisational factors that affect employees' decision to leave the organisation. Similar studies were also conducted by Stovel and Bontis (2002) in the Canadian financial services and by Smale (2008) who researched global HRM integration in multinational corporations from a knowledge transfer perspective.

It is of critical importance that PhD research is considered an original project that makes an original contribution and shows evidence of original thinking. It is possible to be original in terms of a research topic, approach, or presentation as was earlier alluded. However, Blaxter, Hughes and Tight (2002:14) caution that the element of originality in research is, realistically, likely to be very small. These authors assert that highly original research is very unusual.

Locally, it seems not much research have been done to investigate the loss of organisational tacit knowledge in the state-owned enterprises interdependently from KM and HRM perspectives. Therefore, this study can be regarded as original in approach, methodology and in giving a South African perspective to the phenomenon of organisational knowledge loss. It can be said that research is original if it focuses on an understudied area, region or an understudied time period (Guetzkow, Lamont & Mallard 2004). This study is original in the sense that an integration of KM and HRM practices in managing organisational knowledge loss holistically has not been researched before in South African public utilities. Moreover, it is also original in both methodology (using mixed research methods) and approach, as this method has never before

been used in investigating the phenomenon. The study, therefore, meets the criteria of originality (Philips 1992) as highlighted earlier because it carried out empirical research that has not been done before in South Africa.

Smale (2008), Minbaeva (2005) and Bender and Fish (2000) have researched the connection between KM and HRM in multinational companies, the relationship between KM and HRM practices, and how they work in tandem by managing organisational knowledge loss in public utilities. However, none of these issues has been researched from a South Africa perspective. These two strategic management concepts have a critical role to play in facilitating knowledge creation, acquisition, transfer and retention in the organisations. The study carried out by Phaladi (2011) in South Africa, focused on the impending knowledge loss caused by retiring knowledge experts in state-owned water utilities and provided a range of focused knowledge transfer and retention strategies.

Organisational knowledge loss is global phenomenon. South African companies are no exception to this trend. No evidence could be found that investigated the relationship between KM and HRM practices in facilitating knowledge creation, transfer and retention in the South African SOEs. There is a need for integrating KM and HRM practices in managing and mitigating organisational knowledge loss. Some studies suggest that many knowledge transfer and retention efforts fail, largely because they lack integration (DeLong 2004; Vaiman & Vance 2008). Therefore, in addressing the knowledge gap, this study aimed to specifically address issues of KM and HRM integration in the facilitation of knowledge transfer and retention in addressing problems of knowledge loss in the country. Storey and Quintas (2001) suggest that the weakness of the linkages between HRM and KM is because, to some extent, HRM academics have been loath to enter this debate. One of the research objectives of this study was therefore to contribute to the development of both KM and HRM literature in the facilitation and management of organisational knowledge loss. Both KM and KRM have a facilitation role in knowledge transfer and retention.

## **1.8 Significance of the study**

The outcome of the study will aid South African public utilities and other organisations in similar transitions to plan and manage the inevitable knowledge loss much more holistically, efficiently and effectively. This study will also add some theoretical significance to the KM literature in the sense that the study will contribute to the existing body of knowledge on the subject under investigation. In addition, it will provide solutions to the research problem. But mostly, it offers methodological significance by applying new research methods in the form of mixed methods research to the problem of tacit knowledge loss in public utilities. Much of the literature reviewed on organisational knowledge loss tends to focus more on the challenges solely from KM perspectives. Bordeianu and Buta (2015), DeLong (2004) and Vaiman and Vance (2008) posit that many knowledge transfer and retention efforts fail, mainly because they do not appreciate the role of HRM and its infrastructure in the support of such interventions. By converging studies on strategic HRM and knowledge management on organisational tacit knowledge, this thesis aimed to develop an integrated framework that captures a company's HRM strategy and practices, which can be used to drive organisational knowledge management strategy.

## **1.9 A brief literature review including key theories and models**

Loss of organisational knowledge affects an organisation's capacity to act and maintain its competitive advantage in the market. In the current knowledge economy, more and more organisational leaders are realizing that most of the knowledge about work-related issues reside in people's minds (Scalzo 2006:60). From a resource-based and knowledge-based view (KBV) of the firm, intangibles such as knowledge assets are key drivers of production in the knowledge economy (Takeuchi 2013; Grant 1996). A KBV treats knowledge as a basis for sustained competitive advantage (Argote & Ingram 2000). However, this theory does not explicitly address and articulate the loss of such valuable organisational resource, though it makes it explicitly clear that knowledge is the driver of superior organisational performance. By virtue of it being central to organisational sustainable competitive advantage, one can argue that loss of this valuable organisational asset is implied in the KBV theory, even if it is not explicitly indicated as such.

The implication of knowledge loss is that companies will find it extremely difficult to maintain and sustain their competitive advantage in the intense knowledge-based economy. The KBV of strategy is different from other schools of thought about strategy development because its focus is entirely on knowledge as the driver of the strategy (Takeuchi 2013:68).

A knowledge-based strategy (KBS) of the firm sees firms as a knowledge creation and distribution system (Nonaka 1994). The study theorises knowledge as a resource (McInerney & Koenig 2011). Knowledge is a resource that gives companies a sustained competitive advantage (Takeuchi 2013; Argote & Ingram 2000; Grant 1996). However, business pressures such as staff turnover, skill shortages and impending retirements threaten the capabilities of knowledge-based firms to create and manage knowledge. So, knowledge-based competitive advantage rests upon and needs a proper management of human capital. Boisot (1998) argues that firms need to make a concerted effort to secure their knowledge assets.

Staff turnover, whether voluntary or involuntary, has a negative impact on accessibility of experiential knowledge in social networks (Monte 2020; Su et al. 2021; Eckardt et al. 2014; Olivera 2000). Moreover, staff turnover erodes organisational memory and threatens organisational growth strategies in companies where such calamities happen. Nevertheless, quite a few business executives look at the longstanding implications of such issues. Some organisations attend to these departures of their employees with retention strategies that focus on capturing and storing what an individual staff member knows. However, many companies are not paying attention to the impact that departing staff members have on the informal social capital networks central to getting work done in an increasingly innovative and multifaceted business environment (Su et al. 2021; Eckardt et al. 2014; Parise, Cross & Davenport 2006). Loss of the firm-specific human capital occurs in several ways (Durst & Zieba 2020; Singh & Gupta 2020; Zieba & Durst 2018) including but not limited to the following:

- Retirement – when the source leaves an organisation due to an old age.
- Turnover – when the source looks for greener pastures outside the organisational boundaries.



- Incapacitation – when the source is lost to an organisation, because of either the death or physical incapacitation.
- Employment change – when the source departs from his current position for another employment opportunity within the company.

Factors that affect the likelihood of knowledge loss include age, employee well-being, rareness of skills, war for talent, years of service, and social networks. All of these factors are part of the organisational life in any enterprise and makes loss of knowledge inevitable in many organisations. It is of paramount importance to address this challenge by asking: “Whose problem is this anyway? Is it a KM, an HRM, or organisation an organisational management issue?” An important aspect of thinking strategically about knowledge retention is to understand the interdependence of possible solutions (DeLong 2004:56). However, integration is the key for knowledge management strategies to be effective and efficient. According to DeLong (2004:58), organisations require an integrated set of HRM capabilities to manage these challenges. Organisational HR infrastructure has a critical role to support knowledge management practices. It is also reported in the literature that HRM and KM have to play a central part in facilitating knowledge transfer and retention if the organisation is not well recognised (DeLong 2004; Vaiman & Vance 2008). A mixture of conventional human resource management policies, programmes, and practices are needed, along with some new innovative practices to help organisations create talent management systems that manage employees and knowledge resources effectively (Lengnick-Hall & Andrade 2008). To understand what exactly happens when a key organisational member leave, could assist to better establish the consequences of knowledge loss and pay attention to the required plan of action.

By tradition, human resource management pays attention to issues of staff turnover by recruiting a new skill or capacitating existing organisational members as replacements. Employee exit has not been considered a serious issue in terms of knowledge loss because it has been assumed that a ‘quasi-equilibrium’ was reached through staff replacements (Massingham 2008). Some employees are indispensable. These are staff members who possess valuable, rare, difficult-to-imitate firm-pecific knowledge and expertise, which makes them critical to the organisation’s superior performance (Starke et al. 2003). Similarly, when they leave the organisation, the

impact of such knowledge loss will be felt by the organisation. According to Durst and Zieba (2020) and DeLong (2004), organisational knowledge loss can have an impact on business strategy and operation in a number of ways, namely:

- Decreased innovative capacity for product and services.
- The capacity to pursue competitive strategies is limited.
- The inefficiencies will undermine cost-saving strategies.
- Loss of valuable organisational knowledge to rival companies can threaten sustainability.
- Losing certain expertise and skill at the unexpected moments build-up vulnerability and therefore, increase organisational knowledge risks.

Companies must have to a plan of action and identify these conditions before they happen, as this will help them to craft, align and integrate their knowledge transfer and reduction interventions. Thinking strategically about the impact of such knowledge losses may enable companies to identify the threats and opportunities posed by both voluntary and non-voluntary turnover. The corollary of a best practice model is that the success of a KM programme may be realised through paying attention to gaining the commitment of employees to the programme (Carter & Scarbrough 2001). The HRM function in organisations needs to pay careful attention to the management of its employees if it were to make a meaningful contribution to organisational knowledge transfer and retention (Bordeianu & Buta 2015). HR practices need to take account of strategic initiatives such as KM because it is critical for such initiatives to become a success.

Key theories of the firm central to this study are unpacked in the next section and in the subsequent chapter to provide a better understanding of the theories.

### **1.10 Theoretical grounding of the study**

Human resources (through the lens of a RBV) and organisational knowledge resources (through the lens of a KBV) are sources of superior performance. Therefore, loss of these vital knowledge assets threatens the competitive advantage of an organisation and renders the organisation into serious vulnerability risks (Su et al. 2021; Dalkir 2020). From a KBV, knowledge is perceived as

the most critical asset (Grant 1996) for ensuring organisational innovation and sustainability. Ngulube (2018:6) argues that theory development happens inductively, whilst it can be used deductively and abductively in the research process. At a theoretical level, this study is grounded in various concepts or theories of the firm and of competitive advantage such as the resource-based view (Barney 1991 & 2001), the knowledge-based view (Grant 1996, 1997; Sveiby 2001), sustained competitive advantage, knowledge creation, absorption and transfer theories (Nonaka 1994; Nonaka & Konno 1998), and knowledge stickiness (Szulanski 1995; 1996; 2000). In this context and central to the study, knowledge is theorised as ‘a fundamental resource’ (KBV) while equally so theorizing people as ‘organisational resources’ (RBV) and sources of that knowledge (McInerney & Koenig 2011; Grant 1997, 1996; Starke et al. 2003). It is for this reason that theorists call for absorptive capacity (Cohen & Levinthal 1990) and protective capacity (Andersén 2012) for retention and protection of these resources. Human resource loss (turnover) and knowledge loss have serious implications for all these theories. The literature provides a contrasting perspective on conceptual versus theoretical frameworks (Ngulube 2018; Kitchel & Ball 2014). Ngulube (2018:7) cautions that researchers need to avoid confusing theoretical frameworks with conceptual frameworks and their applications thereof in research projects. Kumasi, Charbonneau and Walster (2013:178) observe that a lack of understanding and explanation of the use of a theory or theories in empirical research may lead to a number of conceptual and practical mistakes. Such misunderstandings may result when researchers make mistakes such as theory dropping, theory diversification and positioning in the research process (Ngulube 2018; Kumasi et al. 2013). Theory dropping concerns the introduction of a theory or theories that are never mentioned again in the discussion, findings and conclusions (Ngulube 2018; Ngulube, Mathipa & Gumbo 2015). Furthermore, theory diversification happens when researchers introduce multiple theories without articulating unambiguously how such theories informed the design of the study (Ngulube et al. 2015). Research uses a theoretical framework when the research is supported by a single theory (Green 2014; Nieswiadomy 2012) and there is only one theory that guides the study. For the purposes of investigating the phenomenon of organisational knowledge, its loss and the role of HRM practices in the effective management of such knowledge, this researcher applied a conceptual framework.

According to Ngulube (2018:11), a conceptual framework should be used when there is no single theory that fits the concepts to be investigated or when more than one theory is used to guide the research project. The source signifies that a conceptual framework may only be used in the absence of a single theory that can provide a comprehensive answer to the research question. That was indeed the case with the current study because there is no single theory that guided the study. Hence, the study used pragmatism philosophy to explore the research phenomenon from multiple angles using various relevant theories or concepts to guide the researcher in getting answers to the research questions. This MMR study used a qualitative exploration process in the first strand to gather information about the research problem through interviews with HR managers, which was then used to inform the development of an instrument for testing qualitative research findings in the second quantitative phase of the study.

There was no single coherent theory to guide the study as the project was grounded in a number of theoretical perspectives. Suddaby (2015:2) notes that knowledge development cannot occur without a conceptual framework. At an empirical level, the study attempted to link HRM practices to various KM concepts and strategies in an effort to understand their roles and effects on organisational knowledge loss and management. However, at the conceptual level, the study reviewed literature (see Chapter Two) on organisational knowledge from a resource-based view and a knowledge-based view of the firm, the relationships between various HRM and KM concepts at the theoretical level by articulating various concepts that are relevant to the study (as illustrated by Figure 3 in Chapter Two).

Organisational knowledge is an asset that gives companies sustainable competitive advantage (Takeuchi 2013; Grant 1996), thus the loss of it negatively affects organisational survival (Phaladi 2011). Therefore, there is a need to clarify the scope of the research as follows: Organisational tacit knowledge loss, its creation, acquisition, transfer and retention fit into the discipline of knowledge management.

Organisational issues such as turnover, layoffs, aging workforce, and skills shortage fit into the HRM theoretical domain and were pertinent to this study. However, such issues have received much attention in the KM literature since they cause a loss of knowledge in firms – hence a need

for the integration of both in theory and in practice. The loss of tacit knowledge in an organisation is largely attributed to these issues (Dalkir 2020; Durst & Zieba 2020; Su et al. 2021; Durst et al. 2019; Massingham 2018; Sumbal et al. 2018; Urbancova & Linbartova 2011; Armstrong 2009; DeLong 2004; Stam 2009). Organisational practices such as recruitment, staff training and development, succession planning, retention and performance treads into the theoretical realm of HRM.

To summarise, this study is about the integration of two main theoretical streams, which are knowledge management and human resource management in managing organisational knowledge loss. Knowledge Board (2002) posits that knowledge management and human resources management initiatives are focused on harnessing available knowledge assets and to prevent knowledge from leaving an organisation.

### **1.11 Definition of key concepts**

The purpose of this subsection is to provide definitions of the key terms that are central to the study.

#### **Knowledge**

Theory of epistemology defines knowledge as a “justified true belief” (Nonaka 1994:15). Knowledge is the competence or wisdom to act (Sveiby 2001:345). Knowledge provides individuals with the capacity to make decisions, which either is founded on an understanding of context or is resultant from theory, or practice (Becerra-Fernandez & Sabherwal 2015). Human knowledge is often referred to as human capital in the knowledge management literature, is broadly divided into two kinds that is tacit and explicit knowledge. Explicit knowledge is that type of knowledge, which has been codified in numbers, pictures and text and distributed in the form of information, mathematical formulae, standards, handbooks and the like. According to Nonaka and Konno (1998: 43), the explicit knowledge can be readily disseminated between individuals, since it is formalised and systematic. Knowledge that is articulated in words and numbers only represents a small percent of the entire body of human knowledge: “We can know

more than we can tell". Polanyi (1958) captures the complexity of tacit knowledge in this declaration. The tacit knowledge has a personal and hard to define quality, which means that it is difficult to formalise and disseminate – it is knowledge that resides in an intuitive realm. Tacit knowledge is resultant from our individual lived experiences, it is subjective and difficult to capture. Therefore, tacit knowledge is frequently accumulated through shared, lived and interactive personal experiences. The loss of the organisational tacit knowledge is a phenomenon that is central to this study.

### **Knowledge assets**

Knowledge assets can be classified as explicit and tacit knowledge assets (Nonaka 2007). In the knowledge economy, such assets are viewed as the cornerstones and knowledge drivers of the superior organisational performance (MacMillan 2015; Peteraf 1993). Tacit knowledge assets are the focus of this study. Nonaka, Toyama and Konno (2000) see them as the foundation of knowledge creation process and argue that knowledge assets are indispensable firm-specific resources that create value for organisations. Boisot (1993:3) concurs these are stocks of knowledge from which products and services can be developed over a period. They are characterised as highly unstructured, deep smart knowledge and expertise residing in the heads of the firm-specific employees (MacMillan 2015). When these key firm-specific human resources leave, tacit knowledge assets leaves with them. Explicit knowledge assets are those assets that have been structured and codified knowledge for proper management and application such as policies, manuals, books, standards and other documented products. Therefore, explicit knowledge assets do not pose a serious risk to the organisations like the tacit knowledge assets do.

### **Knowledge loss**

According to Durst and Zieba (2018:8), knowledge loss is a state of affairs wherein an organisation loses a part or all of its critical knowledge as a result of the holder leaving. Knowledge loss is mainly associated with the withdrawal of human resources (employees) from companies because of various reasons such as resignations, retirements, deaths, downsizing and

job rotation (Sumbal et al. 2018; Massingham 2018). When employees depart, they leave with valuable organisational knowledge that causes its loss.

### **Knowledge management**

Gürlek (2020:19) refers to the application of a set of management tools aimed at creating valuable organisational knowledge. Hislop (2013:56) defines KM as

“an umbrella term which refers to any deliberate effort to manage knowledge of an organisation’s workforce, which can be achieved through a wide range of methods including directly, through the use of particular types of ICT, or more indirectly through the management of social processes, the structuring of organisations in particular ways or via the use of particular culture and people management practices”.

This definition captures both the techno-centric and socio-centric approach for the management of organisational knowledge. Becerra-Fernandez (2010:39) defines it as “doing what is needed to get the most out of knowledge resources”. Becerra-Fernandez argues that this definition can be applied at an individual level as well as organisational levels. Depending on the level, knowledge resources might be those resources that are relevant to the decisions, goals and strategies of an individual or an organisation.

“KM can be defined as performing the activities involved in discovering, capturing, sharing, and applying knowledge in terms of resources, documents, and people skills, so as to enhance, in a cost-effective fashion, the impact of knowledge on the unit’s goal achievement” Becerra-Fernandez (2010:327).

Knowledge management is defined by Al-Ali (2003:79) “as the stage at which the knowledge resources of an organization are deployed and reconfigured to create value, to form the platform for achieving the organization’s mission through action, innovation, or commercialization.” Above all, KM is the stage at which the organisation knows itself by knowing what it knows, where it recognises the value of tacit knowledge as a basis for decision making and enhance the real source of value creation. Though the difference in the definition is apparent, it becomes clear

that knowledge management is simply about providing a means to facilitate the management of organisational knowledge resources for the benefit and survival of the organisation.

### **Knowledge creation**

Becerra-Fernandez (2010:39) define knowledge creation as an activity that catalyses the innovation of knowledge. The central idea is that knowledge creation in organisations is accomplished through knowledge conversion: existing knowledge is ‘converted’ into new knowledge (Nonaka, 1994). According to Alvi and Tiwana (2002), as quoted in Desouza and Paquette (2011:103), knowledge creation refers to the organisational processes that develop new knowledge or replace existing knowledge in an organisation’s knowledge repository; it encompasses activities such as new product development, business process design, skill development, and other innovative activities.

### **Knowledge transfer**

Knowledge transfer is defined by Szulanski (1996:29) as the

“replication of an internal practice that is performed in a superior way in some part of the organization and is deemed superior to internal alternate practices and known alternatives outside the company, and where practice is taken to be the routine use of knowledge”.

According to the operational definition of KT as offered by Argote and Ingram (2000:151), knowledge transfer in organisations is the process through which one unit (for example, a group, a department or a division) is affected by the experience of another. There are many definitions of knowledge transfer offered in the KM literature, but it appears if there is consensus that it is a branch of the knowledge management discipline that deals with the transfer or sharing of knowledge within and across organisational units and members. In this study, the words ‘knowledge transfer’ and ‘knowledge sharing’ are used interchangeably to mean to the same thing, which simply is the process of sharing knowledge at all levels within the firm to enable superior performance and competitive advantage in pursuit of a knowledge-based strategy.



## **Knowledge retention**

According to Levy (2011), knowledge retention is a sub-discipline of knowledge management that deals with cases where expert knowledge workers leave organisations after long periods of service. DeLong (2004:23-24) states that knowledge retention consists of three activities namely, knowledge acquisition, storage and retrieval. *Knowledge acquisition* describes the practices, processes, and routines used to move knowledge into a state where it is kept available for future use. This means that one expert can teach another person or group how to perform a complex task, capture detailed problem-solving instructions in a database, or embed important company practices in an employee orientation programme. *Knowledge storage* represents the processes and facilities used to keep knowledge and information until it is needed. Storage entities include individuals, groups, cultures, work processes, routines, and systems such as a database. *Knowledge retrieval* includes behaviours, routines, and processes used to access and reuse information and knowledge in new situations such as searching an expert database, calling a colleague, remembering a past experience, brainstorming with a group about past experiences, or searching a document database. These activities have been used to characterise *organisational memory*, which is equated to *organisational knowledge loss* in this study.

## **Knowledge management practices**

Knowledge management practices encompass all strategies or practices aimed at ensuring knowledge creation, application, retrieval, sharing and retention take place in the organisations (Zaim et al. 2018). According to Donate and Pablo (2015: 362) such practices should focus on ensuring the integration and use of existing knowledge to execute organizational activities, making decisions and problem solving easier and more effective for the company. Knowledge management practices would include knowledge diagnostics, systems, tools, policies and processes to ensure effective management of organisational knowledge.

## **Knowledge management practitioners**

Knowledge Management South Africa (2020) defines knowledge management practitioners as professionals who are passionate about driving knowledge management discipline and strategies

in their companies. Knowledge management practitioner is professional somebody who is tasked with the responsibility of developing KM strategy, running of organisational operations pertaining to knowledge management, influencing change and managing staff involved in the management of organisational knowledge (Postolache 2019). Knowledge management roles would ordinarily include knowledge manager, knowledge management specialists, knowledge analysts, knowledge management champions, and other related roles tasked with the responsibility of executing knowledge management activities.

### **Knowledge-based strategy**

Knowledge-based strategy (KBS) is a knowledge-oriented, human and social tactic to strategy development (Nonaka & Takeuchi, 2018). Nonaka and Takeuchi (2018) asserts that KBS disagrees with other schools of thought in strategy because its strong focus is on knowledge as the driver of the strategic positioning in the market. According to this school of thought, strategy formulation and implementation is done through a subjective and interactive process driven by firm-specific human resources and knowledge assets. Therefore, securing organisational tacit knowledge assets is key in the strategy orientation for those companies following knowledge-based strategy school of thought.

### **Knowledge-based theory of the firm**

Knowledge-based theory (KBT) differs from resource-based theory of the firm in the sense that its strong focus is on organisational knowledge resources or assets. Like knowledge-based strategy discussed in the previous section, KBT places knowledge resources at the centre of business strategy (Takeuchi 2013). Knowledge-based theory of the firm considers knowledge assets as the most fundamental resources of a company, which leads to superior business performance and sustainability (Gürlek 2020a; Grant 1996; Nonaka & Takeuchi 1995). KBV theorists argue that because knowledge-based resources carry the character of being valuable, rare, and inimitable and non-sustainable, they are therefore main determinants of sustained competitive and superior business performance (Durst & Zieba 2020). In general, empirical

studies and theorists advancing the knowledge-based strategy have strongly supported the knowledge-based view of the firm.

### **Human resource management**

Dessler (2015:36) refers to human resource management as “the process of acquiring, training, appraising, and compensating employees, and of attending to their labour relations, health and safety, and fairness concerns”. HRM is a distinctive approach to employment management that seeks to achieve competitive advantage through deployment of a highly committed and capable workforce using an array of cultural, structural and personnel techniques (Storey 2007:7). Intan-Soraya and Chew (2010:259) posit that the field of human resource management is specifically concerned with the management of people in organisations. Jones, George and Hill (2000) define HRM as activities performed by managers to attract, retain, and manage the performance of employees so that they contribute to achieving organisational goals. A key component of this approach to HRM is the emphasis on developing staffing systems that provide the necessary talent for effective knowledge management (Lengnick-Hall & Andrade 2008). In organisational settings, HRM is normally responsible for the recruitment, development and retention of employees. Moreover, it provides critical resources for knowledge and for KM to take place in the organisation.

### **Human resource management practices**

Human resource management practices are practices that are used by companies to manage their human resources. The practices include, but are not limited to, the facilitation and development of competencies that are company-specific and produce complex social capital and generate knowledge to sustain competitive advantage (Gope et al. 2018; Singh & Jain 2014). Tan and Nasurdin (2011:157) define HRM practices as practices that relate to specific practices, formal policies, and philosophies that are designed to attract, develop, motivate and retain employees who ensure the effective functioning and survival of the organisation. According to Fong et al. (2011:706), these are practices that enable the shaping of employees’ skills, abilities, values, beliefs, attitudes and behaviours through hiring, socializing and developing a firm’s pool of human capital. Such practices play an important role in harnessing core knowledge, skills and

competencies and enhance performance of the organisation. Knowledge-driven HRM practices are those practices that are deployed to enhance knowledge management processes and knowledge-related outcomes (Minbeava 2005:126). These practices are explored in detail in Chapter Two.

### **Resource-based theory of the firm**

The resource-based theory (RBT) places firm-specific resources (tangible and intangible) at the centre of organisational strategy. Resource-based theory argues that firms possess resources that serve as sources for them to achieve competitive advantage and these resources lead to superior long-term business performance (Barney 1991; Wernerfelt 1984). In other words, the protection of firm-specific resources will ensure sustainability. The theory is rooted in the belief that resources that are valuable, rare, inimitable and non-substitutable (VRIN) can lead to the creation of a sustained competitive advantage in the market (Barney et al. 2001). The words “resource-based theory” and “resource-based view” (RBV) are used interchangeably to convey the same meaning in the thesis. RBV theorists firmly believe that companies can sustain advantage over longer periods to an extent that their businesses are able to protect against resource imitation, transfer, or substitution by market competitors (Talaja 2012).

### **State-owned enterprises (SOEs)**

Wendy Ovens and Associates (2013:4) define SOEs as independent companies partially or wholly owned by government. According to Sultan Balbuena (2014:9), a state-owned enterprise is a company established according to statutory laws of the country; they can be either wholly or partially owned, with a government having a significance level of shareholding and ownership. In other words, the state as a major investor in such state-owned companies has full control. In South Africa, SOEs are viewed as key drivers of growth and development in the economy (Fourie 2014:30). Columbia Electronic Encyclopedia (2011:1) defines them as utilities that are most commonly involved in the business of supplying consumers with water, electricity, telephones, natural gas and other necessary services. The public utility industry is affected by a public interest and therefore they are subject to a degree of government regulation from which other businesses are exempted (Simpson 2014; Tsheola et al. 2013; PWC 2015). Simply put,

they are highly-regulated public business entities. State-owned enterprises and parastatals in South Africa are highly regulated through various pieces of legislation and they have been established to provide a service in terms of the Acts passed by parliament.

### **1.12 Research methodology overview**

The study used nine state-owned companies in the qualitative phase and three in the quantitative phase of the project. Philosophically, the study is rooted in the pragmatism research paradigm. Sarantakos (2013:30) argues that a philosophical paradigm dictates the type of research method and technique at the disposal of the researchers as well as the motives and objectives of the research. The study is a mixed method research project, using exploratory sequential design. Mixed methods research (MMR) was considered more appropriate and efficient than qualitative and quantitative research approaches to address the research problem and objectives of the study. According to Ngulube (2019:96), MMR is more efficient because it emphasises the incorporation of both meanings and quantities. The strength of using this approach is that it is best suited for investigating complex research problems (Creswell & Plano Clark 2018; Creswell & Creswell 2018; Ngulube 2015a; Creswell 2015; Denzin 2012; Bryman 2012). The phenomenon of knowledge loss in organisations is a complex issue, which cannot be investigated using only one research method. MMR was best suited to investigate the phenomenon. Pragmatism is the adopted research philosophy guiding the study and the application of a mixed method research approach (Creswell & Plano Clark 2018). The study used an exploratory sequential MMR design whereby the qualitative phase was used to inform the development of the survey instrument in the second phase of the study (Creswell & Plano Clark 2018; Plano Clark & Ivankova 2016).

In the qualitative phase, the interviews were conducted with purposively selected human resource managers in the nine selected state-owned companies, while in the second quantitative phase, a survey questionnaire was distributed to 585 employees and knowledge management practitioners in the state-owned companies. The targeted population of 585 is made up of 10 percent of the entire population. Neuman (2014) and Grinnell (1997) asserts that a sample size of

10% of the population is sufficient in most quantitative cases. A probability sampling method was used for the selection of the respondents in the quantitative research phase.

For qualitative data analysis, computer-aided qualitative data analysis software (CAQDAS) called Atlas.ti was used in the organisation and management of the qualitative research data. A statistical analysis software program, called SAS, was used for the analysis of the quantitative data collected through the survey instrument. In compliance with the University of South Africa's policy on research ethics (UNISA 2007), the research participants and participating state-owned companies were given assurance of their anonymity and the confidentiality of the information provided in the study.

All methodological, research design, procedural issues and ethical considerations are discussed in detail in Chapter Three. The next section describes the scope and limitations of the study.

### **1.13 Scope and limitations of the study**

State-owned enterprises are central to the economic activities and development of the country. From a South African context, state-owned enterprises are critical drivers of a developmental state vision of the government (National Planning Commission 2013). The study was limited to the loss and management of organisational tacit knowledge, and the role of human resource management practices in facilitating the knowledge management capability (KMC) for the reduction of knowledge loss in South African state-owned companies. The notion of lost knowledge within organisations is broad and lost knowledge is caused by many different variables, for example mid-career turnover, retirement, death, resignation and staff movement. However, the scope of this study was also limited to knowledge management practices and the role of human resource management in so far as knowledge loss, knowledge transfer and retention in state-owned entities was concerned.

From a knowledge management perspective, this study looked at the HRM and KM practices within public utilities that seemed to facilitate and support knowledge creation, transfer and retention (KM initiatives and behaviours), especially those practices that support knowledge transfer of knowledge workers such as engineers, scientists, analysts, technicians and specialists. In

addition, the data collection was restricted to HR managers and KM practitioners responsible for human resources and knowledge management including employees in the state-owned enterprises identified. In terms of the scope of the study, this study focused on (a) issues of organisational knowledge loss caused by threats of voluntary and involuntary turnovers, (b) knowledge-driven HRM practices, (c) knowledge-driven organisational culture, (d) knowledge-driven organisation structures, leadership, (e) organisational barriers, and (f) knowledge management processes and practices involved in the management and reduction of knowledge loss phenomenon in the public utility industry of South Africa. The layout of the study is discussed in the next section.

#### **1.14 Thesis layout**

The thesis is organised and divided into six chapters. Chapter One covers an introduction, provides context and background to the problem statement, aims and objectives, research design and methodology used, and justification of the study. Key concepts that are central and specific to the study are defined to avoid potential misconceptions in the study.

Chapter Two contains a literature review on organisational knowledge and the role of human resource management practices or systems in knowledge management and the reduction of knowledge loss. It does so by providing a conceptual analysis of relevant concepts or multiple theories (conceptual framework) relevant to the study. In this chapter, an attempt is made to understand organisational knowledge loss and its implications in the context of the knowledge economy and the knowledge-based theory of the firm. Literature on the theory of knowledge creation, acquisition, transfer and retention is reviewed from a knowledge management perspective. Chapter Two also addressed the knowledge-based theory of the firm, which is central to the issue under investigation and also to the knowledge economy. Furthermore, Chapter Two reviews existing literature, which helps to clarify the nature and role of human resource management in the knowledge economy and role of HR practices in knowledge management processes.

Chapter Three describes the research methodology relevant to this study. The chapter covers relevant research paradigms and approaches, various mixed methods research designs and research design of the study including research methods for data collection and analysis. The chapter also presents an evaluation of the research methods used in the study.

Chapter Four presents the results of the study in terms of the status of organisational knowledge loss management and related human resource management practice in selected state-owned enterprises in South Africa. The chapter includes the presentation of the results from both the qualitative and quantitative phases of the mixed methods study. The chapter also covers research results about the research objectives and questions of the study.

Chapter Five provides an interpretation and synthesis of the findings. Theoretical reflections on the research results in relation to theory and existing body of knowledge was presented as part of the interpretation and synthesis of the findings.

Chapter Six contains a summary, conclusions and recommendation arising from the research. It also points out areas for further research. An integrated knowledge and human resource management framework is presented. The chapter reflects on the implications of the findings for practice and the future strategic direction of the public utilities, as well as what one can learn from the case study in terms of the theory of knowledge management and the strategic role of HR in the knowledge management processes.

### **1.15 Summary of the chapter**

Chapter One contains the introduction and background, the problem statement, aims and objectives, research design and methodology used and justification of the study. Key drivers contributing to organisational tacit knowledge loss were highlighted. Employee turnover, whether voluntary or involuntary, erode organisational memory, which threatens organisational growth strategies and sustainable competitive advantage of companies across market sectors around the globe (Dalkir 2020; Durst et al. 2019; Su et al. 2021; Sumbal et al. 2018; Eckardt et al. 2014; Strack et al. 2008; DeLong 2004).



This chapter stresses the fact that HRM practices or systems are ineffective and play a lesser role in supporting organisational knowledge management efforts in modern economies and companies. At the theoretical level, the chapter points out that this study is grounded in various concepts or theories of the firm and of competitive advantage such as resource-based view, knowledge-based view, sustainable competitive advantage, knowledge creation and knowledge transfer theories. The study does so by attempting to understand the relationship between HRM and KM in facilitating the management and reduction of knowledge loss in state-owned enterprises. Key terms were defined, followed by a description of the research methodology underpinning the study.

The next chapter provides a conceptual framework of the study as well as a review of the literature on the integration of HRM practices and knowledge management to enable the reduction of organisational knowledge loss. The core of the chapter is based on the fact that human resources (through RBV lenses) and knowledge resources (through KBV lenses) are knowledge assets that provide organisations with sources of sustained competitive advantage and superior organisational performance.

## **CHAPTER TWO**

# **CONCEPTUAL FRAMEWORK AND A LITERATURE REVIEW ON THE INTEGRATION OF HUMAN RESOURCE MANAGEMENT PRACTICES INTO KNOWLEDGE MANAGEMENT**

### **2.1 Introduction**

The previous chapter sets the scene by providing the contextual background, problem statement, research objectives, significance and justification of the study. It also contains a description of the research approach as well as definitions of key concepts. This chapter contains a literature review of the fundamental theories and empirical studies underpinning the impact of organisational knowledge loss on the performance, knowledge creation, transfer, and application and retention capabilities of firms. Human resources and knowledge resources provide firms with sources of sustained competitive advantage (Su et al. 2021; Dalkir 2020). Thus, employee turnover and knowledge loss threatens the sustainability of companies operating in a knowledge-based competition and economy. At the organisational level, loss of human resources and knowledge loss are intertwined. At the theoretical level, the study is grounded in various theories underpinning the nature and character of knowledge-based strategy of the firm. The implications of knowledge loss for firms pursuing knowledge-based strategic thinking in the contemporary economy is brought into the equation. From the knowledge-based view of the firm, knowledge is considered a critical resource for companies to sustain their strategic competitive advantage (Takeuchi 2013; Omerzel & Gulev 2011; Nonaka, Toyama & Nagata 2000; Grant 1996). Therefore, loss of such a valued organisational resource threatens the survival capabilities of these firms.

This chapter attempts to unpack the understanding and the importance of knowledge for firms operating in the knowledge economy. For this reason, the consideration is given to theories based on resources such as the resource-based theory and the knowledge-based theory. The literature review so far suggests that human resources are at the core of the resource-based view of the firm (Buta 2015; Wright, Dunford & Snell 2001), whereas the importance of securing knowledge

resources lies in the knowledge-based view of the firm (Krogh & Wallin 2011; Curado 2006; Curado & Bontis 2006). Bordeianu and Buta (2015), DeLong (2004) and Viaman and Vance (2008) are spot-on when stressing that human resource management has failed to take its central position in facilitating knowledge management in organisations. Nevertheless, HRM is lamented for failing to play its role in the management of organisational capability resources. Similarly, Hislop (2003) is spot-on when emphasising the relationship between HRM and KM in mitigating the challenges associated with organisational knowledge. State-owned enterprises, as knowledge-intensive companies, need to manage their knowledge resources to maintain a competitive advantage in their market space.

The next section describes the purpose of a literature review in a research process.

## **2.2 The purpose of a literature review**

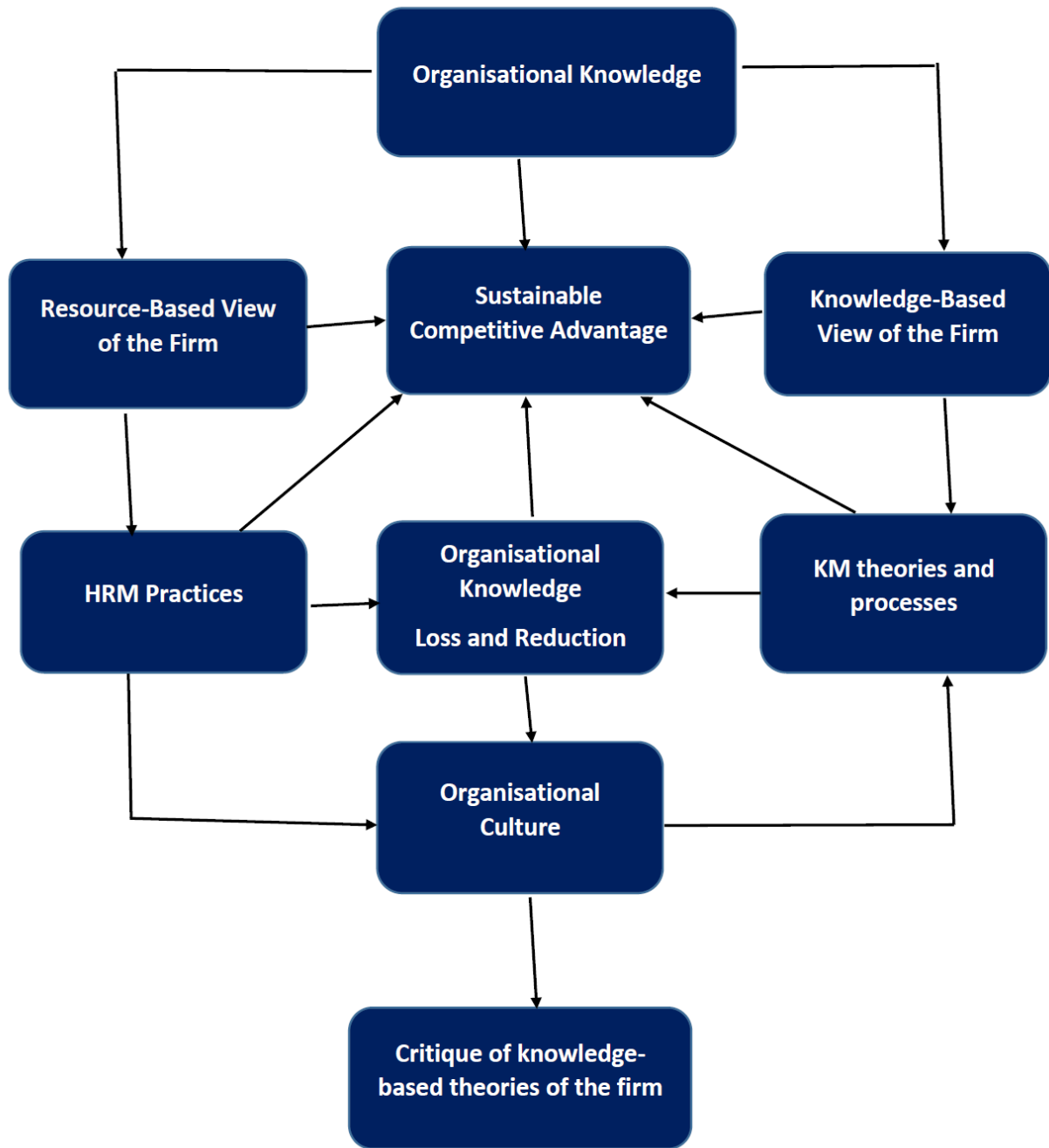
A literature review is a critical component of the scientific research process. Creswell (2015:26) points out that reviewing the literature assist the researcher to frame his or her research within a particular theoretical orientation. It is therefore important that the researcher ground his research problem or study in a relevant body of knowledge. Similarly, it provides an account of what has already been researched and published on the topic by other scholars in the field. According to Burton, Brundrett and Jones (2008:30), a literature review serves a key function in one's research, such as establishing whether the topic has already been explored in detail or whether there is scantiness about the research problem or topic, thereby assisting the researcher to make a decision whether to pursue or not to pursue the study. Furthermore, they argue that a review of the literature helps researchers in gaining initial sources of information for further exploration and interrogation. Ngoepe (2012:41) asserts that it introduces the researcher to the debates and different perspectives surrounding the topic. The purpose of a literature review is to support a researcher's arguments and to synthesise and present a good line of argument (Ngoepe 2012; Burton et al. 2008). In the process of reviewing the literature, gaps in the theory can be established and pursued. According to Babbie and Mouton (2001:103), it helps establish answers for the researchers' question about the following:

- i. What have other scholars researched on the topic?
- ii. What key theories address the topic?
- iii. What are key theorists and proponents of the topic?
- iv. What are the gaps on the topic?
- v. What research designs are used?
- vi. What are the research methods?

Of critical importance is how to do a literature review. Creswell (2012) outlines the following key steps that guides researchers in the literature review process:

- i. Identify key terms to use.
- ii. Locate literature about the topic.
- iii. Critically evaluate and select the literature for review.
- iv. Organise the selected literature by taking notes.
- v. Write a literature review by summarizing what has been reviewed and by including it in the research report.

For the purpose of this study, a review of relevant literature is provided about key theories underpinning the management of organisational knowledge from both human resource management and knowledge management perspectives as illustrated by a literature map shown in Figure 3 below. This literature map covers key theories and constructs that are important for the study.



**Figure 3: Map of the literature review used in the study**

The next section briefly describes the role of state-owned enterprises in the knowledge economy.

### **2.3 State-owned enterprises in the knowledge economy**

State-owned enterprises are considered knowledge-intensive firms (KIFs). Roome (2012:12) posits that many KIFs function in stretched competitive labour markets in which the demand for human capital (skills and experience) is higher than the demand for supplies. SOEs are pillars of economic development and innovation processes in both developed and developing countries (Benassi & Landoni 2017:3). SOEs are playing a critical role in the knowledge economy to such an extent that they should be viewed as knowledge creation and distribution companies in their own right. Benassi and Landoni (2017) perceive the role of state-owned enterprises as that of knowledge-explorer agents in the knowledge economy. According to Liophanich (2014:159), these are knowledge-oriented firms whose sustainable competitive advantage are reliant on knowledge, skills and abilities of their employees. This suggests that in this type of organisations a knowledge management strategy should be deployed as a mechanism to manage and transfer knowledge from one employee to another. State-owned enterprises should not be managed as if they exist in the times of the industrial revolution. According to PWC (2015:6), they have become fundamental tools for both developing and developed countries to position themselves for the future in the global economy, given the tough competition and a war for talent and resources. Roome (2012:17) posits that across the world, SOEs have played a critical role in shaping and positioning countries towards a knowledge economy. As such, they have become drivers of economic development and have also become influential forces regionally, nationally and internationally.

In many countries, SOEs have propelled the growth of other technology-intensive and knowledge-intensive industries. However, they do not escape business pressures such as staff turnover, knowledge loss, governance issues, poor financial management and general management issues (Wendy Ovens and Associates 2013; Fourie 2014; Phaladi 2011). Therefore, knowledge management and human capital management should become some of key strategic implementations of SOEs to drive economic development in their respective countries (Susanty & Salwa 2017). For some countries, such as Russia, the development of the knowledge economy is propelled through the better management of human capital and knowledge production in state-owned companies characterised by key high-technology innovation. According to Vlaskov and

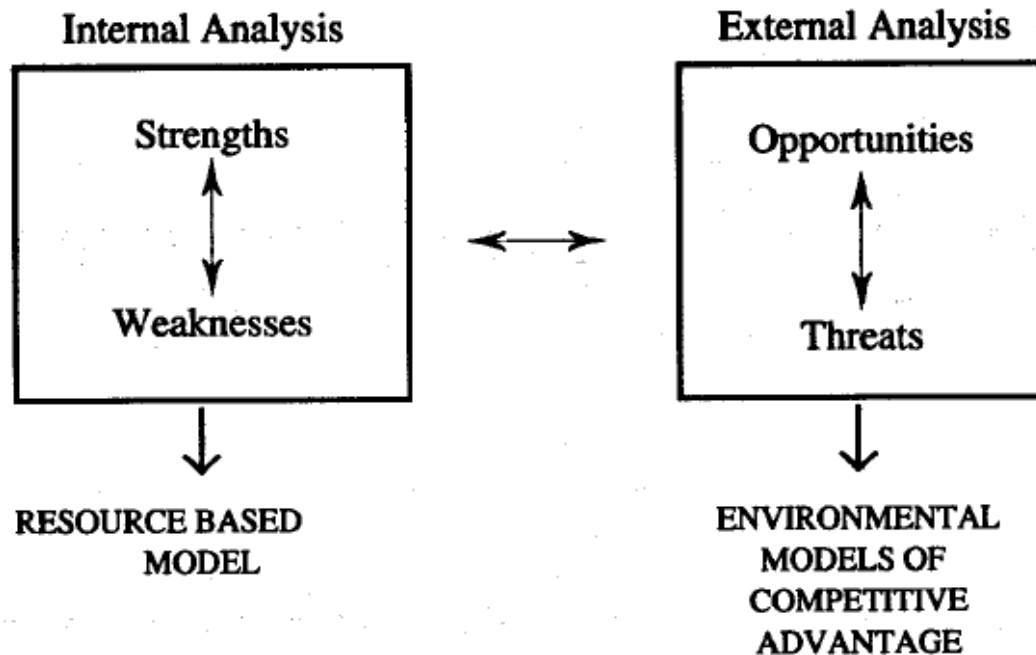
Panikarova (2015:475), the recognition of knowledge for the success of state-owned companies enables these firms to manage their high-value knowledge efficiently.

How SOEs manage their knowledge resources as KIFs leads us to the theory behind a knowledge-based view of the company (see Section 2.4). Section 2.4 also provides the rationale for reviewing relevant literature for the study. It also provides a review of relevant theories on organisational knowledge.

## **2.4 Review of relevant theories on organisational knowledge**

There are a couple of related theories in the literature underpinning the KBV and theories of competitive advantage, which are central to this study. Resource-based theory, sustainable competitive advantage (SCA), organisational knowledge creation theory (KCT), and knowledge transfer theory (KTT) are some of important theories relevant to the study. These theories of the firm provide guidelines for strategy formulation to companies in the knowledge economy.

The KBV theory of the firm places knowledge assets at the centre of the organisational strategy. Moreover, the KBV does not exist in a vacuum. According to authors such as Grant (1996), Wang (2014), Spender (1996), Turvani (2001), Kathleen, Eisenhardt and Santos (2002), the theory emerged in the context of the resource-based view (RBV) of the firm. The RBV stands in contrast to the market-based view (MBV) theory of the firm, which is outside-looking and focuses on the market positioning of the firm, as opposed to knowledge-based theories of the firm. Figure 4 below is based on the seminal work done by Barney (1991) to reflect the focus of the resource-based view as inside looking model as opposed to market-based view.



**Figure 4: Resourced-based view versus market-based review (Source: Barney 1991:100)**

The MBV of the strategy focuses its strategic process attention to industry factors and external market positioning as the primary determinants of the firm's competitive advantage and its superior performance (Porter 1980, 1985, 1996; Hoskisson 1999). Therefore, although external market orientation is important for firms in the knowledge-based economy; it is not a central and relevant theory to this study. Loss of organisational knowledge affects the firm's strategy and performance, largely because it has been argued that knowledge, expertise, knowledge assets and competencies are drivers of a sustained competitive advantage in the knowledge economy (Wang 2014; Hamel & Prahalad 1994). In other words, it threatens firms from maintaining their competitive advantage. From an organisational strategy positioning approach, both RBV and KBV theories are inward-looking giving adequate consideration to the characteristics of organisational resources and knowledge capabilities. RBV, KBV, KCT, KTT and KRT are among some of the theories of the firm or theories of competitive advantage in the literature of strategic management that are deemed relevant and central to the study of organisational knowledge loss from both HRM and KM perspectives. Similarly, these theories view firms as knowledge generation systems, and/or knowledge transfer systems and/or reservoirs of knowledge. This study takes the view that SOEs are resource-based organisations (OECD



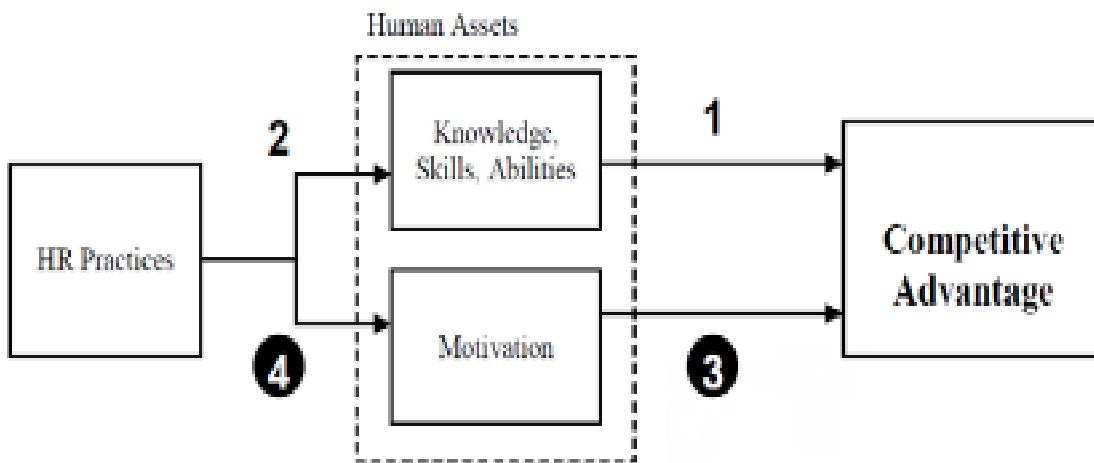
2015:190) and knowledge-based organisations in their own right. Therefore, the loss of organisational knowledge assets or knowledge spillovers impacts negatively on their SCA. SCA refers to the firm's sustained superior performance over time that competitors find difficult to replicate. The next section provides a theoretical orientation of human resources in the context of the resource-based view of the firm.

#### **2.4.1 Human resources in the context of the resource-based view of the firm**

Knowledge workers, as a vital internal resource of a firm, are a major source of SCA and attrition of this type of workers should be a cause for concern for firms whose work is knowledge-dependent and knowledge-intensive. According to the resource-based view of the firm, SCA is achieved when a firm has human resources that cannot be copied or substituted by its competitors in the market industry (Buta 2015:156). Sutherland and Jordan (2004:55) posit that the attrition of knowledge workers is not much appreciated in organisations. What organisations fail to appreciate, is the fact that when knowledge workers leave an organisation, knowledge leaves with them (Lin et al. 2016; Daghfous et al. 2013; Phaladi 2011; DeLong 2004). Knowledge workers remain sources of organisational knowledge capital. According to resource-based view of the firm organisational human and knowledge resources should meet Wernerfelt (1984) proposed framework criterion of being valuable, rare, inimitable and non-substitutable (VRIN). The RBV, especially its VRIN framework, has influenced many disciplines; HRM is one such discipline where human resources can be considered as a source of competitive advantage and a source of a firm's performance. According to several commentators, human resources and HRM practices that are valuable, rare, imitable and non-substitutable can provide firms with a SCA (Barney et al. 2001; Wright et al. 1994; 2001; Lado & Wilson 1994).

According to Wright et al. (2001:627), HRM's emphasis on people as important resources of the firm's performance, contributed to convergence of the resource-based strategy of the firm and human resource management issues. This line of thinking asserts that the RBV is contributing to the field of SHRM by effectively putting people at the centre of the organisational strategy. They infer that Barney's criteria for sources of SCA can also be applied to human resources in an

organisation. However, such thinking ignores what lies at the centre of the organisational knowledge-based strategy, which is knowledge whose sources of origin is the people employed in the firm. The KBV and the related knowledge-creating view of the firm are based on the view that a human is a dynamic being capable of creating and using knowledge to give a firm a competitive advantage. This implies that human resources management is a necessary platform or condition from which organisational knowledge can be better managed by firms. HRM practices such as recruitment, selection, training development, compensation and performance management are playing a critical role in shaping and motivating employees in the organisation (Hislop 2013; Wright et al. 2001; Barney et al. 2001). Pe'er (2016:1) argues that HRM practices aimed at creating high levels of employee motivation and engagement, can serve as a source of SCA (see Figure 5 below). The figure demonstrates that HRM practices play a critical role in sourcing the required knowledge, skills and abilities and building up a motivation for the workers, which lead to the achievement of organisational goals or sustainable competitive advantage. Equally, if competitors can copy such practices, their VRIN quality is compromised, thus making them substitutable.



**Figure 5: Human resources and competitive advantage**

(Source: Pe'er 2016:2)

Pe'er's framework demonstrates how knowledge-centric HRM practices can be sources of competitive advantage that is why such practices can have a meaningful contribution for

effective knowledge management processes and strategies. From the resource-based perspective, there is a relationship between HRM practices and sustainable competitive advantage. The positive impact of such HR practices on the firm's sustainable competitive advantage is dependent on whether such practices are of value, rare, imitable and non-substitutable. Wright et al. (2001:715) postulate that SHRM from a RBV perspective has missed much of the articulation of organisational knowledge, though it provides an important platform for highlighting the significance of employees as sources of a SCA.

The next section attempts to provide a discourse on the genesis and nature of the resource-based view of the firm.

#### **2.4.2 The genesis and nature of resource-based view of the firm**

State-owned enterprises are resource-intensive in nature, thus they rely on both tangible and intangible resources to drive economic growth and developmental agendas set out by their governments. It is important to point out from the onset that the resource-based view theory of the firm focuses on the firm's internal environment, especially on its resources and capabilities as the basis of its strategizing process (Barney 1991:101). The literature reviewed point out that the resource-based theory became one of the dominant strategic paradigms in the field of strategic management in the late 1980s in response to Porter's market-based positioning theory of the firm (Porter 1980, 1985, 1996) that was developed in the 1980s (Storchevoi 2015; Theriou, Aggelidis & Theriou 2009; Wang 2014; Porter 1980; Wernerfelt 19984). The focus of Porter's MBV of the firm was more on market and industry positioning, hence, it is called a theory of market poisoning largely because companies needed to position their strategic thinking in the external market industry domain (Storchevoi 2015:4).

A resource perspective of strategy is different from a positioning perspective because the focus is on the internal resources of a firm. The RBV of the firm is a school of thought that analyses a company's strengths and weaknesses in terms of its internal unique resources, which can be physical or human resources (Peteraf 2003; Barney 1991). Such resources can be tangible or intangible, which are used to build a firm's competitive advantage (Curado & Bontis 2006).

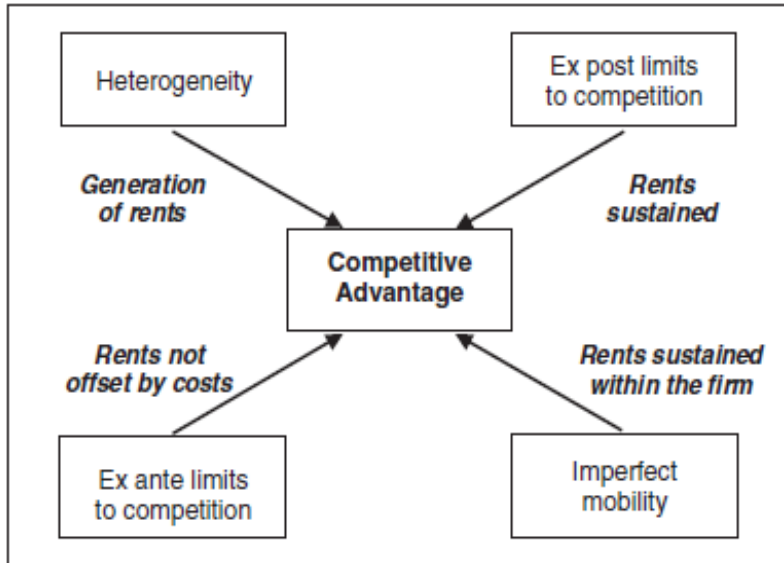
From the literature reviewed, the RBT views firms as a collection of resources that are required to produce products and services (Wernerfelt 1984:171). This idea of looking at firms as a set of resources can be traced back to the seminal work of Penrose (1959). Penrose (1959), Wernerfelt (1984), Rumelt (1984) and Barney (1991) were some of the first group of researchers to advance the RBV as the theory of the firm in direct response to the MBV theory of competitive advantage. In his 1984 article, Wernerfelt (1984:171) argues that for any company, resources and products are two sides of the same coin because products require the services of several resources and most of these resources can be used in several products. In his seminal work *A Resource-Based View of the Firm*, Wernerfelt (1984) appears to be the first proponent of the resource-based theory by giving it its name.

According to the RBT, all firms are heterogeneous in terms of their resources; therefore, the nature of their strategizing has to begin with the firm's distinct and unique specific resources (Storchevoi 2015:6). In other words, building a resource profile of a firm forms the basis of the organisational strategy in resource-intensive organisations. Once you know the resource profile of your company in terms of its strengths and weaknesses, it is possible to find the best product-market activities. Wernerfelt (1984:173) is spot-on in his or her assertion that a resource position of the firm can serve as a barrier, and what an organisation needs is to create a situation where its own resource position – either directly or indirectly – makes it hard for other companies to compete.

The basis of the RBT is that successful companies will derive their future competitiveness based on the development of their unique resources and capabilities, which can either be tangible or intangible (Teece, Pinsno & Shuen 1997; Rumelt 1984). Concisely, firm-level unique resources and capabilities dictate their strategy. In other words, the emphasis is placed on the development of the firm's resources to compete in the environment (Wang 2014:35). This theory of the firm posits that a firm's sustained competitive advantage and superior performance stems from its internal resources, which are unique and hard-to-imitate knowledge assets (Theriou et al. 2009; Barney 1991; Peteraf 1993, Wernerfelt 1984). In other words, this kind strategic thinking suggests that competitive advantage and superior performance are the result of firm-specific resources and capabilities built over the years. Such resources need to be superior to allow for the creation of

value and rents (Barney 1991). Peteraf (1993:186) sees organisational resources as the cornerstones of sustained competitive advantage. Therefore, loss of organisational knowledge, because of attrition of human resources as key firm resources, negatively affect the very same foundation from which sustained competitive advantage is built on. Peteraf (1993:180) outlines four conditions underlying sustained competitive advantage, namely:

- i. **Heterogeneity of resources.** Ziesemer (2013: 197) argues that heterogeneity refers to the rents, which are only possible if the firm has superior resources. Thus, those superior resources must be limited. The condition grants firms access to and control over superior resources, which are not available and accessible by other competing firms. In other words, if firms with diverse resources are at the advantageous position to use them to extract monopoly rents, they will earn more rents than those with fewer resources.
- ii. **Ex post limits to competition.** This is a second condition for sustained competitive advantage because it emphasises the fact that there should be barriers to other competitors competing for those superior resources. The proponents of the resource-based model of the firm, discuss this terminology as either imperfectly imitable or non-substitutable resources (Barney 1991; Foss & Knudsen 2003; Storchevoi 2015). What this condition does is that firms with resources that are imperfectly imitable will sustain their competitive advantage over their competitors.
- iii. **Ex ante limits to competition.** This necessary condition for sustained competitive advantage suggests that a favourable resource must be attained before the competition starts. In other words, prior to a firm establishing control over its set of resources, there should be a limited competition for those resources.
- iv. **Imperfect resource mobility.** This is a necessary condition for SCA, which maintains that resources that are non-tradable and non-transferable will earn the rents. Storchevoi (2015:198) points out that the more idiosyncratic a resource is, the more it is bound to the firm and becomes harder for other competing firms to copy such a resource. This is in line with Barney's thinking (1991) of imperfectly imitable resources as a source of competitive advantage.

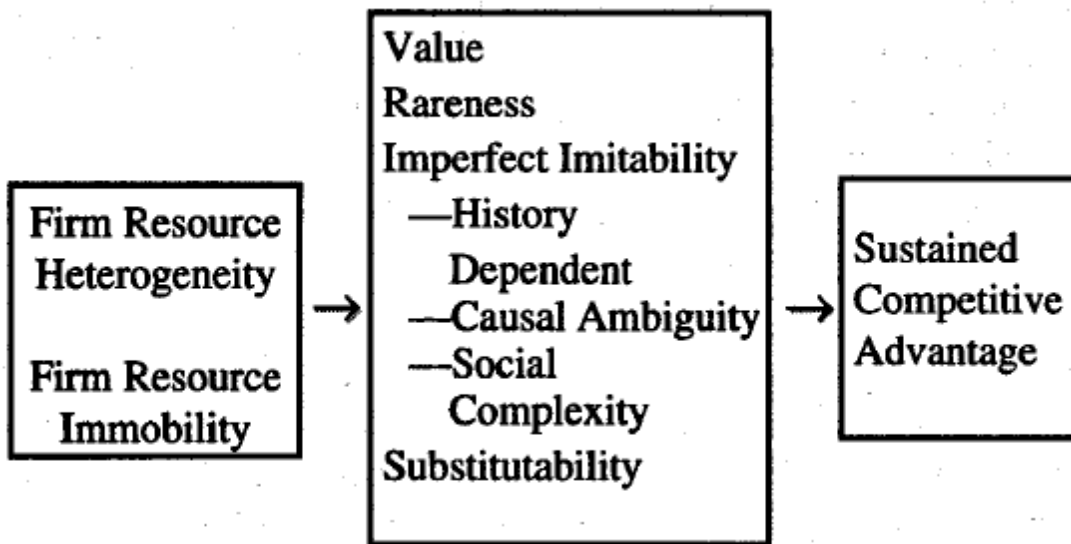


**Figure 6: Peteraf's cornerstones of competitive advantage**

(Source: Peteraf 1993:186)

Firms are by nature created and positioned to maintain sustainable competitive advantage over the competitors in their market industry. Barney (2001, 1991) and Barney et al. (2001) emphasise the fact that such resources and capabilities must be costly to copy by competitors operating in the same market space. Furthermore, they are considered sources of sustainable competitive advantage and superior firm performance. It is argued that firm-internal resources and capabilities should possess certain unique qualities or characteristics. According to Barney (1991:99), such resources and capabilities of the firm must be valuable, rare, imperfectly imitable and non-substitutable (VRIN). In a nutshell, only rare and valuable resources that cannot be reproduced by competitors can be used as drivers to gain and maintain sustainable competitive advantage (Storchevoi 2015; Wright et al. 2001; Barney 1991). Therefore, it must be made difficult for competitors to have access to the same resources. Ziesemer (2013) and Peteraf (1993) are in agreement with Barney (1991) and of the firm view that if every company has access to the same resources, sustainable competitive advantage will become impossible to maintain. The emphasis of the RBV is on the firm's internal resources and these resources serve as sources of SCA, as illustrated by Barney's VRIN framework (see Figure 7 below). Barney (1991)'s model as illustrated in the figure 7 emphasise that firm-specific resources must meet the

criterion of being valuable, rare, imperfectly imitable and non-substitutability in order to lead to sustainable competitive advantage. Therefore, the firm's internal environment plays a critical role in nurturing such resources. This line of thinking aligns itself with Krogh and Wallin's (2011:263) posture that asserts that companies pursuing a KBS need to put considerable effort into the micro-foundations underlying their organisational efforts in knowledge management activities.



**Figure 7: Source of sustained competitive advantage**

(Source: Barney 1991:112)

It must be emphasised that the RBV treats a firm's resources as generic tangible and intangible resources. The next theory of the firm focuses on intangible resources as sources of SCA, and specifically on organisational knowledge as intangible resource.

### **2.4.3 Theoretical perspectives on organisational knowledge**

The knowledge-based view puts knowledge at the centre of the organisational strategy. In order to avoid possible confusion, especially about the nature and theoretical positions underpinning the knowledge-based model to sustainable competitive advantage, the theoretical reflection underpinning the definition of knowledge is provided in this section. Grant (1996; 1997) and

Spender and Grant (1996) are some of the first authors in the strategic management literature to conceptualise the concept of the knowledge-based view of the firm, thus putting knowledge at the centre of the firm's strategy as the main determinant of sustained competitive advantage.

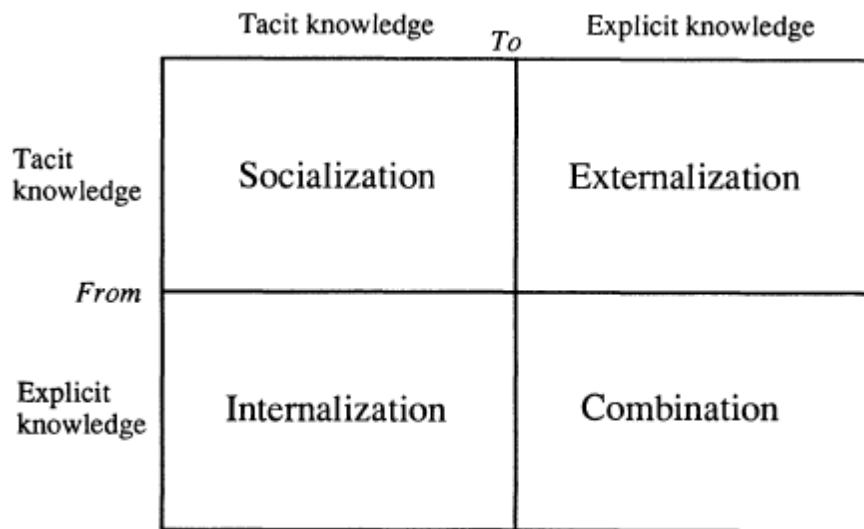
From the literature reviewed thus far, there seems to be no common consensus on the nature and theory of knowledge. According to Kathleen, Eisenhardt and Santos (2002:140), researchers in the field of strategic management use a concept of knowledge, which is grounded in the Western epistemology. From the Western epistemology, knowledge is perceived as "the set of justified true beliefs" (Nonaka & Takeuchi 1995; Davenport & Prusak 1998), which focuses on the explicit dimension of knowledge. The explication process of knowledge is central to the epistemology. This epistemology is lamented for missing the personal dimension of knowledge in the equation because knowledge is highly personal and considered to be socially constructed in organisations (Nonaka 1994, 1997).

There are many differing opinions on what constitutes knowledge and what constitutes organisational knowledge. This demonstrates the complexity of the knowledge phenomenon. Knowledge in firms takes many different forms. From the literature reviewed on organisational knowledge, it appears that authors attempt to define knowledge by unpacking dimensions contributing to the nature of knowledge. For example, Nonaka (1994) approaches the knowledge phenomenon as having two dimensions to it, namely tacit and explicit knowledge. Early knowledge theorists such as Polanyi (1958), Nonaka and Takeuchi (1995) also distinguish it into two different types; the tacit and explicit, which is in contrast to western epistemology. Polanyi (1958) makes the assertion that "we can know more than we can tell" to emphasise the tacit dimension of knowledge. His argument posits that there is knowledge that cannot be adequately articulated, either by explicit or verbal means, and that all knowledge is rooted in tacit knowledge. Polanyi's assertions imply that with tacit knowledge, employees are not always aware of the knowledge they possess in their minds or how such knowledge can be valuable to other staff members in the firm. Tacit knowledge can be defined as skills, ideas and experiences that people have but are difficult to be codified or extracted and may not necessarily be easily articulated (Chugh 2015). As such, effective transfer of tacit knowledge requires extensive



personal contact, regular interaction and trust (Goffin & Koners 2011). This is what Nonaka (1994:19) calls ‘socialisation’ in his SECI knowledge creation framework. See Figure 8 below.

Davenport and Prusak (1998:5) explain knowledge as “a fluid mix of framed experiences, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers”. Nonaka (1994) is spot-on in his SECI model when stressing that the knowledge creation process starts and ends with tacit knowledge. See Figure 8 below.



**Figure 8: The SECI knowledge creation framework**

(Source: Nonaka 1994:19)

Sveiby (2001:344) concurs with Polanyi and Nonaka in his view that knowledge is private. He does so by providing an operational definition of knowledge by explaining it as “a capacity to act” (Sveiby 1994, 1997) and that capacity to act can only be shown in action. From this definition it is clear that knowledge is dynamic and highly personal (Nonaka 1994; Nonaka & Takeuchi 1995; Sveiby 2001). As such, loss of organisational knowledge equates to loss of capacity to act, thus affecting negatively a firm’s competitive advantage, performance and strategy.

Many commentators call for firms to put mechanisms in place to manage personal tacit knowledge properly, since it is essentially personal in nature and therefore very difficult to extract it from the minds of the individual holders of such knowledge (Omotayo 2015; Omerzel & Gulev 2011; Prusak & Davenport 2013). Managing knowledge in a firm is everybody's responsibility (Prusak & Davenport 2013:260). In an organisational context, capacity to act is an individual activity, which individual employees learn through experience and training on the job (Omotayo 2015:6). Management of tacit knowledge that is personal in nature is central to this study, as SOEs cannot afford to lose it. Employees in SOEs are true agents of organisational knowledge. For that reason, the RBV considers human resources as critical resources of a firm, whilst the KBV treats employees in the organisation as agents and explorers of knowledge. According to Omerzel and Gulev (2011:337), companies such as SOEs should be in a position to analyse their knowledge so that strategies can be implemented to further develop, manage and protect the knowledge from being used by competitors. They argue that many companies outlearn and outperform their competitors, not because of their knowledge base, but largely because of their ability to manage knowledge better than competing firms.

Becerra-Fernandez et al. (2004:18) view knowledge as a capability. This knowledge-based view differs from the RBV in that it places the emphasis on the way in which knowledge can be applied in firms to influence performance. They do so by making a distinction between knowledge as declarative (facts) and procedural knowledge. Declarative knowledge manifests itself as 'know what', whereas procedural knowledge is characterised as 'know how', for instance, how to ride a motorbike (Becerra-Fernandez et al. 2004:9). Both declarative and procedural knowledge need to be managed by organisations.

Blacker (1995:1021) defines knowledge as having five distinct forms: embodied, embedded, embrained, encultured, and encoded. First, embodied knowledge is characterised as knowledge that is obtained through training offered to perform a job (Hislop 2013). Secondly, as a knowledge that is embedded in organisational workflows, routines, procedures, rules and systems (Omotayo 2015:5). Thirdly, embrained knowledge is knowledge that an individual employee possesses, which is highly personal and difficult to express through verbal activities. Fourthly, encultured knowledge is a type of knowledge that is shared among groups of

employees who share a similar context, environments or culture of what is accepted as a norm or standard. Lastly, encoded knowledge is characterised as a form of knowledge that is formalised, written down in the form of formulas, manuals, graphs and so forth, and it can be shared through multiple channels and means. Encoded knowledge is similar to what Nonaka (1994, 1995) prefers to call explicit knowledge. Omotayo (2015:5) summarises it nicely by saying that organisational knowledge is embodied and embrained in employees, embedded in work processes or routines, encultured among organisational employees, and encoded in textbooks, policies, manuals, procedures, systems. Omotayo's articulation of what characterises organisational knowledge is quite inclusive of all the critical knowledge that need to be protected and managed in organisations. This theoretical proposition emphasises the strategic relationship of human resources (agents of knowledge) and knowledge management in managing knowledge in organisations.

The KBV of the firm considers a firm as a knowledge-creating and knowledge-transfer entity. Nonaka, Toyama and Nagata (2000:1) argue that knowledge and the capability to create and use such knowledge are the most important source of a firm's sustainable competitive advantage. If this is the case with SOEs as knowledge-creating entities, what does the loss of organisational knowledge mean to the competitive advantage of these firms? Nonaka et al. (2000) are of the belief that it is through a set of knowledge, abilities and skills (KSA) that a company is in a position to innovate new products, services and processes, or to improve existing ones more efficiently and effectively. Having said that, the next section provides a review of the knowledge-based view of the firm to sustainable competitive advantage.

#### **2.4.4 The knowledge-based view of the firm on sustainable competitive advantage**

According to Grant (1996:109), theories of the firm or theories of competitive advantage are conceptual models of business enterprises, which explain and predict their strategy, structure and behaviour. The KBV is one such theory of competitive advantage that characterises a firm as an institution for creating, applying and integrating knowledge (Nonaka 1994; Grant 1996; Spender & Grant 1996). The KBV theory of the firm emerged out of the RBV theory of the firm. Some authors argue that the KBV is an extension of the RBV (von Krogh & Wallin 2011, Theriou et

al. 2009; Wang 2014) though the focus, approach and its emphasis are different from the resource-based perspective. Grant (1996a; 1996b) views the knowledge-based theory of the firm as a theory of the organisation and as a theory of strategy or theory of competitive advantage taking its cue from internal organisational knowledge as a key resource driving production of goods and services in the knowledge-based competition.

Many of the theories and sources of sustained competitive advantage are relevant to the knowledge-based model of the firm. Proponents of the RBV, such as Wernerfelt (1984), Barney (1991), and Peteraf (1993), are lamented for treating knowledge as a generic resource. KBV theorists (Grant 1996, 1997; Spender & Grant 1996; Teece et al. 1997) view knowledge as a firm-specific unique and valuable resource that needs to be properly managed (Hamel & Prahalad 1990). Argote and Ingram (2000:155) see the role of knowledge as a foundation for the SCA of companies. The KBV theory of the firm is premised on the recognition of knowledge as the principal source of economic rents and competitive advantage (Spender & Grant 1996).

According to Spender and Grant (1996:5), knowledge-oriented terms such as tacit knowledge, competencies, expertise and capability, intangible knowledge assets and organisational learning started appearing in much of the literature on the RBV in the 1980s. A strategy shift towards knowledge work and the emergence of the information age in the early 1990s encouraged firms to look at knowledge and treat it as a vital organisational resource. In line with the notion of the knowledge-based view of the firm, Peter Drucker coined the concepts 'knowledge worker' and 'knowledge-intensive firm' (Drucker 1993). Accordingly, knowledge workers are a key knowledge source that drives organisational performance and survival (Tzortzaki & Mihiotis 2014:32). McFarlane (2008) defines knowledge workers as employees that drive superior performance and achievement through the effective and efficient use of knowledge they possess. SOEs are knowledge-intensive firms (Benassi & Landoni 2017; Roome 2012). Similarly, the loss of this type of employees is equal to a loss of valuable organisational knowledge. Therefore, SOEs need to be managed as knowledge-creation and knowledge-application agents.

Grant (1996) views the firm as a knowledge-integration system. Grant's view is agreement with the views of Nonaka, Byosiere, Borucki and Konno (1994) and Nonaka and Takeuchi (1995),

namely that a firm is a knowledge-creation and distribution system. Grant (1997:451) provides a set of assumptions that lay the foundations for the KBV and the circumstances surrounding knowledge creation and application in firms, which include:

- Knowledge is an important production resource in terms of its contribution to strategic value add and its strategic significance.
- Different types of knowledge differ in their transferability. Here, the distinction is offered between explicit knowledge, which is capable of articulation and transferable at low cost, and tacit knowledge, which manifestation lies only in its application and therefore, not easy to transfer.
- Humans are the primary agents of the knowledge creation process and in the case of tacit knowledge they are the principal repositories of knowledge.
- Most knowledge is subject to economies of scale and scope. This is more so with explicit knowledge, which can be deployed at lower costs because it is easy for articulation and transferability. The same cannot be said of tacit knowledge, which is hard to transfer.

Many proponents of the KBV and KM agree that knowledge, expertise and competencies are the roots of and drivers of competitive advantage in the knowledge economy (Blomqvist and Kinato 2015; Takeuchi 2013; Boisot 1999; Hamel & Prahalad 1990). According to Prahalad and Hamel (1990:79), companies in the global knowledge-based economy will be judged according to their abilities to identify, nurture and exploit their core competencies. Knowledge assets do not diminish with use (Boisot 1999; Prahalad & Hamel 1990). Prahalad and Hamel (1990:81) assert that unlike physical resources that deteriorate over time, competencies such as skills, knowledge and expertise are enriched if they are used and shared. Moreover, they fade if they remain unused. Takeuchi (2013:68) points out that the KBV of the strategy differs from other schools of thought in that its singular focus is on knowledge as the driver of organisational strategy. Unlike the RBV, the KBV does not beat around the bush in its approach; its focus has been nothing else but on knowledge as a source of sustainable competitive advantage. It does so by putting humans and knowledge at the centre of strategy, treating strategy as a dynamic process and firm strategy as having a social agenda (Takeuchi 2013:76). The knowledge-based theory of the firm treats

knowledge assets as sources of competitive advantage. It links the competitive advantage of firms with knowledge and capabilities that are firm-specific. Knowledge, skills and experience drive organisational performance in the knowledge-based competition and such knowledge assets provide companies with sustainable competitive advantage. Loss of these knowledge assets inevitable threatens organisational growth strategies of firms operating in the area of knowledge economy.

For the purpose of this study, knowledge management may serve as an excellent platform to address the issue of loss of tacit knowledge and the management of the phenomenon in the organisations. Based on the literature reviewed on this section, the researcher of the current study provides a summary about the origin, similarities and approaches of the resource-based view and knowledge-based view in table 2.

**Table 2: Origin, similarities and approaches of the RBV and the KBV**

<b>Theory of the firm</b>	<b>RBV</b>	<b>KBV</b>
<b>Originality</b>	Developed due to (a) the limitations of the MBV, and (b) the strategic management paradigm from the external environment to the internal positioning of the firm. These limitations gave rise to the RBV (Wang 2014).	Built on the resourced-based view theory of the firm. The KBV emerged within the context of the RBV due to its limited focus and treatment of knowledge as a generic firm resource.
<b>Similarities</b>	Draws attention to the firm’s internal environment as a driver of competitive advantage.  Intra-organisation focus on generic firm-specific resources	Draws attention to the firm’s internal environment as a driver of competitive advantage.  Intra-organisational focus on firm-specific knowledge resources or assets.

<p><b>Approaches</b></p>	<p>Views a firm as a collection of resources.</p> <p>Resources (tangible and intangible) are sources of sustainable competitive advantage; the resources must be valuable, rare, imitable and non-substitutable (Barney 1991).</p> <p>Classifies firm resources into three categories: physical, monetary and human.</p> <p>Places an emphasis on the resources and internal capabilities of the firm, thus viewing a company as a bundle of resources.</p> <p>Focuses on generic firm-specific resources.</p> <p>Views firms as a bundle of both tangible and intangible resources.</p> <p>Firm-superior performance is the result of firm-specific resources and capabilities.</p> <p>Focuses on the development of distinctive and unique firm-specific resources and capabilities.</p>	<p>Views a firm as a reservoir of knowledge resources. (Grant 1996; Nonaka &amp; Takeuchi 1995)</p> <p>Knowledge and skills (that are rare and imitable) are sources of sustainable competitive advantage.</p> <p>Classifies knowledge assets as skills, knowledge, expertise and competencies.</p> <p>Focuses on organisational knowledge resources.</p> <p>Views organisations as institutions that generate, use, integrate and distribute knowledge.</p> <p>Knowledge is viewed as the only source of sustainable competitive advantage (Davenport &amp; Prusak 1998).</p> <p>Focuses on the development and securing of knowledge-based assets.</p> <p>Recognises that knowledge is a key organisational asset.</p> <p>Differentiate knowledge from other resources, especially physical and human resources.</p>
--------------------------	--	--

The next section looks at the role of HRM in knowledge management.

## **2.5 Role of human resources management in knowledge management**

Human capital theory is associated with the RBV (Buta 2015:156) but it is well-conceptualised in the KBV of the firm. This section attempts to provide the interface between HRM from a RBV perspective and KM from the KBV and knowledge creation theory perspectives. Organisational knowledge creation, transfer and retention are domains of KM, while managing the sources (people) of such knowledge assets is a HRM activity in organisations. The RBV considers human resources as vital internal firm resources (both tangible and intangible) that must be better managed to achieve superior performance. In terms of the KBV perspective, knowledge embedded in human resources is a source of competitive advantage. According to Buta (2015:158), knowledge, skills and other forms of intellectual capital are most relevant and vital firm resources. The human resources (employees) of the firm can only serve as sources of new and innovative ideas and set the tone for the strategic direction of the firm. Lin et al. (2016:1764) construe people in the firms as the creators and suppliers of knowledge. They argue that each staff member possesses a unique set of knowledge and skills to manage their tasks effectively and efficiently in the company.

Human resource management is a common practice to personnel management which aims to achieve sustainable competitive advantage through recruitment, development and retention of a highly devoted and knowledgeable workforce using a number of cultural, structural and talent management strategies (Storey 2007:7). Jackson, Hitt and DeNisi (2003:1) indicate that for organisations to effectively manage their knowledge, their efforts are dependent on formulating an effective HRM strategy or system that boost the firm's ability to develop, transfer and use knowledge. They advance their argument by stating that a HRM system should be designed in such a way that it assists in identifying the behaviours needed for knowledge-based competition.

According to Jackson et al. (2003:3), the type of generic behaviours needed in pursuing a knowledge-based strategy should relate to knowledge acquisition, knowledge creation, knowledge transfer, knowledge application and knowledge updating. In line with Barney's



resource-based thinking, such behaviours must be firm-specific, which must be seen to follow the VRIN principles. In other words, the knowledge management behaviours of any firm must be valuable, rare, imitable and non-substitutable largely because they remain firm-specific knowledge management behaviours. The attraction of the so-called knowledge workers as part of HRM systems must ensure that such knowledge-based behaviours are spotted and nurtured to support organisational knowledge-based strategies. Several authors, such as Matošková and Směšná (2017), Kianto et al. (2017), Fong et al. (2011), Camelo-Ordaz, Sousa-Ginel and Valle-Cabrera (2011) and Cabrera and Cabrera (2005) stress the important role that human resource management practices play in the management of organisational knowledge

According to El-Farr and Hosseingholizadeh (2019), Kianto et al. (2017) and Camelo-Ordaz et al. (2011), there are knowledge-based HRM practices that positively affect firm performance and in the process facilitate knowledge management activities in the organisation. It is important to point out that although these knowledge-based HRM practices are argued to be supporting KM processes, they have not been applied to the phenomenon of organisational knowledge loss. Kianto et al. (2017) and Camelo-Ordaz et al. (2011) focuses on HRM practices that enhance knowledge sharing, intellectual capital and innovation capability in the Spanish companies. Camelo-Ordaz et al. (2011:1448) in their study of Spanish innovative industries have found that high-involvement HRM practices lead to positive influence on employees' willingness and commitment to share knowledge. This view is in agreement with several previous studies that indicate that effective commitment of the firm's employees enhance knowledge sharing (Hislop 2003; Thompson & Heron 2005; Agarwala 2003). Matošková and Směšná (2017: 620) contend that companies can use some human resource management practices as strategies to motivate employees' commitment to get them involved in acquiring, transferring and applying knowledge.

HRM practices can relate positively to organisational members in getting involved in KM processes (Matošková & Směšná 2017; Hislop 2003; Smith & Schurink 2005). Moreover, HRM practices can play a role in mediating staff turnover problems and increasing productivity and performance of the employees (Huselid 1995:642). Huselid's study demonstrates that HRM departments are in a better position to develop and implement high performance work practices (HPWPs). Accordingly, such HPWPs will serve to decrease staff turnover by increasing

productivity as well the superior performance of the firm. A critical question is how such HPWPs or HRM practices assist to arrest knowledge from walking out of the company? In order for HRM to deal with the challenges of knowledge-based work and knowledge workers in the knowledge-based competition, Lengnick-Hall and Lengnick-Hall (2002:33) identify four new roles for HRM in knowledge management, namely HRM playing a role of human capital steward, knowledge facilitator, rapid deployment specialist, and that of a relationship builder.

- **HRM as human capital stewardship**

HRM can play a role of human capital stewardship by developing knowledge, skills, competencies and commitment among employees. Briefly, it is the view of Lengnick-Hall and Lengnick-Hall, (2002:35) that HRM is in a position to provide stewardship by keeping the best minds and thinkers engaged. Nonaka et al. (2000) support this perspective by emphasising that as part of providing a ‘ba’ (shared context), knowledge-leadership and vision are important factors for knowledge creation in knowledge-intensive firms. Equally, HRM practices have a role to play in influencing and building a positive organisational culture from which KM is nurtured and embedded in the organisational processes. In doing so, HRM builds a so-called knowledge-sharing culture whereby competition between staff and knowledge hoarding is restricted (Foss, Pedersen, Reinholt Fosgaard & Stea 2015; Donate & Guadamillas 2011; Matošková & Směšná 2017). Organisational culture is affected by HRM practices in organisations. Furthermore, in order to build the “ba” or shared context, top management and HR managers must choose the right mix of employees to participate and promote interaction in knowledge management activities (Nonaka et al. 2000:25).

- **HRM as a knowledge facilitator**

In the knowledge economy, firms such as SOEs become even more knowledge intensive. According to Hislop (2013:3), knowledge-intensive industries are replacing manufacturing industries as key wealth generators, and knowledge is becoming a key driver of a firm’s production and superior performance. Lengnick-Hall and Lengnick-Hall (2002:37) argue that for a firm to gain a sustained competitive advantage in the knowledge-based competition, it must be able to create and share knowledge internally among the employees and externally with the

customers, strategic alliance partners and suppliers. Accordingly, the organisation must implement knowledge-based HRM practices that are able to reward and facilitate knowledge acquisition, application, transfer and retention (KM activities). A HRM system must be able to tap into employees' knowledge as a sources of competitive advantage, innovation and superior performance (Sengottuvel & Aktharsha 2016; Ologbo, Nor & Okyere-Kwakye 2015; Lengnick-Hall and Lengnick-Hall 2002).

- **HRM as a relationship builder**

According to Kaše, Paauwe and Zupan (2009:165), HRM influences individual employees and their relationships with firms by fostering interpersonal relations as well as a mechanism through which HR practices can affect knowledge processes in the firm. Dörhöfer (2012:475) is spot-on when emphasising the fact that in a human resource system, employment practices and organisational designs must be encouraged to complement informal relationships. Lengnick-Hall and Lengnick-Hall (2002:39) contend that facilitating knowledge sharing in the firm is a new role of HRM as a relationship builder. Internally, HRM systems should encourage organisational and work designs through cross-functional teams by embedding a culture where knowledge sharing is across functional business processes.

Several authors are in agreement that the main role of SHRM lies in organising and developing employees across all levels of the organisation; in other words, at individual, group and organisational level (Boxal & Purcel 2008; Dörhöfer 2012). Similarly, knowledge creation, application, retention and transfer in the organisation take places at all three these levels (Takeuchi 2006:3). In order to build social capital of the firm, HRM practices should be in a position to facilitate network capabilities for employees, both internally and externally.

- **HRM as a deployment specialist**

Naturally, the role of HRM in the organisations is that of identifying, recruiting, developing, training, deploying, and retaining employees. According to Lengnick-Hall and Lengnick-Hall (2002:35), the future lies in the capacity for organisations to design versatile, dynamic and flexible HRM architecture that supports the increasing pace of change in the world of work. Furthermore, HRM strategies must pay attention to managing the process of new employees'

adaptation into the organisation (Matošková & Směšná 2017; Matošková 2012; Cabrera & Cabrera 2005). In addition, HRM recruitment processes should be able to recruit employees with the right positive attitude towards knowledge management activities.

Intan-Soraya and Chew (2010:259) deduce that the field of human resource management is specifically concerned with the management of people in organisations. Jones, George and Hill (2000:115) formally define HRM as activities performed by managers to attract, retain, and manage the performance of employees so that they contribute to achieving organisational goals. A key component of this approach to HRM is its emphasis on developing staffing systems that provide the necessary talent for effective knowledge management (Lengnick-Hall & Andrade 2008). In organisational settings, HRM is normally responsible for recruitment, organisational design, development and retention of employees (Pe'er 2016; Wright et al. 1994; Huselid 1995). As such, it provides critical resources and practices for knowledge and for KM to take place in the organisation.

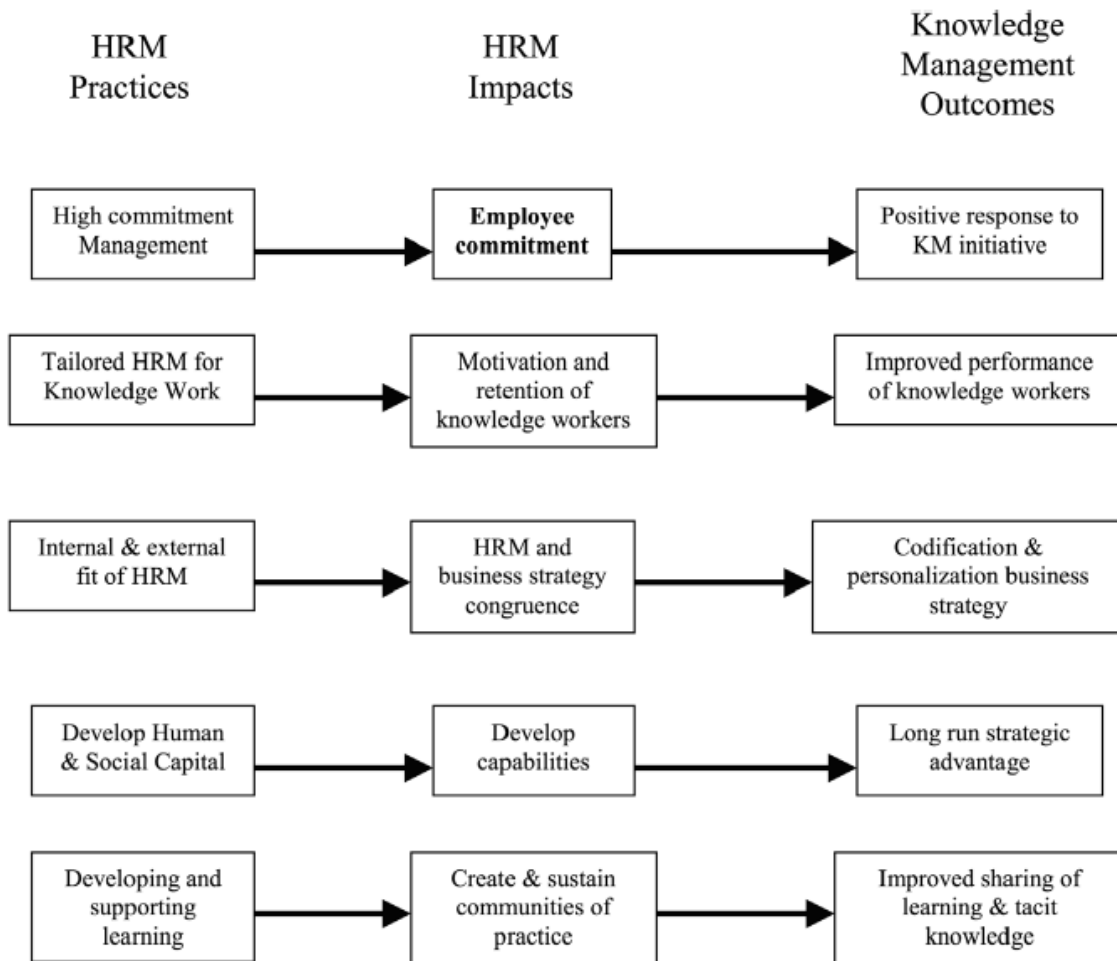
The next section looks specifically at HRM practices that support KM processes and activities in the organisation.

## **2.6 HRM practices supporting knowledge management activities**

The previous section provided perspectives on the role that HRM plays in knowledge management without focusing on the practices in detail. It is important to remind readers that this study attempts to determine the possible integration of HRM practices and KM in managing the phenomenon of organisational knowledge loss in state-owned enterprises. This section provides a much broader analysis of HRM practices aimed at supporting KM activities in an organisational setting.

A review of the literature shows that some researchers are beginning to pay attention to HRM as a supportive element and resource-infrastructure provider to KM processes and activities in organisations (Dalkir 2020; Khawaldeh 2020; Matošková & Směšná 2017; Donate & Guadamillas 2015, 2011; Foss, Pedersen, Fosgaard & Stea 2015; Aziri, Veseli & Ibraimi 2013; Edvardson 2008). According to Foss et al. (2015), rewards, job design and organisational climate

issues are emerging as fundamental forces that influence motivation, which in turn facilitate knowledge sharing in organisations. It is important determine how HR practices such as recruitment and selection and others support KM processes. This is illustrated in Figure 9 below. Recruiting and retaining highly committed workforce contributes to knowledge management activities and outcomes.



**Figure 9: HRM practices affecting KM outcomes**

(Source: Scarbrough and Carter 2000:63)

The next section presents various human resource management practices that support knowledge management in the organisations.

### **2.6.1 Recruitment and selection**

The terrain of HRM departments in organisations is the identification and recruitment of workers who have the required knowledge, skills, attitude and expertise. However, it is argued that the biggest challenge facing HRM departments is finding and deploying knowledge workers with such attributes (Dalkir 2020; Sokolov & Zavyalova 2020; Alshanbri et al. 2015; Smith & Schurink 2005) largely because knowledge workers have a different view of work and work ethics compared to just any labourer. According to Ishak, Eze and Ling (2010:3), knowledge workers are different from any other worker because they are self-reliant with high human capital, technical skills, education, learning and experience. This suggests that traditional recruitment processes can hinder knowledge management activities (Edvardson 2008: 555) and become irrelevant in sourcing the kind of a talent required in a knowledge-based organisation. In the face of these challenges, Delery and Roumpi (2017:2) and Huselid (1995:642) propose that organisations should look at HPWPs as an alternative to traditional HRM practices. They argue that traditional recruitment practices fail to enhance employees' knowledge, skills, abilities and other characteristics (KSAOs) expected from knowledge workers. Alshanbri et al. (2015:703) posit that for HRM practices to support KM, recruitment should be seen as "a knowledge-acquisition technique" that determines the requirements related to building organisational knowledge. As a result, the selection and appointment of potential employees possessing such organisational knowledge should be among some of the criteria in the selection process. If a recruitment process is seen as a knowledge-acquisition technique, as suggested by Alshanbri et al. (2015), then such process will support KM by hiring employees with relevant KSAOs.

The section below provides an analysis of how HRM compensation and rewards serve as a support element for KM activities.

### **2.6.2 Compensation and rewards systems**

Rewards may mean many different things to people of any organisation. Incentive systems can affect the cost and the outcome of knowledge management processes (Shafagatova & Van Looy 2020; Nonaka & Toyama 2002). Generally, rewards are used with the intention to motivate

employees to do more in terms of performance targets. Fong et al. (2011:708) concur that employees consequently expect to repeat or out-create positive performance behaviours in anticipation of getting rewards and recognition. A compensation and reward system may build or hinder a knowledge management culture. A study by Foss et al. (2015:957) among five knowledge-intensive companies show that employees who are given knowledge-sharing rewards experience high levels of autonomous motivation to share knowledge. However, rewards may also create difficulty towards building a knowledge-sharing culture. Phaladi (2011:90) carried out a study in a public water utility of South Africa and found that the utility made use of a performance reward system that rewards individual performance targets over team performance. This type of a culture served as a hindrance to a knowledge sharing and retention culture because employees were competing with each other and keeping information and knowledge away from each other. This finding is agreement with research by Goh (2002) who found that employees keep their knowledge as 'weapons' to compete with their colleagues due to individual-driven performance reward systems. Concisely, depending how rewards are designed, they can build or destroy KSAOs.

Companies use HRM practices such as compensation and reward system as incentives to instil the desired knowledge sharing behaviour in employees (El-Farr & Hosseingholizadeh 2019; Foss et al. 2015; Fong et al. 2011). Fong et al. (2011) in their study of HRM practices and knowledge sharing in a Malaysian context, contend that compensation and rewards have a positive influence on knowledge sharing. However, Hislop (2003:185) cautions HR managers that knowledge by nature represents a critical potential resource power and that it may not be such an obvious thing for employees to share their knowledge willingly. Therefore, compensation and reward systems must be knowledge-centric in nature. Donate and Guadamillas (2015), in their study of Spanish technology-related industries, confirm that knowledge-oriented HRM practices have a high influence on both KM exploitation practices and an organisation's performance in terms of innovation.

### **2.6.3 Organisational design**

Organisational structures play a very important facilitation role in knowledge management (Matošková & Směšná 2017; Alawamleh & Kloub 2013). Similarly, knowledge-centred culture and organisational structures that are knowledge-centric provide important organisational capabilities and resources to drive strategies for effective management of knowledge. According to Ayatollah and Zeraatkar (2019:110), the way that the structure of an organisation is designed, could influence the success of knowledge management initiatives either positively or negatively. In brief, KM is to a large extent contingent on the structure of the organisation. The design of an organisation can positively or negatively serve to affect knowledge transfer and retention culture. A knowledge sharing culture is supported in an organisational structure that support and promote teamwork (Goh 2002; Fong et al. 2011). Hislop (2013:224) extrapolates that organisations should design jobs and workflow processes with the view of facilitating appropriate knowledge-creation and sharing attitudes. Cabrera and Cabrera (2005:731) share similar sentiments that work designs must be made in such a way that they encourage collaboration among employees, interdependencies and cross-functional work relationships. According to Fong et al. (2011:709), teamwork occurs when a group of staff work closely together on projects or work activities to accomplish their tasks. Foss et al. (2015:958) concur that jobs should be designed to foster autonomous motivation for knowledge management processes. The idea underlying this assertion is that organisational structures, jobs and work environments need to be designed in such way that they serve as an autonomous motivation and promote job variety and autonomy. When employees feel a sense of autonomy and flexibility on the job, they are more likely to be committed to the firm (Foss et al. 2015; Fong et al. 2011). If they remain committed to the firm, their KSOs are retained by the organisation. Ayatollah and Zeraatkar (2019), Matošková and Směšná (2017), Pham, Nguyen and Nguyen (2015) and Cagne (2009) agree that job design is likely to affect knowledge sharing behaviours in organisations.

### **2.6.4 Performance management**

As indicated in the previous section, a performance management system can be used as an assessment tool to consider if employees repeat or out-create positive performance behaviours in



anticipation of getting rewards and recognition. Performance appraisal tools can contribute significantly to knowledge management and employee attrition by indicating the required knowledge-sharing behavioural expectations versus the actual behaviours (El-Farr & Hosseingholizadeh 2019; Armstrong 2006). Performance management are closely related to rewards. Alshanbri et al. (2015:704) and Cabrera and Cabrera (2005:731) agree that performance appraisal systems can be used to evaluate knowledge-sharing attributes of the employees and reward them in accordance with their performance. Firms can use such tools to review the expected versus the actual behaviours for both financial and non-financial purposes (Huang, Davison, Liu & Gu 2008; Kankanhalli, Tan & Wei 2005; Alshanbri et al. 2015; Armstrong 2006).

Huang et al. (2008:67) infer that both financial and non-financial rewards encourage knowledge management activities. However, they deduce that employees' attitudes towards knowledge sharing are strongly influenced by non-monetary rewards. Alshanbri et al. (2015:704) argue that such performance appraisals must be innovative and flexible enough to support knowledge management processes and discourage employee attrition rates. Kianto et al. (2017:13) imply that such knowledge-based performance must be good enough and relevant for guiding knowledge sharing behaviours. These authors emphasise that HR managers should include performance criteria related to KM processes, for instance knowledge identification, creation, application and transfer. Therefore, such knowledge-centred performance systems should provide managers with tools and criteria to review employees' contribution in terms of their contributions to build organisational knowledge assets and processes. The idea behind this perspective is that whatever knowledge-centred performance appraisals and knowledge-based organisations put in place, they must be developed with the idea of recognising and promoting knowledge management processes. Cabrera and Cabrera (2005:727) state that performance appraisals should focus more on developmental evaluations as opposed to critical focus evaluations. They argue that developmental evaluations encourage employees to share more innovative ideas than those who expect to receive evaluations that are more critical.

### **2.6.5 Training and development**

Training is a HRM process that directly enhances the transfer and retention of knowledge between and amongst employees. As such, it is seen as the core to any knowledge-management activity (Alshanbri et al. 2015:703). Team-based training and cross-training assist in building relationships that are important in facilitating knowledge sharing across different areas of the business (Cabrera and Cabrera 2005:726). The purpose of any training, regardless of the form, is to share knowledge. Therefore, it must be seen as a key enabler to KM processes in organisations. According to El-Farr and Hosseingholizadeh (2019) and Narasimha (2000), training of employees plays an important role in the development of organisational knowledge, skills and competencies. In the process, this result in employees who are fully developed with relevant KSAOs required by the organisation. Whether the organisation is able to retain such skill attributes from employees when they leave, is something different. However, recent research by Delery and Roumpi (2017:9) imply that firms that offer extensive training and development to their employees are more likely to retain human capital resources, largely because training and development serve as motivation and commitment. Thus, HRM through practices such as training and development provide the right context for employees to use and share knowledge. Such HRM practices are knowledge-centred and only serve to create and enhance a knowledge-centred culture, knowledge management processes and innovation in companies (Chaita & Sibanda 2021; Dalkir 2020; Donate & Guadamillas 2011).

Having provided a discourse on the above-mentioned knowledge-centred HRM practices, it must be noted that these practices should be treated and implemented interdependently to ensure better KM processes and outcomes. From the literature reviewed thus far, it appears that well-thought-out and innovative HRM best practices facilitate KM in knowledge-intensive firms. A framework developed by Scarbrough and Carter (2000:63) – see Figure 9 above – provides a good analysis of the interface for human resource management and knowledge management. Unlike other type of workers, knowledge workers possess dynamic and distinct knowledge, skills and expertise that set them apart from industrial type of workers. Therefore, the management of such competencies require firm-specific and distinctive HR practices whose sole purpose is that of attracting, motivating and retaining knowledge workers (Hislop 2003:193). This is precisely

because the retention of knowledge workers means retention and integration of their knowledge into the organisation.

## **2.7 A case for knowledge management in the organisation**

Organisational knowledge as a strategic asset and a source of competitive advantage should not remain unattended to in companies. Lengnick-Hall and Lengnick-Hall (2002:81) emphasise that “by actively managing knowledge, rather than letting knowledge-related activities run their own course, organisations can experience many positive and desirable outcomes”. This section advances the reasons why KM is important in firms, especially in those that are dependent on knowledge as a means of production.

A shift from a resource-based strategy to a knowledge-based view of the firm in mid-1995 has placed the management of knowledge assets at the centre of the organisational strategy. Similarly, knowledge management places the strategic importance of organisational intangible assets (knowledge, skills and experience) at the centre of strategy and management in organisations (Durst & Zieba 2020; Rahimli 2012). In other words, for companies to achieve a sustainable competitive advantage, they must know what kind of knowledge they need to create, share and use through proper management and organisation. To borrow from the RBV theorists (Barney 1991; Peteraf 1993; Wernerfelt 1984), these knowledge assets must be valuable, have imperfect mobility, be non-substitutable, and difficult to imitate. Proponents of the KM and KBV theorists see knowledge as the most important resource to enable organisations to maintain a competitive advantage and superior performance (Gürlek 2020a; Durst 2018; Nonaka et al. 2000; Nonaka & Toyama 2002; Grant 1996; Spender & Grant 1996; Kogut & Zander 1992; Prahalad & Hamel 1990). This view of a firm as a collection of knowledge assets (Nonaka & Toyama 2002:997), clearly set the tone or condition for management of such assets. That is why KM is seen a strategic management tool used by organisations to map out their strategies in the knowledge-based economy (Omotayo 2015:12). According to Haesli and Boxall (2005:1955), the RBV and the KBV are critical developments in the strategic management literature that have placed knowledge management at the centre of literature on management and organisations.

Knowledge management creates an enabling environment for organisations pursuing a knowledge-based strategy and competition. In order to understand its role in the knowledge-intensive competition, it is important to understand the forces driving knowledge management in organisations. Becerra-Fernandez et al. (2004:3-5) highlight that the following are driving forces behind knowledge management in organisations: increasing domain complexity; accelerating market volatility; intensified speed of responsiveness; impact of downsizing; war for talents; and high employee turnover rates in the knowledge-based competition. They advance their argument by asserting that when faced with complexity, market volatility and accelerated responsiveness, managers in this era feel inadequate to make difficult decisions that they have to face daily. To deal with this kind of complexity, KM becomes an important tool for companies to make better and faster decisions. Desouza and Paquette (2011) concur that without adequate care about how organisations manage knowledge, they will find it difficult to operate optimally. As a result, a high level of complexity will result in low quality products and services leading to unhappy customers and the demise of companies.

Another reason why KM should seriously be considered in organisations, is increased employee mobility and attrition rates (Sumbal et al. 2020; Singh & Gupta 2020; Sandborn & Williams 2017; Phaladi 2011; DeLong 2004; Sutherland & Jordan 2005) and the resultant risks of loss of valuable organisational knowledge (Martins & Martins 2011; Jennex & Durcikova 2013). According to Durst et al. (2015), Daghfous et al. (2013), Sumbal et al. (2017) and Phaladi (2011), the loss of organisational knowledge through employee turnover, ageing workforce and other factors threatens the survival of the companies and must be managed. Thus, knowledge management becomes an inevitable strategic management tool to deal with complexities in knowledge-intensive firms. The aging workforce in many companies make a strong case for knowledge management. Many companies are facing a phenomenon of greying workforce and consequently much of organisational knowledge will be lost in the process (Omotayo 2015; Phaladi 2011). Organisations in a similar transition will have to do more than just dealing with the complexities of the knowledge-based competition; they need to implement knowledge transfer and retention strategies.

It is also said that KM facilitates organisational learning and in the process serve to advance and actualise the concept of a learning organisation into a reality in organisations. Susanty and Salva (2017:282) concur with Bordeianu (2015:147) that through the implementation of KM strategies, learning organisations will be in a position to face the changes, challenges and complexities that come along the way. In addition to facilitating organisational learning, KM systems can enhance innovation capabilities within firms. According to Adams and Lamont (2003:149), organisations sustain competitive advantage through constant development of learning and innovation processes in order to revive exiting products and services into new ones. Teixeira, Oliveira and Curado (2019:69) contend that knowledge management processes help the facilitation of innovation activities in the knowledge-based enterprises. Matošková and Směšná (2017:614-615) agree with Teixeira et al. (2019) that sharing knowledge contribute to innovation processes in organisations. Scarbrough (2003:505) infers that innovation is the activity of putting knowledge into action. In other words, knowledge is central to innovation activities. There has to be some form of knowledge sharing for innovation to be realised in new product developments and services. Chaita and Sibanda (2021:98) postulate that innovation is a critical source of sustainable competitive advantages and organisational effectiveness in the knowledge-driven organisations. Through good strategies aimed at facilitating KM processes such as creation, application, collaboration and sharing of knowledge, organisations can realise innovation opportunities (Chaita & Sibanda 2021; Teixeira et al. 2019). Desouza and Paquette (2011) concurs by asserting that companies that are in a position to innovate will be able to secure their competitive position and superior performance in the marketplace. The marketplace in the knowledge economy becomes increasingly knowledge-based and competitive and thus require a degree of innovation. Innovation happens in the context of knowledge sharing and learning. Learning organisations are characterised as companies that continuously offer new opportunities to learn, using learning opportunities to reach their goals, encouraging dialogue and creating an environment where employees are freely expressing ideas and opinions. Such organisations are risk tolerant (Bordeianu 2015). These organisational conditions serve to advance knowledge-sharing efforts. This position shows the critical role that KM plays in actualising learning in an organisation by creating and enabling a climate for KM to take place. Knowledge-based organisations are learning organisations in the making.

## **2.8 Core knowledge management processes and underlying theories**

A review of previous research reveals a lack of consensus on what defines knowledge management and its constituents. This level of complexity can be attributed to a diversity of views on what knowledge management in organisations entails. Knowledge management deals with activities involved in the discovery or creation, capturing, sharing and applying knowledge to enrich the impact of knowledge on achieving organisational goals (Hussinki et al. 2017b). This section focuses on the exploration of these four core knowledge management processes as well as the key theories underpinning these widely-acknowledged and widely-discussed processes.

### **2.8.1 Knowledge creation process**

Before organisations can make attempts to manage organisational knowledge, it is imperative to understand how this knowledge is created in the first place. In doing so, this section relies heavily on the organisational knowledge-creation theory conceptualised by Nonaka and Takeuchi (1995) in their seminal work on the knowledge creating company (KCC). The knowledge-based view of the firm and the knowledge-creation theory see firms as knowledge creating and distribution entities. Von Krogh and Wallin (2011:265) argue that firms exist in the knowledge-based competition because they outperform the competition by creating and sharing knowledge. All knowledge-intensive companies create and use knowledge through their workers' interactions with the business environment (Davenport & Prusak 1998:52). This source postulates that knowledge workers absorb information, turn it into knowledge and make business decisions based on the information, and in the process respond to the challenges facing the business. Dalkir (2020:491) and Hislop (2013:107) concur with Davenport and Prusak (1998:53) and articulate that knowledge provide organisational members with the capacity to define and understand situations and act accordingly with information, knowledge and insights. Individuals are critical actors in the knowledge-creation process. Nonaka (1994:17) supports this assertion by pointing out that individual employees are key stakeholders in the creation of knowledge in the firm. Accordingly, as the prime movers in this process, they must be committed to the

process and supported by an organisational value system. As a result, such level of commitment manifests itself in actual knowledge creation activities (Nonaka 1994:21).

If knowledge indeed gives workers a capacity to sense and respond to environmental needs and issues, then it is worthwhile to understand how that knowledge is created in the first place. In this regard, Nonaka's theory of knowledge creation in companies is a tried and tested theory in the literature (Nonaka, 1991, 1994, 1995). The knowledge creation theory views knowledge creation as the capability of firms to generate and share new knowledge and embody such knowledge in processes, products and services (Nonaka & Takeuchi 1995; Samaduzzaman, Mou & Rezwan 2013). According to the knowledge creation theory (Nonaka 1991, 1994, 1995, 2007), innovation and new product development (NPD) are the breeding grounds for knowledge creation activities in knowledge-intensive firms. Innovation is about creating new ideas or turning new ideas into reality. NPD is an innovation and knowledge-creation function. As such, new knowledge is created in the process. Nonaka (1991; 2007) and Nonaka and Takeuchi (1995) explain that organisational knowledge creation happens through four basic knowledge patterns outlined below. See also Figure 8 in this regard.

- **Socialisation:** This knowledge-creation process manifests itself through tacit-to-tacit knowledge-interaction activities. Concisely, one organisational member shares tacit knowledge directly with another member in a form of job shadowing and shared experiences. Nonaka (2007:165) gives an example of an apprentice who is assigned to the head baker to learn his tacit expertise through observing, imitating and practicing the skill. Technical expertise, technical skills and technical knowledge are types of experiential knowledge assets developed through these socialisation activities.
- **Externalisation:** Knowledge creation happens through tacit to explicit conversion. The conversion happens because of the articulation of ideas, experiences and insights into the explication mode. Such articulation may take a form of knowledge assets in a product prototype, design or model.
- **Combination:** In the combination process, people combine different pieces of explicit knowledge into new knowledge. For instance, one can combine the monthly reports of

various departments to produce a comprehensive annual report. Information technology (IT) and IT systems play important roles in facilitating this knowledge process. Nonaka et al. (1998, 2000) refer to the rise and use of IT as the cyber or systemising 'ba'. This process also manifests itself in the form of systemic knowledge assets such as databases, company manuals, guidelines and procedures, books, standards, and so forth.

- **Internalisation:** Internalisation is a process through which explicit knowledge is converted into tacit knowledge. In this case, employees enrich their tacit knowledge base through internalising explicit knowledge. As a result, tacit knowledge becomes embedded in business routines, processes and daily work activities. The internalisation process manifests itself in knowledge assets such as expertise of the operation, organisational routines and organisational culture.

In an organisational setting, the knowledge creation processes work in tandem to produce various firm-specific knowledge assets. It is important that such assets meet the condition of a VRIN framework, because they remain valuable, rare, imitable and non-substitutable (Barney 1991). According to Nonaka et al. (2000:20), these assets are inputs, outputs as well as regulating factors in the knowledge creation process. Organisational knowledge creation needs a solid culture of trust, care and commitment from company employees.

Vlasov and Panikarova (2015:476) reveal a need to assess the efficiency of knowledge creation activities in SOEs. They posit that human capital is critical in the knowledge production of high-technology innovation in the utility sector. The SECI knowledge conversion model demonstrates that knowledge need some form of transferability in order to be created and used in the organisation. For this reason, many proponents of knowledge creation advocate for a knowledge-centric kind of leadership (Micić 2015; Hislop 2013; Singh 2008; Nonaka et al. 2000) to support the creation and transfer of activities as far as organisational knowledge is concerned. Organisational culture, leadership and other factors affecting knowledge management processes are discussed in detail later in this chapter. The value of organisational knowledge lies in its transferability capabilities.

The next section addresses the complexities associated with knowledge transfer.



## **2.8.2 The knowledge transfer process**

The previous section pursued the theory behind organisational knowledge creation. In order to understand how knowledge is shared across different levels of the firm, it is of paramount importance that we understand the theory behind its transfer. The basic principle underlining the knowledge transfer process is that there must be two or more parties involved: the recipient and the source of knowledge. Argote and Ingram (2000:154) make this point clear and indicate that knowledge sharing happens when experience in one unit of an organisation affects another business unit. This section explores how knowledge is distributed in the organisation depending on the characteristics of that knowledge, its transferability, organisational context, the sender, the recipient, and their relationship (Szulanski, Ringov & Jensen 2016; Argote & Ingram 2000; Von Hippel 1994; Szulanski 1995, 1996, 2000, 2003, 2004).

It must be noted that whilst the knowledge creation theory of Nonaka emphasise value in the knowledge creation process as discussed above and elsewhere in this thesis, for knowledge to be of value it must be shared. That is why knowledge transfer as an important element of organisational knowledge management needs a serious management effort across all levels of the organisation. According to Lin et al. (2016), Durst et al. (2015), Phaladi (2011), Joe, Young and Patel (2013) and DeLong (2004), to effectively deals with all drivers of organisational knowledge loss in the firms, you need efficient knowledge transfer and retention strategies (Wamundila & Ngulube 2011; Levy 2011).

Knowledge loss through various attrition factors presents a good business case for knowledge transfer and retention in organisations. Bousa and Venkitachalam (2013:331) emphasise that strategies and processes aimed at managing organisational knowledge should be aligned in order to be effective. However, to fully comprehend and manage the knowledge transfer process, individual employees and managers across all levels must be in a position to understand how knowledge leaks, flow or stick in organisations. For this reason, the important theory of knowledge transfer stickiness as conceptualised, introduced and advanced in the strategic management and knowledge management literature by Von Hippel (1994) and Gabriel Szulanski (1996; 2000), should be explained. First of all, they used different terms to imply the same thing.

Von Hippel coined it as 'information stickiness' whereas Gabriel Szulanski refers to 'knowledge stickiness' in the transfer process. The seminal works of these two scholars use the metaphor of 'stickiness' to narrate the difficulties encountered in the process of transferring or sharing knowledge in firms.

Knowledge transfer stickiness is an important theoretical development in the knowledge management literature that guides practitioners and researchers on how organisational knowledge, which is mainly private and tacit and originates in peoples' minds, can be better facilitated and integrated in the organisation. Internal stickiness relates to the complexities of transferring knowledge in the firm (Von Hippel 1994; Szulanski 1996). A key question is what makes knowledge sticky? Therefore, it is a difficult thing to transfer in the organisation. Furthermore, how far can HRM practices be of assistance in minimizing the stickiness of knowledge and enhance its transfer process in a firm. Minimizing knowledge stickiness internally is to ensure knowledge flow freely within an organisation. Von Hippel (1994:430) points out that when information needed for innovative technical problem solving is hosted in one location or by one human agency, it is too costly and sticky. Removing stickiness from knowledge makes it leaky, and therefore, sharable beyond the boundaries of ownership. It is important to unpack different stages in the knowledge transfer process. Szulanski's (1996:28-29) theory outlines four stages of the knowledge transfer process, namely:

**i. Initiation stage**

According to Szulanski (1996:28), the initiation process starts when both knowledge and the need for this knowledge become apparent. Arguably, the discovery of a need triggers a decision-maker to seek alternative solutions and in the process, this leads to the discovery of new knowledge.

**ii. Implementation stage**

This stage manifests when the decision-maker acts on this need. It is argued that during this stage, resources flow between the recipient and the source. In addition, sometimes the source can be a third party. In order for the transfer to take place, it is argued that specific social ties must be established between the source and the recipient of that knowledge. This narration concurs with that of Nonaka (1994, 1995) and others that knowledge is socially constructed and arising

from a dynamic human interactive process. According to Schuller (2014:61), organisational sharing practices may need to be adopted to suit the needs of the recipient and the source to share that knowledge between them. Much of the organisational factors affecting knowledge transfer are discussed in detail later in this chapter.

### **iii. Ramp-up stage**

The ramp-up stage begins once the decision-maker (the recipient) starts using the transferred knowledge from the source. Szulanski (1996:29) posits that at this stage the recipient will experience some difficulties recognising and solving unexpected challenges that may hamper his or her potential to match post-transfer performance expectations. Schuller (2014:16) agrees that at the initial stage it is normal for the recipient to have trouble. However, the performance will gradually improve and eventually rise up to satisfactory performance levels. In essence, this ramp-up stage leads to the knowledge integration process.

### **iv. Integration stage**

The integration process begins when the recipient of transferred knowledge integrate it into his or her organisational routines and achieve better performance results. Once the shared knowledge gradually becomes part of the routines of the recipient, it becomes easily integrated into the organisation. All these stages are inter-locked and embedded in the social interactions of the organisation. Managers, therefore, need to facilitate the creation of shared context and space. Nonaka and Takeuchi 1995; Nonaka and Konno 1998; Nonaka et al. 2000) refer to such shared context and space as the 'ba'. The concept 'ba' is explained further in detail in Section 2.10.

Several barriers within the organisation can hinder knowledge transfer as one of the core processes of KM. Schuller (2014:61) deduces that such barriers manifest themselves as personal and organisational factors acting as inhibitors in the knowledge transfer process. At a personal level, rewards given to staff members can shape the behaviour of individual employees in the organisation. Knowledge transfer, as a social interaction process in an organisation, may be boosted by extrinsic and intrinsic motivational factors (Lin 2007; Gupta & Govindarajan 2000). Individuals must see value in the knowledge sharing to get involved in the process.

The motivation of the knowledge source to share its knowledge may affect the degree of complexity experienced during the transfer process (Szulanski 2004:353). Mixtures of rewards

must be identified as a way of motivating knowledge workers to share their knowledge expertise (Edvardson 2008:556). However, Masterson, Lewis, Goldman and Taylor (2000:739) caution that since knowledge transfer takes place largely in informal interactions, it may prove extremely difficult to measure such sharing behaviours. Martins and Martins (2011) suggest the importance of the right attitudes affecting knowledge sharing behaviours. This source infers that values and attitudes towards knowledge can affect the willingness on the part of individuals to share knowledge. The acquisition of tacit knowledge is largely a constant process of learning and knowing. As such, collaborative, positive learning, innovative and inquisitive behaviours enhance knowledge sharing and retention. Scarbrough (2003:505) concurs with this sentiment by asserting that innovation is the activity of learning and integrating knowledge into action. This implies that in an organisational space where the creativity and creation of new ideas are encouraged among individuals, it could serve to breed a culture of knowledge sharing. Thus, it could break down knowledge stickiness.

Szulanski's years of research on the phenomenon of knowledge stickiness unearth quite a number of predictors of knowledge transfer stickiness (Szulanski 1995; 1996; 2000; 2003). One such predictor of stickiness is the reliability of the knowledge source. It is argued that the degree to which the sharer is perceived to be reliable by a recipient affects whether the recipient can trust the source and therefore rely on such source for knowledge. A lack of motivation on both sides of the transfer process to share knowledge is another predictor of stickiness (Szulanski 1996:34). The recipient may lack motivation to seek new knowledge. Moreover, if the source lacks motivation to support the transfer, there can never be such a process in the first place. Phaladi (2011:103) reveals that the absence of motivation on the side of both the source and recipient is related to the stickiness of knowledge in a public utility company. In other words, the kind of reward system available may serve to facilitate and encourage sources of knowledge to share.

Absorptive capacity (AC), or a lack of it, it is another predictor of knowledge stickiness in organisations. According to Cohen and Levinthal (1990:128), AC is the degree to which an organisation possesses prior-related knowledge and a capacity to assimilate and apply new knowledge. Argote and Ingram (2000:161) posit that the recipient's capacity to absorb

knowledge affects stickiness in the process. Arguably, a recipient with a shortage of absorptive capacity is less likely to recognise a need and the value of seeking new knowledge (Szulanski 1995:438). In addition, a recipient is more likely to be resistant, therefore find it difficult assimilate new knowledge. Relationships at different levels of the organisation can act as sources of knowledge transfer stickiness. A recent study of Szulanski et al. (2016:316) concur with previous studies on the impact of the relationship between the recipient and the source. They infer that if the relationship between the recipient and the source is difficult, it negatively affects the knowledge transfer process between them. There are many other barriers to the knowledge transfer process in the organisation that are worth mentioning.

A study by Chang and Polachek (2004:491) on MNCs reveals that geographical distance and administrative, cultural, political and power dynamics can serve to create barriers, thus serve to perpetuate knowledge transfer stickiness. Power relations, mainly as they manifest themselves through hierarchical types of organisational structures, also affect the stickiness of the knowledge transfer process. The differences in cultural values and belief systems, especially in a diverse or multi-cultural organisation, can create huge stickiness effects in the knowledge transfer process in an organisation (Schuller 2014:61). Low quality social interaction between organisational members due to language barriers, culture and lack of trust, also contribute to stickiness in the knowledge sharing process (Chang & Smale 2013:2405).

South Africa is a multicultural society and some of SOEs in the country have subsidiaries operating in various parts of the country, the continent and the world. As a result, cultural differences and work relationships in these public utilities may be contributing to the stickiness effects in the transfer process. Nevertheless, Chang and Polachek (2004:493) also posit that knowledge transfer is much easier in MNCs where the parent and subsidiaries share similar cultures, though this could be different in some companies. Scaringella (2016:348) seems to agree with Chang and Polachek (2004) because internal knowledge complexities seem to hinder bigger knowledge discovery and transfer activities in many multinational corporations.

### **2.8.3 Knowledge retention process**

A knowledge management process that is closely associated or connected with transferability is known as a knowledge retention process. Martins and Meyer (2012:80) define knowledge retention as a KM process of maintaining (not losing) tacit knowledge that is in the minds of employees and knowing that the knowledge is important to the overall functioning of the firm. Once knowledge is created and shared through social interactions and other processes, it becomes important that it must be retained within the firm when employees leave. How do we ensure that such knowledge remains within the company? To address this question, DeLong (2004:171) advocates for knowledge retention initiatives in the KM philosophy to arrest loss of valuable organisational knowledge due to impending retirements and staff turnover. He argues that as part of such retention strategies, companies need to establish what knowledge is most at risk, build sustained capacity for retention efforts and finally, decide which retention initiatives are of strategic nature to pursue first. Knowledge retention activities facilitate decision-making competencies, reduce costs and preserve organisational memory (Wamundila & Ngulube 2011:1). Therefore, the retention of knowledge helps building organisational capabilities and knowledge resources. Rambe and Mbeo (2017:196) assert that knowledge retention involves strategies for retaining knowledge generated or about to be created in the firm to ensure organisational survival and productivity.

A knowledge retention process is about mitigating risks associated with organisational knowledge loss. The rationale behind enriching and retaining the organisational memory of the firm is to create an enabling environment for people to learn from past success and failures to avoid re-inventing the wheel (Liebowitz 2008). From a knowledge-based perspective, the loss of employees due to turnover, organisational downsizing, employee mobility and retirement decipher into a loss of critical and accumulated organisational knowledge (Phaladi 2011:4). If the RBV and its offspring, the KBV, indeed regard human capital, human resources and organisational knowledge as critical for maintaining competitive advantages in the market, then the knowledge-associated risks with such attrition factors need be properly identified and managed.

From the literature reviewed, several authors advocate for knowledge retention efforts to mitigate knowledge leakages and losses (Rambe & Mbeo 2017; Durst & Ferenhof 2014; Paulsen & Hjertø 2014; DeLong 2004). A knowledge retention process is dependent on and supported by creation and transfer activities in the organisation. In order for companies to be in a better management position to retain knowledge, it is equally important to identify and understand key theories supporting retention efforts.

The literature reveals key two critical knowledge-retention theories (KRT), namely absorptive capacity (Cohen & Levinthal 1990) and protective capacity (Andersén 2012), which are important in the knowledge retention process. The absorptive capacity theory as conceptualised by Cohen and Levinthal (1990) – see the previous section on knowledge transfer – is also worthwhile in the knowledge retention effort. AC is the ability to acknowledge, value and use knowledge from external sources, and integrate that knowledge into organisational processes and routines that facilitate retention activities. At the core of the absorptive capacity theory is the role of prior knowledge as a source of ability for individual employees to assimilate new knowledge (Cohen & Levinthal 1990:129). In other words, AC plays a mediating role in knowledge management, particularly in the retention process. Knowledge assimilation is an indicator of knowledge retained. The ability of organisations and individuals to absorb knowledge is dependent on the openness to sources of knowledge in the broader business environment (Andersén 2012:44). Prior knowledge enhances the learning and assimilation process of new ideas and knowledge (Cohen & Levinthal 1990:129). This means that AC is effectively an assimilative capacity and a knowledge retentive capacity. Paulsen and Hjertø (2014:283) agree that openness facilitates the building of learning behaviours, which in turn helps with the integrating, sharing and retaining of knowledge. Building absorptive capacity needs to be encouraged across all levels of a company, for instance at individual, group, departmental and organisational level.

The protective capacity (PC) theory developed by Andersén (2012) represents an important theoretical development in the KM literature on knowledge retention. In introducing the theory in the mainstream KM literature, Andersén (2012) laments the fact that much of the literature on organisational knowledge has focused most of its attention on knowledge creation, sharing and

absorption with little emphasis on the protection of knowledge resources. Andersén (2012:442) argues if absorptive capacity has been used to understand the acquisition of knowledge assets in the literature on RBV and KBV, then why do we use a specific theory to understand important components of resource-based perspective? The RBV promotes the view that a firm's internal resources and capabilities must be safeguarded to ensure the sustainability of its competitive advantage. According to Andersén (2012:440), such capability is called 'protective capability' to refer to it as the capacity to sustain or decrease the speed of depreciation of knowledge-based resources by preventing it from being identified, imitated, and acquired by competitors. What this source implies is that firms need to invest in building protective capacities to mitigate against the possible loss of knowledge. Some studies advocate for organisational initiatives to protect knowledge from leaking (Durst & Ferenhof 2014; Paulsen & Hjertø 2014; DeLong 2004; Brown & Duguid 2001). They focus on the capacity to absorb knowledge rather to protect capability. PC theory is an important development, largely because HRM has always been focusing on the retention of knowledge workers in the organisation. Retention of organisational knowledge is the domain of KM in the literature and in organisational praxis.

#### **2.8.4 Knowledge application process**

Knowledge needs to be put into good use to be of value. Jackson, Hitt and DeNisi (2003) assert that it is of no use if knowledge is shared but never applied into something. They argue that investments in knowledge creation and acquisition processes will not yield any returns if organisational members do not make a good use of it. Knowledge should be used in the decision-making processes of the firm. According to Becerra-Fernandez et al. (2004:35), knowledge is a vital resource that directly affects organisational performance whenever it is applied correctly to make decisions and execute daily operations. The source posits that knowledge usage is dependent on the availability of knowledge. For knowledge to be made available for use, it means it must be subjected to the process of discovery, capturing and storage. Knowledge application is manifested in the directions and routines of the firm (Grant 1996; Becerra-Fernandez et al. 2004). Organisational routines involve the application of knowledge in the execution of duties and improvement of business processes (Nonaka et al. 2000).



Knowledge-centric reward systems should assist to facilitate the culture of knowledge creation, sharing, storage and use. Knowledge, where possible, must be stored for use and re-use in the form of explicit information. Kumar (2016:3) deduces that the re-use of information saves time, costs and efforts associated with sharing knowledge if it remains largely tacit. The source is of the view that investment in technology for storing knowledge ensures standardisation and reutilization of knowledge. People at different levels of the organisation need to ensure that their decision-making, problem-solving and management praxis incorporate current information and knowledge (Jackson et al. 2003). Ideally, all KM processes must work in synergy to ensure effective and efficient management of organisational knowledge, regardless the form.

The next section discusses the organisational dynamics that may or may not provide necessary support and infrastructure for a proper knowledge management.

## **2.9 Organisational factors affecting knowledge management**

This section provides a micro-foundation analysis of organisational factors enabling or hindering knowledge management processes in organisations. This is done in addition to HRM practices facilitating KM, as was discussed in previous sections.

A review of literature reveals that managing organisational knowledge is proving to be extremely difficult without first dealing effectively and efficiently with organisational climate issues. Such organisational factors hinge on organisational cultural issues underpinning knowledge management strategies or processes. Saifi (2015:167) states that companies that consider their specific organisational culture type are in a better position to plan properly and make informed decisions on the type of KM strategic choices or initiatives to carry. The literature reviewed provides insightful perspectives into how organisational culture and structure, leadership, trust, context and information technology infrastructure can facilitate knowledge creation, application, retention and transfer within firms.

### **2.9.1 Organisational culture**

Organisational culture is about the socio-centric approach to manage organisational knowledge. Organisational culture is regarded as a set of norms, values and belief systems that are shared by employees of the organisation (Gürlek & Tuna 2018; Matošková & Směšná 2017). It forms a critical non-physical infrastructural support for success of knowledge management. Gürlek and Tuna (2018:474) state that organisational culture helps in shaping and guiding the actions and behaviours of the members of an organisation. It is considered an important driver of knowledge management and innovation (Gürlek 2020a; Gürlek & Tuna 2018).

Several researchers propose that KM approaches should fit into organisational culture and that such a culture should support the creation, sharing, application and retention of knowledge (Gürlek 2020a; Matošková & Směšná 2017; Omotayo 2015; Hislop 2013; DeLong & Fahey 2000). Companies need to develop a suitable culture for knowledge management activities and behaviours to flourish. The culture of the organisation could break or facilitate knowledge management processes and behaviours. The study by Gürlek and Tuna (2018) in Turkish tourism companies found that organisational culture has a positive impact on competitive advantage or performance of companies. The study of Teo, Nishant, Goh and Agarwal (2011) and Omotayo (2015) suggest that an organisational behavioural system or culture should be flexible enough to allow for the creation of suitable knowledge-centric behaviours. The implication of this line of thinking is that there needs to be a greater degree of alignment between organisational culture, knowledge management and HRM practices. HR practices also play a role in creating a culture that supports KM processes and outcomes. A knowledge management culture is argued to be a good predictor of knowledge creation and transfer behaviours in organisations (Mason & Pauleen (2003). However, a knowledge management culture does not exist in a vacuum as its processes happen in a broader organisational context. Thus, a knowledge sharing culture takes place in a broader organisational culture.

Companies should consider knowledge management as a serious organisational change process and pay attention to nurturing required knowledge-centric behaviours and culture. Mason and Pauleen (2003:39) also support this perspective by arguing that institutional behaviours and

culture need to undertake a change management process to stay relevant in supporting and building a KM culture. For instance, a study by Chang and Lin (2015:449) on IT companies in Taiwan reveals that results-oriented, loosely controlled and job-oriented cultures have a positive effect on various KM processes in the organisation. The study advocates for the loosening of organisational cultures and control systems. Kathiravelu, Mansor, Ramayah and Idris (2013:121) indicate that a supportive organisational and management culture is a condition and enabler for cultivating knowledge sharing behaviours. However, cultivation of knowledge sharing behaviours needs trust between stakeholders involved in the process. This brings us to the importance of trust issues in KM, as discussed in the section below.

### **2.9.2 Trust**

Trust is an organisational factor that can break or facilitate knowledge management activities in firms. Trust amongst and between colleagues or co-workers across all levels of the organisation can serve as a facilitation tool for knowledge management processes. A study by Rutten, Blaas-Franken and Martin (2016:208), conducted in a Netherland company, reveals that a high level of trust leads to a high level of knowledge sharing behaviours. Knowledge sharing is a process involving two or more parties in the sharing of knowledge. Much of the organisational knowledge resides in the minds of the employees. According to Khesal, Samadi, Musram and Zohoori (2013:499), people do not like the risk of sharing knowledge where there is no trust. They argue that for a firm where the level of trust is low, it will be difficult for that company to ensure maximum use of the brainpower of its members. The willingness to share such a tacit knowledge is dependent on trust. A lack of trust results in knowledge hoarding, whereas a high of level of trust among co-workers enhance knowledge sharing. Phaladi (2011:84-85) share similar sentiments by revealing that a lack of trust among knowledge workers in a public water utility leads to turf protection, which leads to unattractive knowledge behaviours of hoarding knowledge, as opposed to sharing it.

### 2.9.3 Leadership

Like knowledge-oriented organisational culture, knowledge-oriented leadership is a key driver for the success of knowledge management initiatives (Gürlek & Çemberci 2020; Shamim, Cang & Yu 2019; Shariq, Mukhtar & Anwar 2019; Donate & de Pablo 2015). Leadership at all levels of the organisation plays an important role in knowledge management approaches. Knowledge management is about people and people are sources of that knowledge. The RBV and the KBV perspectives view employees and their knowledge as key organisational resources that provide those firms with sources of competitive advantage (von Krogh & Wallin 2011; Grant 1996; Spender & Grant 1996). According to Grant (1996), a knowledge-based theory suggests that companies can demonstrate a more superior performance than their competitors if they leverage on their knowledge resources. Consequently, leadership supporting such a valuable organisation resource is non-negotiable. Leadership plays a crucial role in the successful implementation of strategic KM processes and initiatives such as creation and transfer of organisational knowledge (Gürlek 2020a; Naqshbandi & Jasimuddin 2018; Nonaka 1994; Nonaka & Konno 1998). Several commentators argue that management needs to display knowledge-oriented leadership if knowledge management initiatives are to become a success (Gürlek 2020a; Gürlek & Çemberci 2020; Shariq et al. 2019; Naqshbandi & Jasimuddin 2018). According to Micić (2015:47), for organisations to be successful in KM, the leadership must possess specific qualities and attributes that create conditions for creating, sharing, retaining and applying knowledge. This source emphasises that leaders should display a set of behaviours, values, characteristics, skills and competencies that are knowledge-centric and influences KM processes and outcomes.

From a resource-based view and a knowledge-based view of the firm, leadership (as in human resources) should become the most valuable, rare, and non-substitutable organisational resource. However, the success of such leadership is dependent on whether it is good at embedding the right knowledge-centric behaviours and values. In other words, leaders across all levels of the organisation should create the right organisational environment, commitment and culture that support individual learning, team learning and organisational learning (Micić 2015). Phaladi (2011:90) reveals that 87% of the experts interviewed feel that the management and leadership did not do enough to inculcate a culture of knowledge creation, transfer and retention. This was

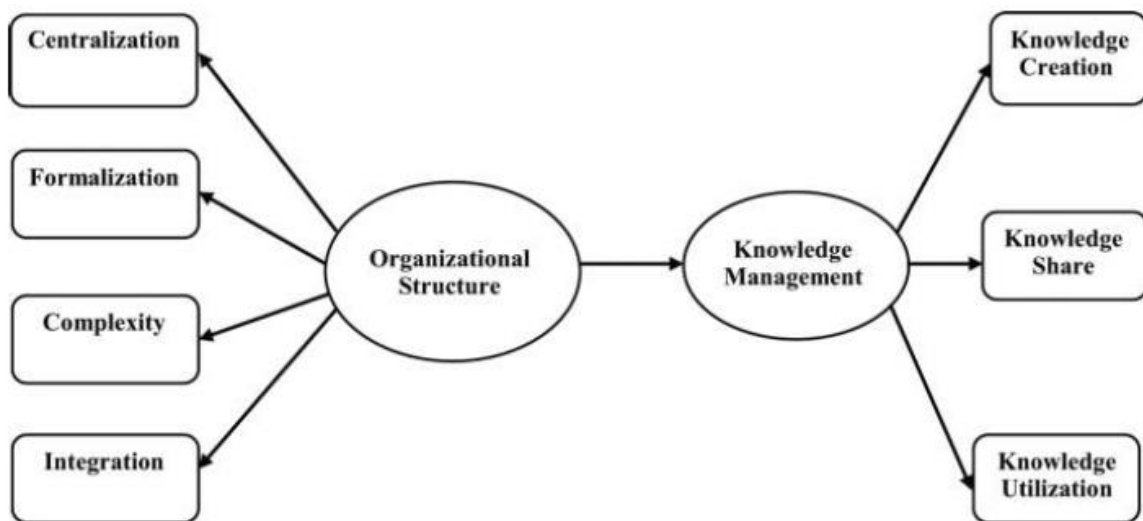
seen as a key inhibitor in nurturing relevant and required KM behaviours and outcomes in those organisations. For organisational knowledge management strategies to be a success, there is a need for a knowledge-centric kind of leadership. Pham et al. (2015:148), in their investigation of the knowledge sharing culture in one of the universities in Vietnam, discovered that knowledge-oriented leadership indeed has a significant positive impact on the knowledge transfer behaviours of individual staff members. Studies by Gürlek and Çemberci (2020), Shamim et al. (2019), Shariq et al. (2019), Pham et al. (2015), Micić (2015) and Phaladi (2011) are consistent with previous studies by Von Krogh, Nonaka and Rechsteiner (2012), Nonaka et al. (2000) and Nonaka and Konno (1998) indicating the importance of the appropriate leadership in nurturing KM processes in organisations.

#### **2.9.4 Organisational structure**

Like trust and leadership (as discussed in previous sections), organisational structure also plays an important role in facilitating knowledge creation and transfer processes. The success of knowledge management depends to a considerable degree on organisational structure (Ayatollah & Zeraatkar 2019; Becerra-Fernandez et al. 2004; Tobin & Franze 2005). Organisational structure can serve to facilitate or inhibit knowledge-based behaviours. Organisational structure affects the configuration of jobs, workflows, relationships and reporting lines (Ayatollah & Zeraatkar 2019; Mahmoudsalehi, Moradkhannejad & Safari 2012). Becerra-Fernandez et al. (2004:42) posit that the hierarchical structure of a company affects how employees frequently interact with one another and consequently how they share knowledge. This source argues that unlike hierarchical structure, flattening organisational structures can help eliminate organisational layers, which stifle the flow of information and knowledge. A study by Tobin and Franze (2005:7) on the organisational structure of a South African company confirms that a matrix organisational structure is a suitable design and it helps facilitate the sharing and integration of information and knowledge – even more so than traditional functional structures.

Mahmoudsalehi et al. (2012:521-522) identified four dimensions of an organisational design that affects knowledge management processes. They are centralisation, formalisation, complexity and integration as illustrated in Figure 10 below. Their findings infer that an organisational

structure, regardless of the type, positively or negatively affects knowledge management. Centralisation and formalisation hinder interactions among employees and reduces the sharing of knowledge across various units of the business. Organisational structures that are less formalised and less centralised but more complex and integrated are more favourable to knowledge management processes. They concur with previous studies done by Tobin and Franze (2005) and Becerra-Fernandez et al. (2004) who explain that organisations that have adopted a flexible, matrix-kind of structure are better equipped to share and integrate knowledge in the firm. However, to be successful in facilitating knowledge management processes, such structures are dependent on a knowledge-oriented organisational culture.



**Figure 10: Interaction of organisational structure and knowledge management**

(Source: Mahmoudsalehi et al. 2012:522)

### 2.9.5 Ba (space) in an organisational context

According to the knowledge creation theory of the firm, the so-called ‘ba’, which is a Japanese word that means ‘shared space’ or ‘context’, can create the enabling conditions for organisational creation and transfer processes (Nonaka & Takeuchi 1995; Nonaka & Konno 1998; Nonaka et al. 2000). The KCT argues that organisational ba provides a space where employees come together to create and share context and knowledge. In a KCC, individuals or groups of employees at all

levels participate in value-creation activities of organisational knowledge, namely knowledge creation, application and sharing. According to Nonaka and Konno (1998:41), value creation in knowledge-creating companies emerges from interaction within shared ba, but such a value creation process is not constrained to the physical ba. The ba could be a physical, virtual or mental space in the value creation process. Whether the ba is conducive or fertile for KM activities, is entirely dependent on whether it can be considered knowledge-oriented or not. All other organisational factors such as trust, leadership, organisational culture, structure and work relationships form part of the ba and knowledge value creation happens within social and organisational context. An example of a ba could be a certain business process context, a topical issue or the so-called communities of practice (CoP) working on a particular topic of interest or subject domain. Kaplan (2010:93) defines a CoP as follows:

“a CoP is a voluntary group of peers, practitioners, and other individuals whose members regularly engage in creation, sharing and learning, based on common interest, to improve their individual performance, the performance of their teams and the performance of their overall organisation.”

This definition captures the key characteristics of a ba advanced by Nonaka and others in the literature on KCT, KCC, KTT and KRT. CoPs are very dynamic and ever evolving largely because there is always attrition of members and new members coming (Mørk, Hoholm, Ellingsen, Edwin & Aanestad 2012). Hislop (2013:158) opines that learning and knowledge development, acquisition and transfer are inherent and important aspects of the dynamics of CoPs. In a modern business environment, CoPs could take place in a virtual space due to a high degree of technology adoption. They are characterised as having a common knowledge, overlapping values, shared identity and space, which creates social conditions and values that underpin KM processes such as creation, sharing and application (Hislop 2013:160). Different types of ba facilitate and support different modes of knowledge creation such as socialization, externalisation, combination and internalization (commonly refers to as the SECI knowledge creation model) in the organisations.

**Table 3: Ba and knowledge creation process**

<b>Type of Ba</b>	<b>Knowledge creation mode</b>	<b>Characteristics of ba</b>
Originating ba	Socialisation	A shared physical workspace where people create and develop shared knowledge and ideas in a collaborative manner
Interacting ba	Externalization	This kind of a ba supports organisational efforts to articulate tacit knowledge. This type of a ba could be physical or virtual where a group of employees can share their experiences to one another through metaphors, storytelling, etc.
Cyber ba	Combination	Cyber ba takes a virtual space within which explicit knowledge can be combined together to produce another type of tacit knowledge in the form of using IT systems or books, manuals, documents, etc.
Exercising ba	Internalisation	This contextual space allows individual employees to develop, refine and familiarise themselves with and apply explicit forms of knowledge. They use it by internalising it and in the process produce new tacit knowledge.

Adopted from a model by Nonaka (2000; 1995)

### **2.9.6 Information technology infrastructure**

Although this study does not believe in focusing too much on a techno-centric approach (hard side) to manage and facilitate knowledge management in the organisation, it acknowledges the important role played by IT in various stages and processes of KM. The proponents of a codification strategy tend to focus on IT as a key enabler of the extraction and codification of



tacit knowledge to change it in an explicit form (Becerra-Fernandez et al. 2004; Boisot 1999; Mason and Pauleen 2003). Becerra-Fernandez et al. (2004:43) postulate the importance of building information technology infrastructure and capabilities to enhance knowledge management activities. Their perspective advances the techno-centric approach into management of organisational knowledge. According to Mason and Pauleen (2003:39), deployment of IT infrastructure, such as in groupware, information systems and other tools, assist in the capturing and transforming of knowledge into organisation resources. An IT tool like expert locator is one such knowledge system that can assist employees and locate experts with specific knowledge in the company. In short, IT addresses the supply-side of knowledge management whose mantra is about getting the right information to the relevant people at a point of need.

Groupware facilitates the sharing of information or documents across the organisation. Much of its role manifests in the management of organisational information. Nevertheless, Nonaka (1994), Nonaka et al. (1998), Argote and Ingram (2000), Szulanski (1996, 2003) and other researchers opine that knowledge is a dynamic human and social process that is sticky in the transfer process. That is why Szulanski et al. (2016), Schuller (2014), Nonaka and Konono (1998) emphasise the role of the organisational context (a ba), social factors and enabling culture in the knowledge transfer process. This approach tends to support a personalisation strategy, which encourages knowledge management activities through a person-to-person interactive process.

## **2.10 Critique of knowledge-based theories of the firm**

Knowledge-based theories, as discussed in detail in the chapter, present important theoretical developments in strategic management, knowledge management and strategic human resource management. Like any key theoretical discovery, they do not evolve without critique, as that is the nature of theory development. The resource-based view and its extension, the knowledge-based view, are the most relevant theories providing some insight into the management and organisational theories and praxis in the current context of knowledge-based competition. Its premise is based on the proposition that the superior performance and competitiveness of a firm stems from its internal heterogeneous resources and capabilities. In addition, for those sources to

act as enablers and necessary conditions for SCA, they ought to be rare, valuable, imitable and irreplaceable (Barney 1991:99). The RBV focuses on three broad firm-specific resources such as physical capital assets, human capital assets and organisational capability assets. Its child, the KBV advances a similar line of thinking though strictly focusing on knowledge-based resources or intangible assets that subscribe to the same RBV logic and VRIN framework (Theriou et al. 2009; Grant 1997, 1996; Spender 1996; Spender & Grant 1996).

Knowledge creation theory and knowledge transfer theory treat companies as systems that produce, share, and integrate knowledge, in fact as knowledge systems (Szulanski et al. 2016; Takeuchi 2013; Nguyen, Neck & Nguyen 2009; Nonaka 1994; Nonaka & Takeuchi 1995; Narasimha 2000; Curado 2006; Davenport & Prusak 1998). However, these knowledge-based theories and many others such as knowledge creation, transfer, retention, absorptive capacity (Cohen & Levinthal 1990) and protective capacity (Andersén 2012) as discussed throughout the chapter, have been heavily criticised for taking a limited approach to the organisation and management practices of the firm (Kraaijenbrink, Spender & Groen 2010; Priem & Butler 2001; Akio 2005). Much of the criticism centres on the proposition and logic of these knowledge-based perspectives, largely because they are too pre-occupied on the internal characteristics of the firm such as the strengths and weaknesses of its resources, while ignoring the external variables, which are a critical part of the firm (Porter 1996; Akio 2005). The RBV does not seek to replace Porter's theory of market positioning (MBV); the intention and its logic is to complement it (Knecht 2014; Peteraf & Barney 2003; Foss & Knudsen 2003; Barney 2001, Barney et al. 2001). In fact, Foss and Knudsen (2003:304) deduce in their study that there is a need for the integration of the RBV with other views on strategy such as market positioning perspectives.

The logic of knowledge-based theories is that human and social capital residing outside the firm is neglected in the firm's nature of strategizing. There are other external variables that are important for the functioning of the firm. Does knowledge-based theoretical logic assumes that knowledge capital assets that reside outside of the organisation in the political, industrial, economic, social and market spheres have less impact on organisational performance? Chisholm and Nielsen (2009:23) are spot-on when answering this question and assert that social capital from key stakeholders outside the firm plays such an important role in the governance of

business relationships. SOEs in South Africa, in as much as they are mostly monopolies, operate in highly regulated markets and governed through relevant ministries. Thus, they cannot ignore social and human capital external to them. According to Phaladi (2011:103), knowledge workers such as engineers, scientists and technologists in a state-owned water utility value outside social capital and industry collaboration networks (Phaladi 2011:103). This source supports previous research by Chisholm and Nielsen (2009), Foss and Knudsen (2003) and Akia (2005) on the importance of knowledge resources of strategic partners as sources of SCA. Most of the time this perspective is insignificant in many of the knowledge-based theories. For instance, absorptive capacity and protective capacity theories in the KBV logic advances the proposition of developing capacity to assimilate outside knowledge and equally protecting its spillovers into outside market environment.

Knowledge-based companies, such as SOEs, cannot afford such a parasitic and limited view on knowledge. This shows a limitation in terms of the applicability of knowledge-based theories such as the RBV, the KBV, the KTT and other emerging and related theories such as protective capacity (PC) in some firms and industries. Knowledge-based theories are argued to be relevant to only large companies with substantial market power (Connor & Prahalad 2002). SOEs in South Africa are of such a nature that they command large resources in terms of physical capital, human capital and organisational capability infrastructure. As such, South African SOEs are unique and relevant cases to study the applicability of resource-based theories. Kraaijenbrink et al. (2010:353) concur that “the rules of the game” in some industries remain relatively fixed. However, they argue that IT industries are very unpredictable in nature. The value and mobility of resources also vary in that space. So, some of the conditions of a RBV for an organisational SCA may not apply in such types of industries. It seems that sustainable competitive advantage is not a given in certain firm-specific resources and capabilities. Not all internal resources of firms can remain non-substitutable and valuable. Human resources come and go in many knowledge-intensive firms (Hislop 2013; DeLong 2004). This challenge poses organisational capacity and knowledge risks, which in turn affect the competitive advantage of those companies. A substantial amount of literature on organisational knowledge loss attribute such a phenomenon to the mobility of human resources (Sandborn & Williams 2017; Durst et al. 2015;

Jennex & Durcikova 2013; Schmitt et al. 2011). Therefore, Barney's framework of firm VRIN resources (Barney 1991) may not hold much water in industries faced with high mobility of employees. Moreover, the RBV is criticised for a lack of empirical evidence to back its assumptions on firm resources and capabilities. Nevertheless, an empirical study conducted by Talaja (2012) conducted in 265 large and medium-sized Croatian firms across all industries tested some of the VRIN variables (valuable, rare, imitable and non-substitutable). Talaja's study reveals substantial confirmation that valuable and rare resources and capabilities assist companies in realising SCA and superior performance over their competitors. Of all these resources, knowledge-based assets are the most strategically significant because they can propel and maintain company-competitive advantage (Blomqvist & Kianto 2015; DeNisi, Hitt & Jackson 2003; Curado 2006; Grant 1996).

Having provided a critique of knowledge-based theories, the next section provides a synthesis of the chapter.

## **2.11 Summary of the chapter**

The mobility of human resources, in particular of knowledge workers' calibre and its resultant risks in the form of organisational knowledge loss, is not a matter that shall be left to the dictates of only one department, whether a HRM or KM unit. Organisational knowledge loss needs a holistic management approach. The literature reviewed in the chapter makes it clear that the success of knowledge management efforts is much dependent on the approach and the nature of the firm's strategy orientation, employees' willingness, context, leadership, motivational factors and other variables. Moreover, the RBV and other knowledge-based theories support the significance of human resources and the management thereof in positioning and protecting organisational capabilities and knowledge resources.

A critique of the literature on knowledge-based perspectives makes the readers mindful of the limitations and applicability of these theories. Although a loss of organisational knowledge gives knowledge practitioners and the like a problem, the seemingly important role of HRM in its management and retention cannot be overemphasised. It is becoming clear and supported by

literature that HRM practices that are knowledge-centric in approach have an important role to play in the management of such knowledge. Knowledge is an important organisational resource for companies in the context and century of knowledge-based competition. As Curado (2006:11) would attest, it presents a unique characteristic that makes it different from physical capital assets and monetary resources as a source of sustainability and superior performance. Unlike these other resources, knowledge does not depreciate with its use, but it rather increases all the time when put to use. For this obvious reason, HRM practices are called upon to play a greater role and help nurture and facilitate organisational culture that breed knowledge-based behaviours.

The next chapter seeks to examine, with the support of relevant literature, the choice and justification of the research methodology and design deployed in the study.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY AND DESIGN**

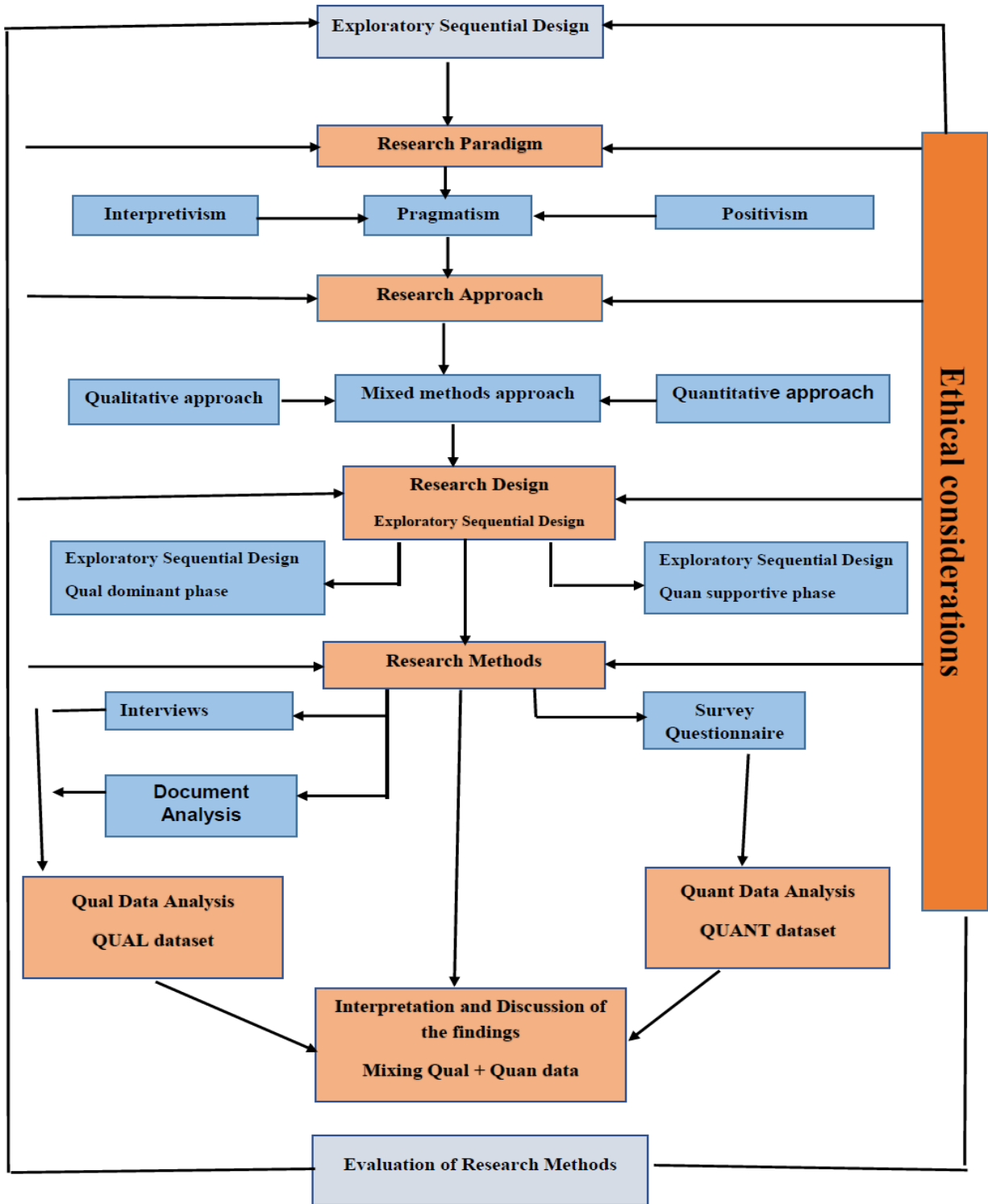
#### **3.1 Introduction**

The previous chapter provided a review of relevant literature relating to organisational knowledge mainly from a resource-based view, with specific attention to the role of human resources practices in knowledge management, core KM processes and organisational factors affecting management of knowledge within firms. The central argument of the preceding chapter is that loss of valuable organisational knowledge due to attrition of human resources as key firm resources threaten the firm's sustained competitive advantage. Nevertheless, this chapter pays attention to methodological perspectives and techniques that are relevant and applied in the study. This is because scientific knowledge creation is very dependent on the research methodology applied (Ngulube 2015b:125). Fraser (2014:52) concurs that methodological issues speak about the approach used in the research process. It is common knowledge that researchers are gatherers and producers of scientific evidence. Therefore, such effort demands the systematic collection of research information through relevant applicable methodological approaches. According to Straits and Singleton (2018:5), this is precisely what research methods are all about. This chapter on research methodology addresses among other key issues, research paradigms or methodological theories, approaches, research designs, research population and sampling, data collection methods, and ethical issues involved in the study. The methodological issues are pertinent in providing answers to the research objectives and research questions as demonstrated in Table 1 in Chapter One of the study.

The philosophical foundation of the study is located in the pragmatism research paradigm. Mixed methods research was chosen as the methodology guiding the design and research process of this study. The research study follows a multi-case study design as an overall research strategy. Exploratory sequential design is a research method design chosen to address the research purpose, objectives and research questions. Sarantakos (2013:30) posits that a philosophical paradigm dictates the type of research methods and techniques at the disposal of the researchers

as well as the motives and objectives of their research. Briefly, a research paradigm chosen for any study orientates the researcher into the most relevant and applicable research approaches and instruments (Ngulube 2015b; Saunders et al. 2016). That is evident in this study because pragmatism, as the research philosophy, guided the researcher into the adoption and use of the mixed method research approach and design.

Figure 11 below presents a road map of the research methodology for this research study. The roadmap as illustrated in figure 11 highlights relevant research paradigms, research approaches, research design, and research methods used in the study.



**Figure 11: A road map of the research methodology for the current study**

(Adapted from Ngulube 2019:88)



### **3.2 Research paradigms**

A research paradigm or worldview provides a frame of thought that guides methods of acquiring knowledge about a research phenomenon. Paradigms serve to offer researchers certain philosophical assumptions that guide a research process (Ngulube 2018; Plano Clark & Ivankova 2016; Punch 2014). Ngulube (2018:8) views “paradigms as basis of the philosophical assumptions made by the researcher”. According to Plano Clark and Ivankova (2016:195-196), such assumptions are beliefs and values about reality including how knowledge is developed. Mhlongo (2018:76) argues that research paradigms raise certain expectations about approaches or methods used in research.

The literature reviewed on research methodology would attest that a paradigm provides a basic positioning to theory and research (Neuman 2014; Saunders, Lewis & Thornhill 2012; Maree 2016). Neuman (2014:96) summarises a research paradigm as a whole system of thinking including basic assumptions and research questions or problems to be resolved in scientific studies. Nieuwenhuis (2016a:55-56) asserts that a paradigm talks to fundamental presumptions taken on faith or beliefs about the nature of reality (ontology), relationships between knower and known (epistemology) and assumptions about methodologies used in a research process. Saunders et al. (2012:128) concur with this assertion by positing that such assumptions actually underpin the research strategy and the methods that a researcher chooses as part of his or her research strategy.

According to Creswell (2009:6), a research paradigm is “a general orientation about the world and the nature of research that a researcher holds”. Creswell (2014:5) reiterates the fact when conceptualising research. We bring our own philosophical assumptions and as such, those assumptions influence the choice of research design, methods and procedures of research we are involved in the process. As a result, the knowledge domain of the researcher, including past research experiences, influence the choice of such paradigms.

Morgan (2008:35) summarises research worldviews as shared beliefs in a scientific community. For instance, the natural science believes research is naturally shaped and guided by a positivism

paradigm, whilst social science researchers subscribe to constructivism. However, positivism, constructivism or interpretivism and pragmatism are three commonly research paradigms extensively discussed in the research methodology literature. These three worldviews are relevant to this study in that pragmatism as a philosophical strand includes ontological as well as epistemological and methodological underpinnings of both interpretivism and positivism. For this reason, it becomes important that ontological, epistemological as well as methodological positions underpinning these research paradigms are discussed, as demonstrated in the next section.

### **3.2.1 The positivist research paradigm**

Positivism is associated mainly with quantitative research methods and helps to orientate researchers into the methodological issues and strategies involved with the use of such research methods. Several authors on methodology stress the fact that research paradigms tell us, the scientific community, what reality is like, what the relationship is like between the researchers and those that are being researched and the methods used for studying the reality or social phenomenon (Punch 2014; Saunders et al. 2016; Neuman 2014).

Saunders et al. (2012:148) assert that there are three means of thinking about the research worldview or paradigm, which is ontology, epistemology and axiology. Positivism is a research philosophy originally rooted in the natural sciences. Hence, Bryman (2012:27) and other methodology authors refer to it as a natural science epistemology. It advances the philosophical position whose view of the nature of reality is objectivism. According to this epistemological view, only objective reality is considered an acceptable knowledge. In other words, the development of (new) knowledge to be acceptable must meet the basic principles underlining a positivist philosophical position. One such principle or assumption is that social phenomena or research problems and their meanings have an existence that is very independent of social actors (Bryman 2012; Punch 2014).

Objectivism is the ontological position adopted by researchers in the natural sciences and many quantitative researchers from the social sciences. According to Bryman (2012:32) and Punch

(2014:17), an objectivist ontological position within the positivism school of thought implies that social issues or problems that confront us on a daily basis are beyond researchers' influence and other actors involved or affected by the research process. What this ontological position means is that the researchers remain outsiders in the creation process of that reality (Plano Clark & Ivankova 2016; Saunders et al. 2016). As such, they are not part of the research context. Adopting an objectivist ontological stand to the research, would mean that the researcher is detached from the actual research context and process. From an epistemological perspective of positivism, the nature of knowledge discovery must be objective (Chilisa & Kawulich 2012). This is because objectivism is what constitutes acceptable knowledge in positivist-oriented kind of studies. The question is how objectivism is maintained in positivist-oriented type of studies? Accordingly, in terms of methodology, positivist researchers use quantitative data collection tools such as questionnaires or surveys and experiments with the aim of collecting statistical data that would lend such data to be more objective, thus acceptable (Saunders et al. 2016; Bryman 2012). Masue, Swai and Anasel (2013:214) indicate that an objective reality must be observed and described through universally acceptable scientific rules and procedures, which are common in quantitative research traditions.

What is becoming apparent from the debate is the fact that positivists adopt the application of natural science principles in explaining a research phenomenon. Thus, it is not surprising that measurements become standard tools that validates the knowledge claims positivists use to explain social phenomenon. Plano Clark and Ivankova (2016:196) agree that positivism is a philosophical position whose main aim is to measure variables to make causal deductions and generalisability about reality. As such, positivist researchers hold the strong view that reality is objective, hence such reality can be objectively observed or discovered by the researchers applying scientific procedures.

Another key feature that guides the philosophical foundation of the research is the concept of epistemology. Epistemology is about ways of knowing (Chilisa & Kawulich 2012; Nieuwenhuis 2016a). Nieuwenhuis (2016a:67) asserts that epistemology is concerned with how things can be known and how such truths or facts can be discovered. This type of studies uses deductive reasoning as direction for theorising and testing predetermined theoretical ideas (Creswell 2014;

Neuman 2014; Leedy & Ormrod 2015; Saunders et al. 2016). As already hinted in the previous paragraph, positivists are of the firm view that knowledge can be discovered using scientific methods or procedures. Positivists believe that scientific methods or universally acceptable rules provide precise and verifiable answers to the questions or hypotheses of the study. It is for this reason that positivist studies use quantitative research approaches that foreground issues of control, generalisability, reliability and validity in the research processes (Plano Clark 2016, Nieuwenhuis 2016a; Pietersen & Maree 2016). Positivist researchers see knowledge as statements of beliefs, or questions or hypothesis that can be tested empirically (Chilisa & Kawulich 2012). Therefore, such hypothesis or questions must be verified, confirmed or disconfirmed by the study using scientific procedures. The source emphasises that knowledge in such type of studies consists of facts that are independent of the values, beliefs and feelings of the researcher.

This brings us to the discussion about relevant axiological issues that guide positivism research studies. According to Saunders et al. (2012:136), axiology is branch of philosophy that studies judgements about value. The values we possess as researchers play an important role in the research process. The positivists believe that in order to achieve objectivity and neutrality in the research process, the use of scientific instruments of collecting data are the only means of maintaining that (Chilisa & Kawulich 2012). Their axiological position is that scientific research must be value free and free from the researcher's influences or biases if objectivity and trust is to be maintained at all times in the scientific inquiry. Since the current study used a mixed method research design, the quantitative research in the second phase followed the dictates found in the positivist research studies. Interpretivism is another research philosophical foundation in social science research and dictated much of the research procedures used in the first qualitative phase of this study.

### **3.2.2 Interpretivism as a research paradigm**

Interpretivism is the opposite of everything that a positivist research philosophy stands for in social science research. This worldview is ontologically, epistemologically, methodologically and methodologically different from positivism. Punch (2014:17) indicates that interpretivism

foregrounds the meanings that people bring to real-life situations including their behaviour in a research context, in which they make sense of their own world. Accordingly, the meanings that people bring to the research process are essential for understanding their behaviours and how they act in certain ways. Therefore, no wonder that subjectivism is the ontological positioning advanced by an interpretivism perspective. According to Saunders et al. (2012:135), subjectivism arises from the view that social problems are created from the perceptions and consequential actions of people. Therefore, it is through social interaction that social problems or research phenomena are in a constant state of revision. Interpretivists view reality as being socially constructed by social actors or participants in the research process (Neuman 2011, 2014; Chilisa & Kawulich 2012). This ontological position differs from the objectivism pursued by positivism-oriented type of studies because it seeks to provide an understanding of reality as others experience it.

Masue et al. (2013:214) posit that qualitative research studies are examples of interpretivism studies that aim to gain a rich understanding by providing an explicit interpretation of a particular case. Therefore, interpretivist studies are good in building a rich picture of a social phenomenon as opposed to positivist studies whose aim is to create a superficial picture of a large population, sample and variables for the purpose of generalisation. Neuman (2011:102) concurs with such sentiment and argues that interpretivist researchers attempt to understand in the most intimate way the feelings and interpretations of the social actors or people being studied and try to understand things or issues through their eyes. For this reason, interpretivists believe the nature of reality (ontology) is mind-constructed, mind-dependent and knowledge-subjective (Chilisa & Kawulich 2012) and as such, social research must be value-bound and value-laden. They believe that as social researchers, we are influenced by our value system, and in the process our values inform the paradigm we choose for research, the choice of the topic, the research strategy and instruments we choose to collect and analyse data and the manner in which we report the findings of the research. That is why, from an axiological position, qualitative social researchers admit the value-laden nature of their enquiries and acknowledge how their values may interfere and affect their neutrality stand. This is precisely because qualitative research is an

interpretative and naturalistic approach to research (Denzin & Lincoln 2005). Such is the approach interpretivism studies use to develop knowledge in the field.

Epistemologically, researchers of an interpretivist approach use inductive inquiry as a direction for theorising in the scientific enquiry process. Unlike with deductive theorizing, which is widely used in positivism research, theory development in interpretivist studies allow researchers to observe the empirical world and reflect on what is taking place (Leedy & Ormrod 2013; Neuman 2011). Neuman (2011:70) asserts that in inductive theorising, researchers begin with a few vague ideas, refine them as they go along the way and then explain them into more precise concepts as they move inductively in the research process. Inductive reasoning is an approach of building theory (Ngulube 2018; Creswell 2014; Saunders et al. 2016). According to Leedy and Ormrod (2013:18), to theorise in an inductive direction. Interpretivists do not start with a predetermined truth or assumption; instead they begin with an observation or general topic moving more into abstract thinking. It is for this reason that interpretivist researchers uses grounded theory, which according to Neuman (2011:70), is a specific type of inductive social theory that is about formulating new theoretical ideas from the ground up instead of testing existing theoretical ideas. Ngulube (2018:7) concurs with Neuman (2011) in that grounded theory is an approach that qualitative researchers use to build relationships between concepts in data produced from scientific inquiry in order to develop a theory. As discussed in the previous section, the testing of existing theoretical ideas using scientific procedures is not the terrain of interpretivism. Interpretivism is more about theory development.

According to Creswell (2014:6), research paradigms play a key role in shaping research methodology. Methodologically, interpretivist researchers do not use a highly structured methodology to ensure generalisability, reliability and replication of the research findings. That is not the place for interpretivism as it rejects an overemphasis on the use of rigid methodology. Saunders et al. (2012:145) argue that researchers subscribing to induction as a theory-development mechanism, should criticise the deduction approach due to its tendency to build a rigid methodology which do not allow other alternatives of explaining what is going on.

As a way of gaining a better understanding of the meanings that social actors attach to research problems, interpretivism studies deploy qualitative research methods using relevant designs such as grounded theory, ethnography and case studies (Creswell 2014; Neuman 2014; Masue et al. 2013). Chilisa & Kawulich (2012) point out that the purpose of interpretative research is to understand participants' experiences because research takes place in a natural setting where such participants make their living. That is why research ethics are critical issues that interpretivism research seek to address throughout the scientific enquiry (Punch 2014; Bryman 2012). According to the nature of interpretivism research, both researcher and subjects are active participants involved in theory or the knowledge development process.

From the above analysis of the two opposing philosophical paradigms, it becomes apparent that the two paradigms view the nature of reality (ontology), epistemology, methodology and axiology from extreme contrasting perspectives and never agree with one another. This is also illustrated in Table 4 below. Aliyu, Bello, Kasim and Martin (2014:90) conclude that ontological and epistemological orientations are incompatible and opposing. Fraser (2014:49) and Bryman (2006:113) characterise this level of disagreements and frictions as “paradigm wars” waged in the field of research. No wonder that pragmatism is in the middle of the continuum and debate attempting to moderate polarisation between the two opposing research paradigms. This brings us to the discussion of pragmatism research philosophy as discussed in the next section below.

**Table 4: Overview of the paradigm differences**

Positivist paradigm	Interpretivist paradigm
<b>Common terms</b>	
Mainstream	Alternative
Quantitative	Qualitative
Objectivist	Subjectivist
Scientific	Humanistic
Experimentalist	Constructivist
Traditionalist	Nominalist
<b>Main features</b>	
Tends to produce quantitative data	Tends to produce qualitative data
Uses large samples	Uses small samples
Concerned with hypothesis testing	Concerned with generating theories
Data is highly specific and precise	Data is rich and subjective
The location is artificial	The location is natural
Reliability is high	Reliability is low
Validity is low	Validity is high
Generalises from sample to population	Generalises from one setting to another
<b>Methodologies</b>	
Cross-sectional studies	Action research
Experimental studies	Case studies
Longitudinal studies	Ethnography
Surveys	Feminist perspective
Data-base analysis	Grounded theory
Meta-data analysis	Hermeneutics
	Participative enquiry

Source: Fraser (2014:53)

### 3.2.3 Pragmatism as a research paradigm

Flowing from the preceding section on the raging philosophical battles, perhaps researchers need to ask the following question: How do we create a cooling-off space or peace period for the raging paradigms wars, and why? Can we, as researchers, really avoid them at all? Pragmatism



offers an alternative philosophical foundation (Creswell & Plano Clark 2018; Saunders et al. 2016; Ngulube 2015a; Punch 2014; Creswell 2010). It rejects the incompatibility thesis, and claims that quantitative and qualitative methods are compatible (Ivankova, Creswell & Plano Clark 2016). It is for this reason that the study deemed it fit to follow pragmatism as a guiding philosophical foundation to address the research problem.

According to earlier research (Johnson, Onwuegbuzie & Turner 2007; Bryman 2006; Onwuegbuzie & Leech 2005), pragmatism research focuses on a combination of positivism (quantitative research) and interpretivism (qualitative research) as epistemological, ontological, methodological and axiological positions in a research process. According to Onwuegbuzie and Leech (2005:383), pragmatism, unlike positivism or interpretivism, allows researchers a greater degree of flexibility in their scientific procedures. Such a level of flexibility enables researchers to address a variety of research issues or questions that arise during the research process. Creswell (2014:10) contends that this is because pragmatism arises out of actions, situations and consequences as opposed to the conditions found in positivism. Morgan (2008:51) views pragmatism as a new guiding philosophy in the social science research methods for advocating research work, which mixes qualitative and quantitative approaches. Creswell (2014) and Morgan (2007) summarise the features of the pragmatism paradigm as follows:

- Pragmatism as a worldview does not subscribe to only one system of philosophy and one nature of reality. According to Creswell (2014:10), mixed method researchers approach reality by depicting principles from either qualitative and quantitative assumptions or beliefs in the scientific inquiry process.
- In pragmatism research, the degree of flexibility is high, which gives individual researchers a freedom of choice.
- Pragmatists do not hold a strong view that the world is an absolute unity. Creswell (2014:11) believes that it is for this reason that researchers involved in mixed method research have more than one research instrument for collecting and analysing data. In other words, they do not subscribe to one particular research approach, whether qualitative or quantitative. They accept an incompatibility thesis, whilst in the process

acknowledging that strengths and weaknesses inherent in positivist and interpretivist studies (Creswell & Plano Clark 2018).

- Knowledge is constructed or discovered through researchers' use of qualitative and quantitative research data. This level of integration makes it possible to develop a better picture of a research phenomenon.
- The paradigm opens the door for researchers to use multiple perspectives or methods, different epistemologies, different assumptions, different axiological stands, different types of data and different analyses. In other words, it looks at a research phenomenon from multiple perspectives.
- Pragmatists deploy strategies such as concurrent, sequential and transformative designs as part of investigating social phenomena (Ngulube 2020; Creswell & Creswell 2018). The designs are unpacked later in the section on mixed method designs.

Pragmatism arose from epistemological, ontological, axiological and methodological differences and raging paradigms wars in the positivism versus interpretivism debate in the literature (Ngulube 2011, 2015; Fraser 2014; Bryman 2006; Johnson & Onwuegbuzie 2004). Johnson and Onwuegbuzie (2004:17) contend that researchers should endorse a paradigm because it can build bridges between existing and contrasting philosophies. Ngulube (2015b:127) considers pragmatism as a methodological pluralism created by tensions in the interpretivist and positivist epistemologies. The aim of the philosophy is to bridge confusions and gaps with extant philosophies. Therefore, the methodology for pragmatist philosophy is mixed methods research (MMR) (Ivankova 2015; Creswell 2014; Ngulube 2015a; Creswell & Plano Clark 2011; Johnson & Onwuegbuzie 2004). MMR is a research methodology offering attractive benefits that provide a comprehension of research problems in totality and from different perspectives (Ivankova 2015; Creswell & Plano Clark 2011; Creswell 2010). According to Tashakkori and Teddlie (2010a:9), a pragmatist methodology makes a good appeal in the sense that it can concurrently speak to exploratory and hypothetical questions in a research study. However, authorities in the field caution researchers to understand that like all other paradigms, pragmatism and its methodology (mixed methods research) have their own deficiencies (Tashakkori & Teddlie 2010b; Denzin 2012; Johnson & Onwuegbuzie 2004).

Ontologically speaking, pragmatism philosophy is different from the other two opposing paradigms because the researcher takes multiple views that are deemed attractive to address the research purpose and question(s). According to Saunders et al. (2012:149), the research question is the most central determinant guiding the research, either epistemologically, ontologically or axiologically. Therefore, pragmatists acknowledge that there are many different ways of building reality and doing research.

Epistemologically, what constitute acceptable knowledge, according to pragmatists, is either or both observable phenomena, and subjective meanings that can constitute acceptable knowledge, dependent on the research question (Punch 2014; Saunders et al. 2016). Biesta (2010:112) concurs that pragmatist researchers can construct knowledge through the integration of action and reflection. That is why they believe in paradigm pluralism as the starting position in knowledge development. Researchers need to think pragmatically by using mixed and multiple methods to gather information to address research questions (Morgan 2007). They contend that there can never be a single point of view that can give the entire picture of social phenomena and as such, we should look at the entire research picture from multiple realities. That is the reason why they use multiple methods to address research questions from multiple perspectives. The researcher's judgment and values play a central role in interpreting results, therefore, pragmatists adopt both subjective and objective views (axiological views) (Saunders et al. 2012:140). Concisely, it is so accommodative of the values brought in the research context.

The central idea behind pragmatism is to embrace epistemological and ontological concepts or principles associated with both positivism and interpretivism. According to Tashakkori and Teddlie (2003:20-21), researchers should instead focus on what works in getting the research questions resolved. Thus, the research question(s) is the central focus than the approach or the worldview underlying the scientific method. The second thing that a researcher should focus on is to make certain decisions regarding the use of either qualitative, quantitative or mixed methods to answer the questions being pursued in the study (Punch 2014; Tashakkori & Teddlie 2003). Pragmatism approaches knowledge construction through a process called abductive reasoning.

Saunders et al. (2012) define abduction as “research approach involving the collection of data to explore a phenomenon, identify themes and explain patterns, generate a new or modify an existing theory which is subsequently tested”. It is apparent from the definition that an abductive approach embraces the core features of inductive and deductive reasoning as a direction for theorising for pragmatists. Suddaby (2006:639) contends that in abduction theory construction a researcher moves between induction (qualitative) and deduction (quantitative) approaches. An abductive approach does so by moving back and forth by combining the two modes of reasoning. In other words, new ideas develop through integration of the two approaches. Pragmatists use abduction as the direction for theorising in research; they develop and test theories as part of a knowledge construction process (Punch 2014; Saunders et al. 2016; Suddaby 2006). This is evident in the way they argue for the research questions or problems to be approached from mixed and multiple methods.

After having articulated various philosophical underpinnings informing the choice of pragmatism as the guiding philosophy behind this study, it was equally important for the researcher to articulate the relevance of the choice of the paradigm in this research study. The phenomenon of organisational knowledge loss and its management praxis is a complex issue in the knowledge management literature and in firms. Moreover, HRM practices are not playing a critical role in facilitating organisational knowledge management in the knowledge economy (Bordeianu & Buta 2015; Phaladi 2011; Vaiman & Vance 2008). Ngulube (2015a:3) contends that complex research issues require multifaceted designs and methods. It is common knowledge that it is caused by multiple variables (Sumbal et al. 2017; Eckardt et al. 2014; Durst & Wilhelm 2011; Phaladi 2011), thus warranting the investigation of HRM practices into organisational knowledge management as explained in Chapter One and Chapter Two. The complex research problem requires that the researcher explore it by using multiple methods (Ngulube 2013; Creswell & Plano Clark 2011). Therefore, a pragmatism philosophy became researchers’ choice due to its methodological pluralism (Ngulube 2015a).

In exploring the research questions, the study set out to address the research phenomenon from multiple epistemological positions. Thus, the study embraced multiple paradigms to answer the research questions and were suited for the research problem. Given the complexity of the

phenomenon of organisational knowledge loss and its management in organisations from both HRM and KM perspectives, the researchers considered pragmatism research philosophy as the perfect fit to guide the development of knowledge in this field. The study adopted an abductive approach to explore the research phenomenon through interviews in the qualitative strand, and then tested the theory generated from the first phase through a questionnaire in the quantitative strand. This is largely because the study embraces and acknowledges that either positivism or interpretivism is a perfect paradigm to investigate complex social phenomenon in organisations. It did so by combining their strengths whilst minimising their weaknesses in the study. Ngulube (2012:128) mentions that the rise of pragmatism as a ‘third research worldview revolution’ emphasises the type of scientific research that blends the philosophical, epistemological, ontological, axiological and methodological underpinnings of the positivist and interpretivist paradigms in the research process. The source argues that such a type of blending or mixing serves to ensure a better integration of qualitative and quantitative research analysis in research. Pragmatic research guides how the research problem, research objectives and questions of the study are addressed. In other words, it orientates the research strategy of this study.

The next section discusses research approaches and provides motivation for the application of mixed methods research for the study.

### **3.3 Research approaches**

Depending on the nature and the purpose, and the aim and objectives of the study, research in the social science domain can deploy either qualitative, quantitative or mixed method approaches. Mixed methods research is a suitable methodology when a study hinges on the key characteristics of both qualitative and quantitative research (Creswell & Plano Clark 2018; Morgan 2014, 2013). Thus, it becomes imperative that the researcher unpack their key features and philosophical foundations underpinning their choice and application in social science research. An understanding of their salient features hones the reasoning behind the choice of a MMR approach as a better alternative for investigating the research problem of the study. Thus, they are discussed in the next two sections, starting with a discussion on qualitative versus quantitative approaches, followed by a mixed method research discourse.

### **3.3.1 Qualitative versus quantitative research approaches**

The previous section on various philosophical foundations underpinning or informing the nature of research, has shown that such paradigms guide the nature of the methodology or approach followed in the scientific inquiry process. The focus of this section is to provide an understanding of the differences between the two extreme research traditions, namely qualitative versus quantitative research cultures. It is emphasised in the literature that both approaches are scientific research methods in their own right (Neuman 2014; Johnson & Onwuegbuzie 2004). The fact that they are different and uses different approaches to research, does not make either of them better or worse than the other. This is also illustrated in Table 5 below. This table shows that qualitative and quantitative research designs differ in the way they approach research problems or subjects in the scientific context or process.

A qualitative research approach can be viewed as a class of research where researchers attempt to provide a rich picture or understanding of a research phenomenon in its natural settings, whereas quantitative research is value-free and the researcher is detached from those that are researched (Masue et al. 2013; Chilisa & Kawulich 2012; Mahoney & Goertz 2006; Johnson & Onwuegbuzie 2004). In other words, a quantitative research approach studies a social phenomenon in a controlled environment, whilst qualitative research seeks to understand the social world or reality from the point of research participants (Masue et al. 2013:212). Hence, contextual understanding is an important characteristic of qualitative research. It is for this reason that Johnson and Onwuegbuzie (2004:20) posit that qualitative research is beneficial for studying a complex research problem and a limited number of cases in depth since it provides rich individual case-based information.

Philosophically, qualitative approach is seen in the methodology literature as the second alternative research movement after the quantitative research movement. Moreover, from a philosophical perspective, a qualitative approach makes use of interpretivist methods as a system of philosophy. In contrast, a quantitative research approach uses positivism as a system of philosophy (Punch 2014; Masue et al. 2013). Methodologically, qualitative research is regarded a methodology for interpretivist-oriented studies. Interpretivism is the epistemological position

that is concerned with how researchers build an understanding of how humans beings make sense of their own world (Saunders et al. 2016). Such an understanding or knowledge is developed through interpretation or meanings because the world is formulated and supported by people through action and interaction. In other words, knowledge is developed through an understanding arising from the interpretation processes of social reality. Ngulube (2018:6) concurs that the theory or knowledge development is done inductively and it is used deductively in quantitative methods and abductively in mixed methods studies. Hence, research context is an important feature of a qualitative research product or study. It is for this reason that qualitative research methods are recognised to be data enhancers whereas quantitative research is seen as a data condenser in that it seeks to condense data in order to see the bigger picture (Neuman 2014). According to various commentators (Punch 2014; Neuman 2014; Bryman 2012; Saunders et al. 2016), qualitative research uses induction as its logic of inquiry whilst quantitative research uses deductive reasoning as an approach to theorising.

According to Creswell and Creswell (2018:11-14), experimental surveys and longitudinal designs are types of research designs used in quantitative research. In contrast, narrative, phenomenological, grounded theory, ethnography and case studies research designs are the most common research designs and interactive studies found in qualitative research (Creswell & Creswell 2018; Nieuwenhuis 2016c; Maree 2016; Punch 2014). A quantitative research approach differs from a qualitative approach because it seeks to measure objective facts (Neuman 2014; Masue et al. 2013). Thus, statistical analysis and measurements become key features in data analysis. It seeks to provide a measurement of causation effects and generalisability of the results (Plano Clark & Ivankova 2016). In the process, it reduces the analysis of the research questions or hypotheses phenomena or research subjects into statistics or numbers. Hence, it is good at testing theory as opposed to developing it (Saunders et al. 2016). Creswell and Creswell (2018:17) assert that in quantitative research, the researcher tests theory by first formulating hypotheses and then collecting data to either support or refute the hypotheses. Therefore, it is accused of lacking an in-depth understanding or providing a rich picture of the phenomenon under the study. In contrast, a qualitative research approach develops theory whereby the researcher is fully involved in the research process and seeks to formulate meanings of the

research phenomenon from the viewpoint of research participants. Punch (2014:119) emphasises that this type of research is undertaken through an intense interaction with a field or real life situations as opposed to in a highly controlled environment.

**Table 5: Qualitative versus a quantitative research approach**

Criteria	Qualitative research tradition	Quantitative research tradition
Orientation/view	Interpretivist: seeks to gain a deep understanding and provide explicit interpretation of a social phenomenon or a particular case (it is thus, case-oriented).	Positivist: seeks to provide a superficial description of a large sample of population and variables for the purpose of generalization (hence, variable-oriented).
Nature of reality and how it is constructed (Ontology)	Existence of multiple realities /perspectives. Reality is socially constructed and meaning is embedded in the context of socio-cultural values and institutions (context-specificity).	Existence of one objective reality that can be observed and explained through properly organized scientific procedures (universality).
Knowledge & how it is acquired (Epistemology)	Being interpretive, qualitative research tradition accepts the multiple social constructions of meaning and knowledge. Truth is relative; meaning that ultimate truth Knowledge is usually value-laden and drawn from interpretation of what is observed.	What is accepted as 'knowledge' is something that has been directly observed by the senses; and it is theory-neutral &value-free. Objective knowledge (i.e. facts) can be gained from direct observation or experience, but is not perfect. Theories, hypotheses/assumptions, background knowledge and values of the researcher influence observations.
Approach and purpose of research	Inductive approach: seeks to explore, describe, understand, explain, change and/or evaluate. Explanation of social phenomena is approached through analysis of the frames of meanings of social actors obtained from everyday concepts/meanings/accounts. Findings are specific to time and place.	Deductive approach: Formulation & testing hypotheses; General laws and theories guide explanation and prediction. Statistical generalization of the results is possible
Guide to inquiry	No clear research question and hypotheses. Inquiry is guided by a broad research question that is refined as analysis continues.	There is an explicit research question and hypotheses that are specified right at the beginning of the study.
Participants/subjects & relationship with researcher	Research participants/subjects are active and participate in constructing reality /meaning with the researcher.	Subjects are passive. The researcher is detached and always strives to be objective to avoid bias.
Measurement & data	Interpretation of words (verbal or textual) and meanings to gain understanding of phenomena under study is the key tenet of this tradition. It refers to the what, how, when and where of a thing, its essence and atmosphere. Analysis is characterized by 'thick' descriptions &explanations	Measurement: standard instruments (validated) are used. Measures obtained using indicators of concepts and data quantified and analyzed numerically through statistics. It refers to counts and measure of things. Analysis is characterized by 'thin' descriptions/ explanations

Source: Masue et al. (2013:214)



Based on the above-mentioned arguments, it is apparent that both these two research approaches differ in every aspect, be it philosophical, ontological, epistemological, axiological or methodological. Such level of disagreement has become what is characterised as the incompatibility thesis and paradigm wars in the literature (Morgan 2014; Teddlie & Tashakkori 2012; Johnson & Onwuegbuzie 2004), largely due to the clash in their philosophical and methodological orientations. As a result, mixed method research emerged in the literature and it rejects the incompatibility thesis by adopting a pragmatist approach that advocate for the mixing of qualitative and quantitative research approaches and their techniques in a single research. Mixed method research, more importantly its application in the study, is discussed in detail in the next section.

### **3.3.2 Motivation for mixed methods research approach**

The methodology of pragmatism is mixed methods research. Mixed methods researchers believe in paradigm pluralism (Teddlie & Tashakkori 2012). Their ontological position is that reality is complex and manifold. A mixed methods research approach is the methodological design for a study adopted with the aim of unpacking the complexity underlying knowledge loss and its implications for the role of HRM practices in an organisational knowledge management praxis. Pragmatists advance the argument that both qualitative and quantitative research methods are compatible, therefore their combination in a single research study is to the benefit of research (Ivankova et al. 2016; Ngulube 2015a). This research looked at this phenomenon from different angles, which is from HRM and KM perspectives. The choice of the approach was informed by its capabilities to explore research problems and questions from multiple perspectives using multiple methods (Creswell & Plano Clark 2011). In the literature, several methodologists have praised mixed methods research as the better approach to secure an in-depth understanding of social phenomena (Plano Clark & Ivankova 2016; Creswell 2014; Denzin 2012; Creswell & Plano Clark 2011). Punch (2014:303) contends that the rationale for the choice of MMR is that it offers researchers flexibility to blend the strengths of qualitative research with the strengths of quantitative research while compensating for the weaknesses of each approach in a single study. However, Johnson and Onwuegbuzie (2004:18) caution that researchers must first understand the relevant features of qualitative and quantitative research. Key features associated with qualitative

research are inductive reasoning, exploration, discovery, theory generation, and researchers are fully immersed in the data collection and analysis. Characteristics of a quantitative research approach are in fact the reverse of the characteristics of qualitative research because they focus on deduction as a direction for theorizing, confirmation, theory testing (hypothesis testing), explanation, measurement or prediction, generalisation, and standardising data collection instruments, with researchers fully detached (Masue et al. 2013; Johnson & Onwuegbuzie 2004).

It is important to discuss the specific grounds or reasons for the use of MMR in one's study because the reasons behind the choice differ from one study to another. Plano Clark and Ivankova (2016:81) assert that researchers choosing the application of MMR in their studies must be in a position to make clear arguments for and reasons to address their research problems and purposes because the rationale helps to legitimise MMR as a scientific approach (Creswell & Plano Clark 2011). Many grounds or reasons do exist in the literature (Creswell & Creswell 2018; Creswell 2015; Ivankova 2015; Ngulube 2013; Ventakesh, Brown & Bala 2013, Bryman 2012; Creswell & Plano Clark 2011; Greene 2008; Bergman 2008; Bryman 2006). Much of these studies base and expand their reasoning for the use of MMR on the seminal work of Greene, Caracelli & Graham (1989:255) that established triangulation, complementarity, development, initiation and expansion as five key reasons advanced in mixed methods studies. However, for the purpose of this study, only the reasons speaking to the specific arguments in support of its application in this study are addressed.

*Complementarity* is one such rationale for the use of mixed method research to support the triangulation of both qualitative and quantitative research methods to generate a more informed and complete picture of the research problems and questions (Plano Clark & Ivankova 2016; Morgan 2014, Ventakesh et al. 2013; Kitchenham 2010; Teddlie & Tashakkori 2009; Greene 2007). Bryman (2012:635) argues that triangulation is relevant in MMR in order to establish whether the quantitative and qualitative findings support each other. Triangulation pulls together the research results from different research methods in a single research study. Triangulation also offers the researcher the opportunity to compare the findings from both quantitative and qualitative data collected in the scientific inquiry process. In this way, the mixed methods approach is applied in the scientific process to offer complementary views about the same

research problem. For instance, Ventakesh et al. (2013:6) illustrate that in a triangulation process, a qualitative study can be used to offer additional understanding about the findings of the quantitative research phase, or vice versa. In this way, it allows the researcher to look for corroboration, convergence and correspondence of findings or evidence of data collected from different approaches (Greene, Caracelli & Graham 1989). Plano Clark and Ivankova (2016:85) point out that triangulation is developed to obtain inferences that are more valid by comparing or contrasting research results.

*Complementarity* in the process assists mixed methods researchers to make conclusions that are more meaningful and complete by using both quantitative and qualitative research methods to collect the data with the aim of enhancing coverage and clarifying the complexity of the research phenomenon. In other words, the complementarity logic in mixed method research is that by combining two known methods, the researcher uses the results from one method to explain, enrich or clarify the results from the other method used in the study. According to Kitchenham (2010:563), complementarity logic in the MMR process helps researchers to look for overlapping and different aspects of a research problem. This reasoning fits well, and in fact helped the researcher to navigate the complexity of the research phenomenon in this study.

*Completeness* is another key reason to use mixed methods research. According to Bryman (2012:637), MMR offers more complete answers to the research questions. The rationale that was advanced by Bryman (2012:637) was also relevant to the current study because it offered completeness by including data from both qualitative and quantitative approaches in the process to provide a complete insight into the research phenomenon, purpose and questions. Providing a more complete account of the research problem and questions offered a better explanation, enrichment, illustration, corroboration, and clarification of the data or findings from one approach with data and findings from another research approach (Ivankova 2015; Bryman 2012; Greene et al. 1989).

*Development* drives the main purpose of and reason for MMR application in the study. Greene et al. (1989:267) assert that one research method or approach must be first applied to the investigation of the phenomenon so that the results from that are then used to develop the

instrument or inform the analysis for the other method. The developed instrument can then be tested in a representative sample. Bryman (2012:634) agrees with the assertion by Greene et al. (1989) in the sense that the development character of mixed methods research aims to use the results from one approach to develop or inform the other approach. In this study, the findings from the qualitative research method were used to guide the development of the instrument (questionnaire) in the second (quantitative) phase of the study. Thus, the development rationale is critical and helpful in research studies because it provides a better understanding of the research phenomenon and offers comprehensive answers to the research questions (Ventakesh et al. 2013; Bryman 2006).

*Initiation* is another rationale guiding the choice and application of mixed methods research. It is about the discovery of paradoxes or contradictions, new perspectives discovered in the scientific process, recasting of questions or findings from either qualitative or quantitative studies with questions or results from another (Greene et al. 1989). This was also the case in the current study.

The *expansion* attribute of the mixed methods approach provides another good reason for its use. Ventakesh et al. (2013:6) posit that MMR designs are used to expand upon the understanding obtained in a previous strand in the research process.

Another rationale for the application of mixed methods research is that MMR provides *diversity* in research (Ventakesh et al. 2013; Bryman 2012), thus allowing divergent views to emerge on the same phenomenon from different lenses. It was therefore another reason why more than one method was important for the investigation of the complex phenomenon of organisational knowledge loss from different angles. MMR is used for the purpose of confirmability and credibility (Bryman 2012; Creswell & Plano Clark 2011). In order to ensure the confirmability and credibility of findings and conclusions, MMR designs are used to examine the credibility of the findings obtained from one method by another method. This process entails the application of qualitative data obtained from a qualitative research approach strand to generate hypotheses and using a quantitative research instrument, for instance a questionnaire, to test them in a single

research study (Bryman 2012:634). The confirmation or rejection of the findings by another subsequent method enhances the degree of credibility of the findings.

Having articulated the rationale behind the application of mixed methods research for the current study, it is equally important that the audience understands the strengths and weaknesses inherent in such types of research. The next section discusses these issues.

Johnson and Turner (2003:299) assert that a good understanding of the strengths and weaknesses of the two approaches puts a researcher in a better position to mix the two research methods. The source argues that these two research methods should be blended in such way that they complement each other. According to several mixed methods researchers like Creswell and Plano Clark (2018), Ivankova (2015), Ngulube (2013), Tashakkori and Teddlie (2010a), Johnson and Onwuegbuzie (2004) and Johnson and Turner (2003), such level of understanding is the guiding principle for the use of mixed methods research. Ngulube (2013:11) contends that the acknowledgement that all scientific methods have strengths and limitations leads to the emergence of mixed methods research. As a result, MMR is characterised as a mediator between the two methodological extremes or as a rallying point for the integration of the two perspectives (Teddlie & Tashakkori 2010a:16; Bryman 2008a).

In so much as it was important to outline the key features of qualitative and quantitative research approaches in the previous sections, it is equally critical that the key characteristics of MMR, as a methodology for this study, are discussed. First, it is important to understand what mixed methods research is and secondly what it is not. Creswell (2015:2) defines MMR as follows:

“an approach to research in the social, behavioural, and health sciences in which the investigator gathers both quantitative (closed-ended) and qualitative (open-ended) data, integrates the two, and then draws interpretations based on the combined strength of both sets of data to understand the research problems”.

Plano Clark and Ivankova (2016:4) concur with the definition and view MMR as “a process of scientific inquiry in which researchers integrate qualitative and quantitative methods of data collection and analysis for a better understanding of a research purpose”. What is apparent from

the two sources is that research purpose and questions are integral components of mixed methods research. This is because pragmatists believe that the research question is more important than either the approach they use or the underlying philosophy that informs the method (Ivankova 2015:17). From the literature reviewed on MMR, the following emerged as core characteristics of the research approach:

- An acknowledgement that the complexity of research phenomena warrants multiple research designs and methods (Ngulube 2013; Bryman 2008b).
- Gathering and consideration of quantitative and qualitative data in response to research questions (Creswell 2015; Tashakkori & Creswell & Creswell 2018).
- Recognition that blending both qualitative and quantitative research provides a better understanding or richer picture of the problems than each approach on its own (Ngulube 2013; Creswell 2015; Plano Clark & Ivankova 2016).
- Use of rigorous qualitative and quantitative methods (Creswell 2015).
- Integration of quantitative and qualitative data using a specific type of MMR design and interpretation of this integration (Creswell 2015; Creswell & Plano Clark 2011).
- Focusing on a research design within a paradigm or theory (Creswell 2015).
- The ability to resolve research questions that other research strategies cannot solve. Therefore, it offers researchers the possibility of concurrently generating and testing theory in the same study (Ngulube 2013).
- MMR is more complex than a purely qualitative or quantitative research since it requires knowledge of both methods (McKim 2017; Bryman 2008b).
- MMR is characterised as methodological eclecticism, embracing paradigm pluralism. Thus, emphasising diversity at all levels of the research study (Venkatesh, Brown & Bala 2013; Teddlie & Tashakkori 2012).
- It rejects the incompatibility thesis linked to traditional methodologies, thus emphasises is put on continua rather than a set of dichotomies (Morgan 2018; Ivankova, Creswell & Plano Clark 2016; Teddlie & Tashakkori 2012).

Based on the strengths of the character of mixed methods research; the researcher is of the firm belief that its deployment provided a deeper meaning of the research problem in question. Moreover, MMR has a very limited adoption or use in knowledge management studies (Ngulube 2020). Despite KM having an interdisciplinary character, Ngulube (2015:132) reveals that out of 303 articles published in *Journal of Knowledge Management* between 2009 and 2013 only two articles made use of an MMR approach. The researcher hopes to address the seemingly gap or rather a limited application of MMR in the KM literature to study organisational knowledge problems.

A study conducted by McKim (2017:213) reveals that MMR passages were found to have applied rigorous methods, newer history and giving readers a better understanding of the phenomenon. The empirical findings seem to concur with similar studies that argue that the value of mixed methods research lies in its application of rigorous qualitative and quantitative procedures (Creswell 2015; Ngulube 2013). However, like any other research methods, MMR does not exist without limitations.

Ngulube (2013:11) acknowledges that all research procedures have their own strengths and limitations. Similarly, mixed methods research designs can never be without doubters. Caruth (2013), Creswell (2011) and Cronholm and Hjalmarson (2011) outline the scepticism in the literature as follows:

- i. MMR designs can prove to be difficult for a single researcher especially when both qualitative and quantitative designs are used or mixed simultaneously in one study. In such circumstances, the researcher may need to deploy additional resources.
- ii. MMR designs are time-consuming and can prove too expensive, especially when concurrency is priority.
- iii. The need for the researchers to master multiple methods is a serious challenge, especially for novice researchers. Creswell (2011:13) posits that the researcher needs to be skilled or obtain skills in several methodological areas such as in qualitative, quantitative and MMR designs.

- iv. They do not exist without critics. Methodological purists are very sceptical of MMR designs because they believe that research should either be qualitative or quantitative and that there should not be mixing of the designs into a single research.
- v. Convincing other researchers of the value of mixed method research designs may prove to be a challenge. According to Creswell (2011:15), other researchers may reject MMR on the basis that there is no time to learn a new design to scientific inquiry and/or some may reject it based on philosophical grounds due to contrasting ontological and epistemologically views pursued by the two worldviews.

This section of the study has, through the review of relevant literature on MMR, articulated specific reasons as to why the research selected this particular application of the research approach as well as key attributes and doubts surrounding such decision. Before discussing the actual research designs chosen as a strategy for the study, it is significant to advance to a discussion of a general nature on the type of designs involved in mixed methods research. Such an approach is articulated in the subsection below and helps to build a snapshot of the actual MMR design to be discussed later in the research design section.

### **3.3.3 Mixed methods research designs**

Mixed methods research takes different forms or shapes (designs). According to Creswell and Plano Clark (2011:5), mixed methods research mixes two forms of data simultaneously by combining them sequentially by having one build on the other, or embedding one within the other. Such is the character of the designs involved in mixed methods research. Guest (2012:142) argues that MMR designs should be seen as tools that help researchers in the field to plan their studies. Research indicates that timing, mixing, priority and purpose of such designs help scholars to make informed decisions as to whether research takes a concurrent, sequential and embedded design (Creswell & Creswell 2018; Plano Clark & Ivankova 2016; Creswell 2015; Guest 2012; Greene et al. 2008). Greene (2008:14) emphasises that priority stance and timing are critical dimensions in choosing a relevant design. The source posits that priority is about the stance or dominance in one study given to one particular method or approach over another, or about the equal treatment of the methodologies. A closer examination of this assertion makes it



clear that timing is a decision about whether different data collection and analysis methods are applied concurrently or sequentially in a study. Therefore, the timing of mixing different data sets is a salient step and feature in the design decision-making process. This takes the discussion to the actual designs. Creswell and Creswell (2018), Creswell (2015), Creswell and Plano Clark (2018; 2011), Bergman (2008) and Greene et al. (2008) indicate the following designs as the major designs underlying all MMR studies. This is also illustrated in Figure 11.

### **3.3.3.1 Convergent design**

Creswell and Plano Clark (2018:68) state that convergent design is a common strategy to mixing methods in a single study. Some mixed methods studies refer to it as a triangulation design (Plano Clark et al. 2008; Bergman 2008). However, in the literature on research methodology the two terms are used interchangeably to mean the same thing. Therefore, to use of the terms interchangeably is not meant to create confusion but rather to reflect the nature and salient feature of the design. Bergman (2008:69) characterises it as “a one-phase design in which quantitative and qualitative data are collected and analysed in parallel and then merged together to develop a more complete understanding or to compare the different results”. The merging together of both quantitative and qualitative data means that the researcher is triangulating between these different methods with the aim of getting triangulated results about the phenomenon in a single study. The bringing together of different but yet complementary data is what drives the application of the design in multi-method research (Plano Clark et al. 2008; Morse 1991). The complementary nature of this design means that more well-validated and substantiated findings are produced about the research problem and in answering research questions (Morse 1991). Complementary logic is one of the justifications for mixed methods research as articulated earlier in this chapter. Sarantakos (2013:55) posits that what is striking about complementary logic is that it strengthens the weaknesses of both qualitative and quantitative methods. The offsetting strengths and weaknesses of both methods in one study provides a strong argument for the choice of a mixed method research design (Plano Clark & Ivankova 2016). Therefore, the purpose of the application of the convergent design is to compare and combine the research results in order to provide a better understanding of and more rigorous

conclusions on the phenomenon in the study (Creswell & Plano Clark 2018; Plano Clark & Ivankova 2016).

The next section discusses the explanatory sequential MMR design.

### **3.3.3.2 Explanatory sequential design**

Explanatory sequential design is a sequential ‘Quan → Qual’ design, which calls for the implementation of quantitative and qualitative strands in sequence in a single study. It is a two-stage data collection process in a research study (Creswell & Creswell 2018). According to Plano Clark & Ivankova (2016:122), in such type of studies, the focus is first on the quantitative study strand and then followed by the qualitative study strand, in which a follow-up qualitative data is used to elaborate or confirm the initial quantitative results. Bergman (2008:70) argues that unlike in the convergent design, quantitative and qualitative data collection processes are used in different phases and are somehow connected in one way or the other in sequential mixed methods research designs. In the explanatory design, mixed methods researchers start with quantitative methods (for instance, a survey instrument to gather data) which is then followed by qualitative methods such as interviews or observation to explain the quantitative research results from the initial phase (Creswell & Creswell 2018; Creswell & Plano Clark 2018; Plano Clark et al. 2008; Bergman 2008). Creswell and Creswell (2018:221) contend that the design in the mixed methods research is attractive to the researchers with strong quantitative backgrounds. The source articulates the fact that the design requires a rigorous representative sampling strategy in the initial phase and with purposeful sampling in the second qualitative strand. From a data analysis point of view, the two databases are analysed separately. At the integration point, the researcher integrates the two databases (quantitative and qualitative) by connecting quantitative results to qualitative data collection (Creswell & Creswell 2018). Briefly, this means that quantitative results from the first phase are used to develop the qualitative follow-up questions, which are normally to plan and carry out through interviews. It is common in such types of studies that the interpretation of data flow in sequence, first, by reporting the quantitative results and secondly by reporting on qualitative findings from the second phase. Creswell and Plano Clark (2018:77) argue that it is precisely for this reason that the logic of using this design is to

apply a qualitative strand to elaborate the quantitative results collected through the quantitative method. Hence, the principle behind the application of the design is that the researcher and the research problem is more of a quantitative nature, the variables are clear to the researcher and an instrument is developed to measure those variables or constructs.

The next section focuses on exploratory sequential design, which is central to the study.

### **3.3.3.3 Exploratory sequential design**

Unlike the two-phase explanatory sequential design, the exploratory sequential design is a three-phase MMR design in which the research problem is qualitative oriented. Exploratory sequential design is a sequential ‘Qual → Quan’ design. In this MMR design, a researcher explores the phenomenon of the study qualitatively through the collection and analysis of qualitative data, which then is followed by a development phase in which qualitative findings are then used to develop or inform the quantitative instrument. In the third and final phase, the instrument is tested or generalised quantitatively to a larger sample (Creswell & Plano Clark 2018). Ivankova, Creswell and Plano Clark (2016:15) postulate that exploratory sequential design is applicable for pursuing a research where no theory exists. Therefore, that is why the intention is to first explore the research problem through qualitative methods by developing the theory and then test the constructs, variables, or hypotheses quantitatively (Ivankova 2015). Furthermore, it is also appropriate in cases where the researcher does not know the variables or constructs to measure or pursue in study (Creswell & Plano Clark 2018).

The design is the complete opposite of what the explanatory design does, wherein quantitative data is collected and analysed in the first place. In research using an exploratory research design, the researcher begins by collecting and analysing qualitative data during the first phase of the research process (Creswell & Plano Clark 2018; Ivankova 2015; Morgan 2014). In other words, the exploration of the topic involves the researcher detecting key themes and developing theories of the study. The research findings coming out of the exploration process are used to develop a quantitative instrument or to identify variables. Once the instrument is developed, it is then used to test the theory and the new variables.

This study adopted the application of an exploratory sequential design as the guiding strategy for collecting and analysing data. The rationale for the choice of the design is discussed in detail in the research design section later in this chapter. The three designs already discussed in this section are considered the core designs underpinning mixed methods research (Creswell & Creswell 2018; Creswell & Plano Clark 2018; Morgan 2014). Embedded designs are advanced levels of mixed methods designs (Creswell 2015; Plano Clark et al. 2008) and these designs are discussed in the next section.

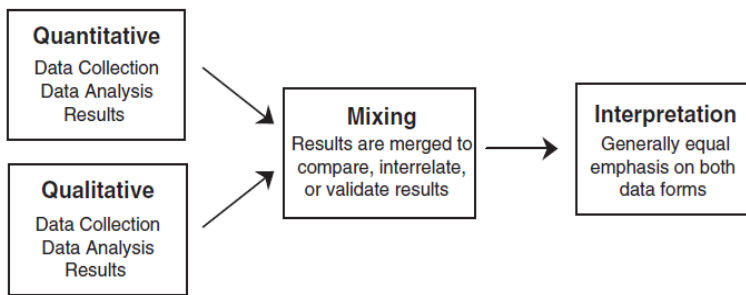
#### **3.3.3.4 Embedded design**

“A key characteristic of an embedded design is that the overall research study is guided by either a dominant quantitative or a dominant qualitative approach. According to Plano Clark et al. (2008:1554), a researcher collects a supplementary data set in a supportive role to the dominant data collection method. In a nutshell, the supplemental data set is gathered and used to enhance the overall quality of the study. This supplementary data can be collected before, during, or after the collection and analysis of the dominant data.

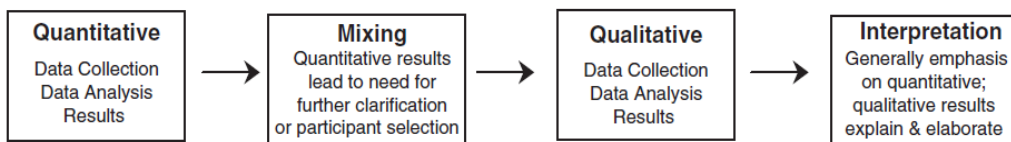
Leedy and Ormrod 2015:331) assert that this type of MMR design is similar to a convergent design because both quantitative and qualitative data are collected in the same period. One salient feature is that one research approach dominates the other whilst the other plays a secondary or supplementary role to the dominant approach. So, research using this type of design is guided by a usual quantitative or qualitative research methodology, which direct the overall approach of the study. The supporting data set can be collected before, during or after the collection and analysis of the dominant data set(s) to boost the overall study (Leedy & Ormrod 2015; Plano Clark et al. 2008; Creswell & Plano Clark 2007). For instance, qualitative data can be collected to boost research that is quantitative-dominant and the researcher may embed open-ended questions in which participants explain the relationship between variables or ratings. In such a case, the qualitative data collection method is embedded in largely quantitative research.

---

**(a) Triangulation Design**



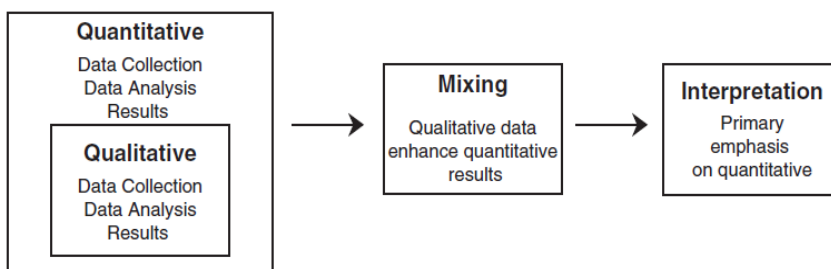
**(b) Explanatory Design**



**(c) Exploratory Design**



**(d) Embedded Design<sup>a</sup>**



---

**Figure 12: Four main mixed methods research designs**

(Source: Plano Clark et al. 2008:1551)

To summarise, the above discussion on the major MMR designs makes it clear that it is important for the researcher to make an informed decision in terms of what type of design to prefer in one study over the other. Understanding the salient features of each design will help the research to make good methodological design decisions. Timing, mixing, priority and purpose are key features and considerations of the designs that need explicit clarification in any mixed methods research. Creswell and Plano Clark (2018:98) argue that the choice of design should be

guided by the purpose of the study, the expertise of the researcher, the time given for a MMR study, and knowledge of the complexity of the design. However, the literature reveals that these designs come with their own challenges and limitations that researchers must be aware of and also how to address them. For example, sequential designs – be it explanatory or exploratory – requires extended time for completion. It is a well-acknowledged fact in the literature that qualitative research requires more time to implement than the quantitative phase (Creswell & Plano Clark 2018; Punch 2014; Sarantakos 2013). Creswell and Plano Clark (2018:81) posit the fact that enough time should be allowed for the qualitative phase, even though such a study can be limited to only a few participants. This is largely because both the researcher and participants are fully interactive in the process. Specifying the quantitative phase in advance can be a challenge for researchers using exploratory sequential design (Creswell & Plano Clark 2018).

The extant literature on methodology laments the fact that the quantitative phase often requires a larger representative sample of the population than the qualitative phase, which usually requires a smaller population sample (Leedy & Ormrod 2015; Masue et al. 2013; Saunders et al. 2016). Like sequential designs, a convergent design has its own limitations. A convergent design dealing with different samples and different sample sizes, could prove to be a challenge when merging two different data sets and also when triangulating text (qualitative data) and numeric data sets (quantitative data) (Creswell & Plano Clark 2018; Creswell & Creswell 2018; Ivankova 2015). Creswell and Creswell (2018:221) point out that some potential threats to issues of validity exist in the convergent design, largely because of the use of unequal sample sizes. The source further laments that fact that the application of different concepts or variables on both sides of the methodology may lead to incomparable findings and difficulty merging findings from both phases.

The next section outlines the research design or strategy of the study.

### **3.4 Research design**

A research design is an important aspect of research methodology because it provides guidelines on how the research unfolds and informs data collection and analysis. A research design is

understood as a blueprint, plan, or strategy that moves beyond the underlying epistemological positions or philosophical assumptions to specifying the selection of the actual participants, identifying the data collection methods to be used and how data analysis will be carried out in the process (Nieuwenhuis 2016b:72). Punch (2014:114) argues that such a plan should outline all issues involved in the actual planning and execution of a research study. In other words, it highlights the way the researcher guards against and rule out possible options for the interpretation of results. Furthermore, a research design serves to situate the researcher in the empirical world and connects data collected to the research questions (Denzin & Lincoln 2011). According to Punch (2014:114), a research design consists of four main ideas: first, the strategy; secondly, the conceptual framework; thirdly, the question of who or what will be researched; and lastly, it is about instruments and procedures to be used for collecting and analysing data. This means that a research design deals with four main questions corresponding to these main ideas, namely (a) what data will be collected and analysed following what strategy? (b) within what framework? (c) from whom? and (d) how will the data be collected and analysed?

For the purpose of this study, the research design provided a guideline by which the researcher could get answers to the research questions. In order to achieved the purpose of the study and collect data to answer the research questions, the study adopted a multi-case study and exploratory sequential mixed methods research design.

The following section explains the exploratory sequential mixed methods design as the chosen strategy for the study.

### **3.4.1 Motivation for using an exploratory sequential design**

The exploratory sequential design was chosen to pursue the research problem, research objectives and questions of this study. The design is a three-phased MMR design in which the research problem is qualitatively oriented (Creswell & Plano Clark 2018) as discussed in the previous section on mixed methods designs. The application of the exploratory sequential design (sequential Qual → Quan design) was considered appropriate for the study given the fact that the phenomenon and researcher of the study is more qualitatively oriented. Creswell and Plano Clark

(2018:86) stress that it makes sense that studies following this approach, start with a more inductive reasoning as a theory-building mechanism. The choice of this design was in accordance with the principles or methodological characteristics of exploratory sequential design (sequential Qual → Quan design.). The exploratory sequential design consists of two main chronologically strands in a qualitative and quantitative orderly fashion (Ivankova 2015; Creswell 2015; Creswell & Plano Clark 2011). The design starts with qualitative data collection and analysis to first explore the research problem using qualitative data collection techniques, whilst quantitative data collection builds on the findings from the first qualitative strand or phase. Ivankova (2015:138) emphasises that the main aim of the design is to initially explore the research phenomenon of interest using a qualitative procedure such as interviews and then test the variables and relationships quantitatively.

According to Creswell (2011:21), the complexity of scientific phenomena warrants for answers beyond simple statistical data in a quantitative sense or words in a qualitative sense. This study was better served with the use of MMR due to the nature of the research problem and questions. By using a three-phase procedure, the researcher wanted to bring multiple perspectives on organisational knowledge loss in order to develop an integrated framework for the reduction of knowledge loss in state-owned enterprises. First, the researcher explored the phenomenon through an exploration process by using interviews to collect data from human resource managers. Secondly, the researcher developed quantitative instruments based on the qualitative findings. Creswell and Creswell (2018:224) concur that a qualitative data analysis can be used to develop an instrument that enhances the validity and reliability of the study. Issues of validity and reliability pertaining to study are discussed later in detail in Section 3.5.4. In the third and last phase, the researcher tested knowledge discovered and understanding developed in the first phase to establish if HRM practices facilitate or support the management of organisational knowledge loss. This was done by distributing questionnaires to knowledge managers or practitioners. This approach fitted well in with the salient features of the exploratory sequential design as outlined in the literature.

The next section outlines the research procedure by explaining how data were collected and analysed.



### **3.5 Research procedure**

The section outlines the procedure for implementing the research strategy discussed in the previous section. The researcher decided on a mixed method research using a multi-case study as a research model. The study applied an exploratory sequential design for data collection and analysis purposes. The study aimed to gather data regarding loss and management of organisational knowledge in state-owned entities.

Remler and Van Ryzin (2015:4) explain that research procedures are techniques that generate research evidence, including but not limited to issues of sampling strategies, data collection instruments and statistical techniques. The source claim that researchers need to understand research methods or procedures so that they can be in a better position to make judgements about the quality of the scientific enquiry and the kind of evidence it provides. Straits and Singleton (2018:3) concur that such procedures should be clear to researchers as gatherers and consumers of research evidence. Data for the study were collected from human resource managers using qualitative means through interviews and document analysis in the first phase. In the second strand, a survey in the form of questionnaire was developed and based on the research findings of the qualitative strand. The researcher then tested the knowledge or theory discovered and developed from the qualitative phase on knowledge management practitioners and employees in selected South African SOEs.

The next section provides a review of population and sampling issues involved in the study.

#### **3.5.1 Population and sampling**

After determining the units of analysis, the most logical step is to define the population of the study from which a sample(s) of the target population is drawn. Punch (2014:244) defines population as “the total target group, who would, in the ideal world, be the subject of the research, and about whom the researcher is trying to say something”. The targeted population of the study was human resource managers in the qualitative phase including the annual reports of the participating state-owned enterprises. Employees and knowledge management practitioners from the SOE sector were the targeted population in the quantitative phase. Sampling is the

process of identifying and selecting people, objects or events for inclusion in a research study (Straits & Singleton 2018; Remler & Van Ryzin 2015). In other words, a sample is the actual number of people drawn from the target population and are included in the study for the purpose of research data collection.

All types of research, whether qualitative, quantitative or mixed methods research, involve sampling of some sort (Creswell & Plano Clark 2018; Punch 2014). Sampling is even more important in mixed methods research because of its application of multiple methods of data collection (Sykes, Verma & Hancock 2017; Collins 2010). By only focussing on a particular sample from the target population or group makes it possible to draw inferences about the larger group (Ngulube 2015b). For the purpose of achieving the main aim of the study, HR managers in the SOEs were the target population for the qualitative research phase of the study, whereas employees and KM practitioners were the target population for implementing the survey instrument in the second quantitative phase. Non-probability sampling in the form of purposive sampling was applied in the qualitative phase (Kumar 2014). Similarly, the annual reports of the the nine state-owned enterprises that participated in the interview process were purposively selected and made available for the document analysis to address specific research objectives and questions of the study.

Knowledge discovered and developed from the findings of the qualitative phase was used for the development and testing of the research instrument. This was done with the cooperation of employees, including KM practitioners, in the sector. The same survey instrument that was developed in this way, was then distributed to employees of three SOEs and KM practitioners in the sector that agreed to partake in the quantitative phase. In an exploratory sequential design, the sample in the quantitative phase should be a different a target group and larger than the qualitative sample in the first phase (Creswell & Plano Clark 2018; Creswell & Creswell 2018). Similarly, Creswell and Creswell (2018:224) posit that data gathering happens at two stages in the design. The survey instrument was randomly distributed to all employees in the participating SOE companies and to all the identified KM practitioners in the sector who had e-mail and internet access. Probability sampling, in the form of random sampling, was deployed in the quantitative phase wherein each potential respondent had an equal chance of participating in the

online survey (Straits & Singleton 2018; Kumar 2014). In a nutshell, the quantitative phase followed the dictates of positivism because all employees and KM practitioners were given an equal chance of participating in the study. The study deemed it fit to follow the prescripts in each of the two research approaches.

The section below addresses the rationale for the use of this type of sampling technique in the study.

### **3.5.2 Justification for the use of the sampling technique**

Kumar (2014:244) argues that a major consideration in purposive sampling is that the researcher uses his or her judgement as to who can provide the best information to achieve the research objectives and to answer research questions. In other words, it requires a high-level of reliance on the researcher's expert judgement to select a sample that is representative of the population (Straits & Singleton 2018).

The current research used a mixed method approach with a qualitative dominance. According to the researcher's expert knowledge, purposive sampling was considered an appropriate sampling alternative for the qualitative phase of this study. This sampling alternative is much better at offering stronger inferences compared to non-probability sampling techniques such as convenience, accidental, quota or snowball sampling. Kumar (2014:247) indicates that sampling strategy and sample sizes do not play a pivotal role in the selection of the sub-population or sample in the qualitative studies. The aim of qualitative research is to explore a phenomenon with purposively selected individuals. Purposive sampling is a good way to explore a phenomenon when there is little information available about the phenomenon and the population. Its application is common in qualitative studies, especially in case studies (Kumar 2014, Yin 2011). Even so, Straits and Singleton (2018:126) caution that the main limitation of purposive sampling is that it requires a considerable amount of information gathering about the target population before any decision can be made about the sample. Ability to probe for more referral may assist mitigating against such possible limitation.

Based on their availability, twenty human resource managers in nine SOEs were purposively selected as the participants in the qualitative interview process. The sample availability differed from one SOE to another. For instance, in SOEs with a huge HR establishment, three HR managers from each of those companies were recruited to participate in the study, whereas smaller SOEs were represented by either one or two HR managers, depending on their availability. A study by Sultan Balbeuna (2014:40) indicated that there are about 300 SOEs in South Africa. There seems to be a lack of extant literature on the actual number of KM practitioners employed in those SOEs. Given the fact that knowledge management is a relatively new management praxis in the public utility sector, not every single SOE has a knowledge manager or practitioner. However, some SOEs have a dedicated knowledge management unit with more than one practitioner. For this reason, the researcher approached Knowledge Management South Africa (KMSA) to identify (based on their membership of KMSA) those KM practitioners who are working in different SOEs in the country. KMSA is a society for knowledge management professionals who are passionate about moving their discipline forward in their organisations while investing in themselves (KMSA 2018). The intention was to distribute the questionnaire to a larger number of KM practitioners to increase the reliability and validity of the measurement and data collected in the quantitative phase. From membership distribution list, 40 knowledge management practitioners affiliated to KMSA were identified for the survey questionnaire instrument.

The lack of sufficient information about the actual number of knowledge management practitioners in the utility sector might have affected the representativeness and generalisability of the sample and research findings to the entire population in the sector. However, distributing the questionnaire to the entire 40 identified members of population from the SOE sector served to mitigate a potential reliability risks in the process and enhance the reliability of the instrument.

Non-probability sampling involves a process of selecting participants that is different from the random selection of the research participants or respondents (Straits & Singleton 2018). The human resource managers were purposively selected to take part in the qualitative interview phase of the study. In purposive sampling, the researcher relied on the availability and knowledge of the HRM managers as potential participants to provide answers to the research

questions (Straits & Singleton 2018; Nieuwenhuis 2016b). According to Nieuwenhuis (2016b:85), the strategy used for sampling a target population should be relevant to the conceptual framework and research questions addressed in the research. That was the case in this study because human resource managers in the qualitative research interview phase were purposively selected based on their relevance to generate rich information for this type of research. The choice of the HR managers as research participants in the qualitative phase was based on considerations of money and time (Nieuwenhuis 2016). The issues of accessibility for researchers and participants were also taken into consideration.

A sample size of 10% of the targeted population is enough for quantitative studies (Neuman 2014; Grinnel 1997). The researcher targeted at least 10% of the employees in each of the three state-owned enterprises. Sampling strategy for the quantitative element adopted random sampling procedure. For the quantitative phase of the study, the survey questionnaire was distributed to 10% of the total employees in each of the three SOEs (SOE2, SOE4 & SOE5). For example, in SOE2 the questionnaire was distributed to 85 employees of their 849 total employees, in SOE4 it was distributed to 60 of their 593 and for the SOE5, it was distributed to 400 of the estimated 4000 employees. Since the targeted population of the knowledge management practitioners working in the SOE sector was small and less 100, the survey questionnaire was distributed to all the 40 identified practitioners. Srinivasan et al. (2015) point out that sampling from a small population for statistical is a serious challenge. It is therefore recommended that the researchers facing such challenges should sample everyone in the population of less 100 (Hoyle 1999). Hopkin, Hoyle and Gottfredson (2015:951) suggests that small population may be combined with other available samples to minimise the odds of detecting the difference and increase the reliability. All these numbers added up to 585 potential respondents (employees in the three SOEs and KM practitioners from the sector) that received the questionnaire for completion. A response rate of 25% (145 of 585) was used for the statistical analysis of the quantitative phase of the study. The survey questionnaire was reliable, with a Cronbach's alpha of 0.94.

The survey instrument was randomly distributed to all employees in three SOEs who had access to e-mail and the internet and to all 40 knowledge management practitioners in the sector. Straits

and Singleton (2018) assert one of the key principle in simple random sampling; all potential respondents have an equal chance of being selected for the participation in the study. All the targeted employees and knowledge management practitioners had an equal chance of completing the survey instrument as the questionnaire was distributed to every employee and KM practitioner in the participating SOEs. A response rate of 25% was deemed sufficient for the exploratory factor analysis (EFA) in the quantitative phase. The purpose of using EFA was to establish the coefficient between variables and factors in the instrument used. The literature reveals that a response of 100 or more respondents is enough for EFA studies (Hair et al. 2014).

The next section presents a case for the research setting.

### **3.5.3 Multi-case study design**

Yin (2009:18) defines a case study as “an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”. The source implies that a case study is a qualitative research approach that positions the exploration of a research problem in its context using multiple sources of data. The appeal of a case study is its central feature of being able to generate an in-depth and multi-faceted understanding of a complex research phenomenon in its real context (Yin 2014; Crowe, Creswell, Robertson, Huby, Avery & Sheik 2011).

This study used a multi-case research strategy to explore the research phenomenon in more than one South African SOE by using multiple sources of evidence. Some of the research questions pursued in the study addressed the how and why questions. Such questions made the choice of a case study design as research model a feasible option to the researcher. Research involving the development of how and why research questions provide a solid rationale for the use of a case study design (Yin 2014). For instance, questions such as the following warrant the application of a case study approach: How do HRM practices facilitate the reduction of organisational loss in SOEs? and Why is HRM a salient partner in organisational knowledge management efforts?

The first strand of the study was exploratory in nature involving qualitative methods of data collection and analysis. The results from this phase were used for the development of a

quantitative instrument for explanatory purposes. According to Yin (2009), case study designs are good methods for exploratory (qualitative) and explanatory (quantitative) studies. Loss of organisational knowledge in organisations is a contemporary phenomenon requiring a multi-faceted approach in knowledge-intensive firms.

Several authorities on case study designs postulate that these designs, compared to other methods, remain popular at addressing real-life contemporary issues (Gustafsson 2017; Yin 2014; Hyett, Kenny & Dickson-Swift 2014; Creswell 2013; Baxter & Jack 2008). It is important to acknowledge that the purpose of the study determines whether the research intends to explore or describe a case, or compare different cases. It is for such reasons that Yin (2009:21) characterises case studies as either exploratory, explanatory or descriptive. Case studies can either be single or multiple, depending on various reasons informing such choices (Gustafsson 2017; Yin 2012; Saunders et al. 2016). A single case is limited to a single organisation but if the study involves two or more entities, it is multi-case study (Yin 2009; Baxter & Jack 2008). Furthermore, case studies can be classified as having a holistic or embedded dimension, regardless of whether it is a single or multi-case study (Yin 2012, 2014). According to Yin (2012:7), one might look at an organisation at a holistic level or limit the analysis to sub-units within the organisation. If the analysis is limited to more than one unit or department in an organisation it will inevitably lead to more than one unit of analysis. This process then becomes an embedded case study. Saunders et al. (2012) assert that a single case usually involves a critical, an extreme or a unique case, whereas a multiple case study combine a number of cases with different contextual factors. That was the situation with the cases chosen for this study because the phenomenon of organisational knowledge, its loss and management strategies are all influenced by different contextual factors in the selected SOEs. Therefore, a multiple case strategy was selected because of its benefit to predict literal and theoretical replication. Multiple cases are selected to predict similar results (direct replication), or contrasting results for the anticipated reasons (theoretical replication) (Yin 2012).

The features of a multi-faceted approach to case study designs make them appealing to mixed methods research studies. As discussed in the previous section on MMR designs, mixed methods designs are good at unearthing and providing multiple sources of data as well as complementary

and contrasting results in a research project (Creswell & Plano Clark 2018; Ngulube 2015). For this reason, Yin (2012:19) argues that case studies make perfect partners of mixed methods research approaches and designs. The use of a multiple case study design was a perfect fit to this study because of its mixed methods research approach for the investigation of the research problem from both qualitatively and quantitatively approaches. Chmiliar (2010:583) agrees that multi-case studies are more appealing and powerful than single-case designs because they provide intensive and rich descriptions and explanations of the contextual issues at hand surrounding the problem of the study. They collect data from more than one source such as in-depth interviews, surveys, observation, document analysis and many other tools not included here.

Nieuwenhuis (2016b:82) contends that multiple case studies provide researchers with opportunities to explore the differences in and between cases. As such, this salient feature offered the researcher the capacity to replicate findings across cases. The ability to do analysis in and across different settings is an important strength of multiple case studies. The application of a multi-case study provided some useful benefits to this study because it ensured a greater confidence in the research findings than single cases would have done. Thus, this study adopted an embedded multi-case study because its data collection and analysis involved more than one unit of analysis in the sub-units of the organisations involved. The use of interviews with selected human resource managers, and the use of questionnaires to take a survey with knowledge managers or practitioners, provided the researcher with multiple sources of evidence. According to Yin (2012:10) and Saunders et al. (2012:181), good case study designs benefit from multiple sources of data and evidence.

The next section presents the research methods used in the study.

### **3.5.4 Research methods for data collection and document analysis**

This section provides a reflection on the methods selected for the collection and analysis of the research data. Morgan (2018:270) theorises that one way of distinguishing qualitative and



quantitative strands in a mixed methods study is through the methods used to generate and analyse data.

Open-ended interviews and participant observation are often associated with qualitative research whereas survey questionnaires and experimental designs are associated with quantitative research (Creswell & Plano Clark 2018; Morgan 2014; Sandelowski 2014). The subjective nature of qualitative research signifies the importance of collecting in-depth information about phenomena in real-life settings. Open-ended interviewing offers the best option to achieve that level of in-depth analysis. In contrast, the objective nature of quantitative methods emphasises the significance of using quantitative statistical measures and analysis to produce objective and verifiable facts about the research phenomenon and questions. Sandelowski (2014:6) concurs with this logic and argues that objective and subjective binary discourse manifests itself operationally in the type of methods used in qualitative versus quantitative methods.

The next section discusses the actual methods or techniques in both strands of the mixed methods design chosen for the study.

#### **3.5.4.1 Interviews**

The aim of the first qualitative strand was to explore the role and integration of HRM practices in the management of knowledge loss by interviewing selected HR managers in SOEs. It was important to explore how HRM practices played a role in the reduction of organisational knowledge loss and in building KM capabilities. Therefore, HR managers in the selected SOEs were participants in the qualitative exploration phase of the study. To collect qualitative data, the researcher conducted individual in-depth interviews with purposively selected HR managers. Kumar (2014:247) postulates that in qualitative studies, sampling strategy and sample size do not play a pivotal role in the selection of a sub-population or sample. What do matters, is the exploration of research problems or issues.

Qualitative interviews were considered the most suitable method to effect the exploration of the research problem and associated issues. Interviews are common and important data collection techniques in the qualitative research process (Nieuwenhuis 2016b; Punch 2014). Punch (2014:144) argues that they are good at unearthing people's perceptions and meanings as well as

unearthing the clarity of situations and construction of reality from the view of the research participants. This aligns well with the subjective view of interpretivist philosophy, discussed earlier in the chapter. The intention was to see the research phenomenon through the eyes of the research participants, namely through the eyes of the HR managers. The use of a qualitative, open-ended interview allowed the researcher to obtain their subjective views. The exploration of the research issues through interviews, also allowed knowledge or theory development about the topic in the first qualitative strand of the study. Naturally, the aim of qualitative research is to develop theory (Punch 2014; Saunders et al. 2016, Bryman 2012). The interview was such a widely-used data collection instrument available to the researcher for the achievement of theory development in the first phase of the study.

Interviews can be structured (closed-ended questions) or unstructured (open-ended questions). In the qualitative research process of the study, unstructured interviews composed of open-ended questions were used to obtain qualitative data from the participants. Creswell and Plano Clark (2018:179) articulate that qualitative data comprise of data obtained from unstructured questions in which the researcher does not make use of predetermined answers or scales to gather the information. The data gathered through the open-ended questions were analysed and organised in the form of text data or words according to the main themes emerging from the data collection process. The use of open-ended questions aligned well with the aim of the qualitative phase of the study because they assist the researcher to achieve high-degree exploration of the phenomenon in actual real-life settings. In-depth interviewing is a flexible method of data collection that gave the researcher in-depth and rich information about the research phenomenon. As such, it enhanced the exploration of the research phenomenon since it allowed probing and follow-up questioning (Punch 2014). The exploration of the research phenomenon characterised the nature and the purpose of the qualitative strand in this mixed methods study. Interviewing generally draws a reasonably high response rate (Sarantakos 2013).

Although interviews were the chosen data collection method of the qualitative phase in the study, it is worth noting that they come with their own challenges or limitations. Several researchers caution that interviews need proper planning, timing and resources (Nieuwenhuis 2016b; Punch 2014; Sarantakos 2013, Saunders et al. 2016). These practical aspects of interviews need proper

consideration in the planning process given that data quality issues such as reliability, validity, biasness and generalisability are associated with interviews. The data quality issues pertaining to this study are discussed in detail in Section 3.5.4 that deals with reliability and validity of the instruments.

Sarantakos (2013:296) posits that interviews are more costly, resource-intensive and time consuming than quantitative data collection methods such as questionnaires. As a result, they are less convenient than questionnaires. Another limitation is to manage bias in the interviewing process (Creswell and Plano Clark 2018; Saunders et al. 2016). Interviews are also lamented for a lack of anonymity and sensitivity (Sarantakos 2013). However, these issues were properly managed in the study through careful ethical considerations such as maintaining a high level of anonymity and confidentiality, informed consent and use of more than one data collection method.

The next section discusses the use of a questionnaire as the quantitative data collection method in the second phase of the study.

#### **3.5.4.2 Questionnaire**

The purpose of the second quantitative strand was to test the survey instrument with knowledge management practitioners and employees in the SOE sector. The intention was to test the findings of the qualitative strand with a much larger sample across the public utility sector. A quantitative survey instrument in the form of a questionnaire was used to achieve the testing of knowledge developed or the veracity of the effectiveness of HRM practices in reducing organisational knowledge loss with knowledge management practitioners in the industry. The quantitative research component subscribed to the positivist philosophy, which meant that it measured and elicited objective facts.

A survey questionnaire is one of the most relevant instruments to meet the requirements of positivism (Neuman 2014; Sarantakos 2013; Masue et al. 2013). Questionnaires are commonly used as data collection tools in quantitative research (Remler & Van Ryzin 2015; Sarantakos 2013). Questionnaires allow the researcher to collect quantitative data, and allows such data to be

analysed quantitatively through statistics and measurements (Straits & Singleton 2018; Plano Clark & Ivankova 2016).

A standardised questionnaire in the form of a Likert scale was used to collect the required data from the larger population of employees and KM practitioners in the public utility sector. The employees and KM practitioners in the public utility sector were respondents in the quantitative phase of the study. The quantitative phase in the mixed methods research was about testing research findings of the qualitative strand. Hence, a standardised questionnaire was considered an applicable method to achieve theory testing in the study. Sarantakos (2013:250) posits that standardised questionnaires are highly rigid and offer a high degree of standardisation. For that reason they do not allow flexibility in answering the research questions. Unlike the interviews used in the qualitative strands, questionnaires are less expensive and are good at producing quicker responses.

A Likert scale is the most commonly used scale used in questionnaires to achieve a high degree of standardisation. Maree and Pietersen (2016:186) agree that it is widely used in survey research to measure how respondents feel or think about an issue. Therefore, the use of a Likert scale helped the researcher to understand and reveal the strength of the feelings or attitudes of the knowledge practitioners concerning the effectiveness of HRM practices in reducing knowledge loss and increasing KM capabilities. Likert scales are good at discovering the strength of feelings and are also good at measuring a construct (Bell 2005). That is achieved by asking a series of Likert scale questions and by providing five different options in the following order:

1. Strongly agree
2. Agree
3. Neutral or undecided or uncertain
4. Disagree
5. Strongly disagree

The calculation of the score for each question or statement is completed by a way of assigning values of 1 to 5 to these categories and these numerical values represent the responses (Maree & Pietersen 2016).

Maree and Pietersen (2016:183) signify that closed-ended questions in a questionnaire are easy and quick to answer and as a result, coding and statistical analysis are done without much difficulty. The source indicates that unlike interviews, sensitive questions can be easily answered with the use of questionnaires. Although questionnaires offer respondents the opportunity to complete them at convenient times, and although questionnaires provide an objective view and wider coverage of the issues (Sarantakos 2013), they are not without limitations or challenges. Sarantakos (2013:273) and Bryman (2012:252) specify the following limitations of questionnaires.

- They do not allow probing and clarification of questions.
- They do not present the researchers with opportunities to gather more additional data.
- It is difficult to identify the respondents and the conditions under which the questionnaire is completed.
- It is difficult to motivate the respondents to participate or answer the questions..
- Getting responses to some questions could be a problem, largely due to the lack of supervision from the researchers.
- As a result, it is difficult to establish rapport.

However, like any other data collection method its limitations or challenges do not make the data collection method bad or good. It all depends on the purpose and research problem informing the choice and use of a particular data collection method.

Document analysis is another data collection method used in the qualitative phase of the study and is discussed in the next section.

#### **3.5.4.3 Document analysis**

In addition to the use of interviews, document analysis formed part of the qualitative collection and analysis processes. This included the 2018 annual reports of the nine companies participating in the qualitative interview phase. These companies authorised the researcher to make use of their documents. Punch (2014:158) states that documents are sources of rich data that can be used in social science research. Saunders et al. (2012:670) define documentary secondary data as

“written documents such as notices, minutes of meetings, diaries, administrative and public records and reports to shareholders as well as non-written documents such as tape and video recordings, pictures, films and television programmes”. For the purpose of this study, documentary evidence from the companies’ annual reports were reviewed to establish if and how they reflect on issues of concern to this research. Only the 2018 annual reports of the selected nine SOEs were used as sources of data for the study. Sarantakos (2013:313) laments that documents lack representativeness and accessing companies’ documents may prove to be a major challenge. Nevertheless, generalisation was never the intention of the qualitative exploration phase of the study.

Annual reports are publicly available documents to stakeholders, hence the decision to only focus on the use of annual reports. However, in order to maintain a high level of anonymity, the researcher used pseudonyms to conceal the names of the SOEs in the analysis process. For instance, the researcher was also interested to see how organisational knowledge loss, its management praxis and HRM practices are advanced and treated in SOEs strategies and reporting. It was important to understand how they focused on organisational knowledge in their strategies as a vital resource for sustainable competitive advantage. To achieve the purpose of collecting and analysing documentary secondary data, only the 2018 annual reports of the selected SOEs were analysed. An exploratory analysis approach was used in the document analysis process. Exploration analysis involves looking for particularities or uniqueness, trends and attributes in the text of documents that show the kinds of messages conveyed in the document (Sarantakos 2013).

In addition to outlining issues driving the choice and use of the three data collection methods, it is equally important to address how the data were analysed and presented. This is done the next section.

### **3.5.5 Data analysis and presentation**

Naturally, once data is collected one needs to make sense of it to infer the findings. The fact that the study used more than one data collection method implies the diversity in the analysis of data

collected through these techniques. Data analysis strategies include inductive, deductive and abductive data analysis to reflect the use of multiple and different sources of data used and to reflect the philosophical orientations in the research study. An inductive data analysis strategy aligns with interpretivism, deductive data analysis with positivism and abductive data analysis with a pragmatist philosophy (Maree 2016; Punch 2014; Saunders et al. 2016). Data analysis effectively involves the process of reducing a large amount of data that the researcher collected so that one can make sense of that (Bryman 2012:13). Therefore, it involves a data reduction process. Bernard (2013:394) signifies the data analysis phase in the research process as the stage of identifying patterns and themes in the research data collected so that the researcher can arrive at a particular inference(s) and make sense of the findings. In other words, in the analysis process the researcher looks for patterns in ideas or facts emerging from the collected data. Saunders et al. (2012:669) define data as “facts, opinions and statistics that have been collected together and recorded for reference or for analysis”. Ngulube (2005:138) infers that the analysis of data could take various formats including, but not limited to themes, tables, graphs, numerical or statistical presentation and analysis.

The next subsection provides the processing of the qualitative data collected through the interviews with the HR managers and the analysis of the annual reports.

### **3.5.5.1 Qualitative data analysis**

This section examines the process that was followed in the collection of qualitative data, coding and the analysis of the data collected through the interviews with human resource managers in the SOEs. Interviews were conducted with human resource managers who were purposively selected based on their knowledge of the research and their relevance to the qualitative phase and research questions of the study. According to Crouch and McKenzie (2006:484), qualitative interview-based studies involving a small number of participants, are common in social science research. Considering the views of Crouch and McKenzie (2006) and Bless and Higson-Smith (1995) regarding sample sizes, a sample size of twenty HR managers that was purposively drawn from nine SOEs across the five sectors of public utility was more than enough and convenient for the nature of this research. In-depth interviews with small samples was the method of choice and

realism was the epistemological foundation (Crouch & McKenzie 2006). The researcher conducted the interviews from March 2019 to July 2019. The interview proceedings were recorded with a recording device. On average, the interviews with the human resource managers lasted for an hour to complete research questions in the interview protocol. Once the interview proceedings were completed, an independent transcription service company completed the transcription of the audio recordings of fifteen (out of twenty) interviews. The researcher transcribed the audio recordings of the other five interview. The audio recordings of the interviews were destroyed after they were transcribed and the transcripts were stored in a secured external hard drive for future use for publications by the researcher.

According to Bloomberg and Volpe (2008:95), once a researcher has collected data through various collection tools, the next step is to organise, manage and make sense out of the pieces of accumulated data. The researcher of the current study used a computer software for qualitative data analysis called Atlas.ti. Atlas.ti denotes computer-aided qualitative data analysis software (CAQDAS). It was used to organise and manage data from the interview transcripts. Atlas.ti is an acronym that stands for Archive for Technology, the Life World and Everyday Language. The extension “ti” denotes text interpretation’ (Friese, Soratto & Pires 2018). Atlas.ti as CAQDAS does not replace the data analysis role of a researcher but it only helps to organise and manage the data process. It helps a researcher to better categorise and to generate better sense of the research data (Friese 2014). The researcher used thematic analysis as a data analysis technique commonly used in qualitative data analysis (Friese et al. 2018; Friese 2014; Braun & Clarke 2006).

Thematic analysis (TA) was the preferred data analysis method in this research. TA was selected based on its flexibility and ease of use in the interpretation of qualitative research interview data (Castleberry & Nolen 2018; Braun & Clarke 2006). The researcher is a self-taught user of Atlas.ti and followed a number of steps involved in the TA of the interview transcripts:

i) Before the researcher could start with the coding process with Atlas.ti, the researcher had to familiarise himself with the interview data by reading the interview transcripts and observational notes taken during the interview process. The literature recommends that a researcher needs a



repeated reading to fully immerse himself or herself in the data. This is even more important if the researcher did not transcribe the data himself (Friese et al. 2018). The researcher in this study transcribed only a few interview audios and outsourced the rest of the interview transcripts to an independent transcription service. Therefore, it was important for the researcher to immerse himself with the data. Moreover, the researcher conducted the interviews himself and audio-recorded the proceedings.

ii) After gaining a rich understanding of the data, the researcher installed Atlas.ti on his laptop and created this study on the software (Atlas.ti). See Appendix L. The analysis of the qualitative interview data involved categorisation of the data through themes. All twenty interview transcripts were uploaded on Atlas.ti. The software automatically assigned a number to each document according to the order in which the transcripts were uploaded.

iii) The researcher then started assigning quotations from the conversations he had with the HR managers to codes. Overall, twenty-nine codes were created based on the interview questions.

iv) Once the assignment of the quotations to codes were completed, the researcher grouped the twenty-nine codes into nine code groups. Code groups in Atlas.ti represent research objectives or main themes. Code groups in the middle of the screenshot (see Appendix M) represents these research objectives.

v) Lastly, after the coding process was completed, the researcher created various individual code reports per each assigned code group (research objectives or main themes). An example of a code report is captured in Appendix N. Thus, the presentation of the qualitative interview analysis was mapped according to these code groups, which addressed the main objectives of the study. The researcher used all types of dataset reports for the organisation and management of the analysis process. The organisation of data into datasets eased the analysis, thus helped with the interpretation of the data. Furthermore, the researcher created the network groups in preferred tree diagrams, which are discussed in Chapter Four to show how the researcher approached and navigated through each research objective and the relevant research questions.

Part of the qualitative data processing involved the analysis of the annual reports. Document analysis involved some form of qualitative analysis concerning the 2018 annual reports of the nine selected SOEs that participated in the interview process. The process involved the

presentation of data in the form of words. The annual reports were analysed using content analysis. Nieuwenhuis (2016c:111) and Sarantakos (2013:320) point out that content analysis enables a researcher to identify and assess items or words that appear to be theoretically relevant and meaningful to the central research question or purpose of the study. For carrying out content analysis of the annual reports, a word list in Atlas.ti was used to identify and record the presence and frequency of the unit of analysis (in this case, words) in the annual reports. This procedure involved the identification of categories and occurrences of words in the annual reports that were appropriate and addressed the research objectives and questions of the study.

### **3.5.5.2 Quantitative data analysis**

The analysis of the quantitative data that were collected by using a questionnaire in the second phase of the study, involved the use of a statistical technique to analyse the data collected from the knowledge management practitioners and employees. The Statistical Analysis System (SAS) Enterprise Guide (Version 8.2) was used and assisted the researcher to analyse the responses and the values assigned to in the Likert scales. Exploratory factor analysis was applied to the data collected to identify the coefficient between variables and factors in the quantitative phase. EFA was mainly used due to its ability to analyse relationships (coefficients) between variables and to identify variables with latent dimensions (factors) (Hair et al. 2014). The main purpose of the study was to develop a framework for knowledge loss reduction that integrate HRM and KM practices. EFA assisted the researcher in the identification of variables and factors, especially their relationships in the development of the framework. The analysis of quantitative data included the conversion of data into a numerical arrangement (Punch 2014; Bernard 2013). In other words, statistical analysis was used in the quantitative phase of the study. The analysis of data collected from the questionnaire included graphs and numerical or statistical figures.

The next section provides a discussion on the reliability and validity of the instruments used in the study.

### **3.6 Reliability and validity of the instruments**

Reliability and validity has to do with the quality of instruments and data collected by that instruments. Reliability and validity are salient features of the quality in both quantitative and qualitative research notwithstanding the different purposes and meanings of those two main types of research approaches (Creswell & Plano Clark 2018; Kumar 2014). Creswell and Plano Clark (2018:216-217) reason that the two concepts play an important role in checking and judging the quality of the research data and the findings and interpretation of the results.

This research used a case study design and a MMR approach, which relied on multiple sources of data or evidence. The researcher believed that this approach created issues of research quality, such as reliability and validity of the methods used to collect the evidence as well as reliability and validity of the findings.

Reliability and validity are key characteristics of case study research (Yin 2009). According to Punch (2014:240), the two concepts are central to making judgments about the quality of the measuring instruments. The instruments, in this case if this research, refers to the interviews, questionnaire and document analysis that were used and blended in the study.

In scientific enquiry, reliability and validity are used differently and for different purposes in quantitative and qualitative studies. Validity is about whether the research method provides answers to the research questions for which it was undertaken and also whether it provides answers by means of relevant methods and procedures (Kumar 2014:212). In contrast, reliability has to do with the consistency of the data collection instrument and its findings when used frequently.

Since the current study started with a qualitative phase, it was logical to first consider data quality issues relating to the qualitative research process before attending to issues that relate to the quantitative phase. In qualitative research, the quality of this type investigation can be arbitrated through the degree of its trustworthiness and authenticity. According to Guba and Lincoln (1994), the level of trustworthiness in qualitative-oriented studies is different and determined by four indicators namely, credibility, transferability, dependability and

confirmability. These indicators are carefully related to the concept of reliability and validity, commonly used in quantitative research. Trochim and Donnelly (2007:149) nicely summarise these indicators as follows:

- i. Credibility is about establishing whether the results of the qualitative study are credible or believable from the standpoint of the research participants. The source emphasises that credibility is tantamount to validity in the quantitative enquiry. To avoid issues of credibility or lack thereof in the study, researcher made sure that the research questions were clearly aligned to the research objectives. The higher the alignment the higher possibility of validity in the study.
- ii. Transferability has to do with the degree to which the results of the qualitative study can be transferred to other organisations or research settings. In the quantitative studies, transferability is synonymous with generalisability. However, the literature on research methodology cautions that generalisability is close to impossible in qualitative research since it does not follow the principles of representativeness or replication in probability sampling designs (Straits & Singleton 2018; Kumar 2014; Guba & Lincoln 1994). Moreover, generalisability or replication might have been possible in the quantitative phase due to the application of the questionnaire instrument to a larger population of employees and KM practitioners in the public utility sector.
- iii. Dependability is about whether the same results will be obtained pertaining the same research issues if the same instrument is used more than once. In quantitative research, it is similar to reliability or replication. Reliability and replication of the results may be impossible to achieve in a qualitative study. Nonetheless, in the quantitative phase if the current study, whereby a questionnaire was used to collect information from a wider population of employees and knowledge management practitioners in the selected SOEs, reliability and replication or generalisation remained a possibility.
- iv. Confirmability is concerned with the degree to which the research results are confirmed or corroborated by other research participants. In this regard it is similar to reliability in positivist-oriented studies. Like dependability, confirmability is also similar to reliability in such type of studies. It was difficult to ensure some level of confirmability in the

qualitative phase of the current study. However, the use of more than one data collection instrument (especially, the use of a survey instrument in the second phase) mitigated those worries and served to increase the degree of confirmability in the study. The argument aligns well with the known confirmability and credibility reasons for using more than one method in a single study (Bryman 2012; Creswell & Plano Clark 2011). The use of multiple sources of evidence or data also helps to reveal disconfirming evidence that could provide contrary perspectives on the data collected. Creswell and Plano Clark (2018:217) also agree that that the reporting of contrasting or contradictory evidence reflects the accuracy of the data because in real-life divergent views are normal to emerge. That is the strength of mixed method research (Bryman 2012; Morgan 2014). Therefore, it should not be seen as something negative in any study where contradictory evidence arises.

Qualitative research appeals to a high degree with validity because it explores research questions through multiple instruments (i.e. interviews and document analysis) and from multiple viewpoints. In contrast, the reliability of the research instrument is of central concern in quantitative studies. A key concern is whether the instrument is able to produce consistent measurements over time or anytime it is in use (Kumar 2014; Punch 2014; Trochim & Donnelly 2007). According to the reliability principle, consistency over time (or commonly referred to as external validity and internal validity) is a key issue in the quantitative inquiry. Internal validity pertains to whether the research demonstrates a causal relationship between variables (Saunders et al. 2012:193). In the current study, internal validity was established through a set of statements on a Likert scale that was analysed statistically in the quantitative phase of the study.

External validity is concerned with whether research findings can be generalised or replicated to similar research settings or organisations. In this study, replication was made possible by making sure that employees and knowledge management practitioners are randomly identified, selected, and that the survey instrument is distributed to the entire population to enhance the validity of the findings in the SOE sector. In addition, the distribution of the instrument to the entire identified population of employees and KM practitioners in the SOE sector served to achieve the generalisability of the findings to other organisations in the sector.

Construct validity is also a significant aspect of validity that is important to consider. This type of validity is concerned with the quality of the instrument. Kumar (2014:215) concurs that it is crucial to establish if the research instrument is in a position to measure what it is supposed to achieve. The researcher of the current study tested the interview protocol with two HR professionals to ensure that the instrument was in a position to measure what it was intended to do.

Reliability in quantitative research relates in a way to the validity concept. Nevertheless, it plays an insignificant role in qualitative and interpretative studies because their focus is not on objective but instead on subjective interpretations (Creswell & Plano Clark 2018). Reliability is key in quantitative research because of the need for objectivity, replication and statistical generalisation. The researcher needs to ask how reliable and unreliable the instrument is (Kumar 2014). If the instrument is consistent, stable, dependable and predictable, then its reliability is highly possible.

The researcher of the current study adopted a qualitative exploration of the phenomenon in the first strand of the study to inform a better development of the survey instrument. Knowledge and theory development from the interview process served to ensure that a reliable and consistent instrument is developed and tested quantitatively in the second strand. Furthermore, the researcher paid attention to detail in the questionnaire to avoid errors, confusion and inconsistencies in the measurements. The wording of the questions and statements were proper, free of jargon and ambiguity to avoid possible misinterpretations and to enhance reliability in the research process. The reliability of the instrument was evident in the Cronbach's alpha test that was carried out before implementing the instrument. The Cronbach's alpha coefficient was computed to verify the reliability of the responses. Responses are said to be consistent or reliable when the coefficient is more than 0.70 or equal to 0.70. The survey instrument used in the study was considered reliable because Cronbach's alpha was 0.94, as illustrated in Table 6 below.

**Table 6: Cronbach's coefficient alpha**

Cronbach's coefficient alpha	
Variables	Alpha
Raw	0.940896
Standardised	0.942381

The next section outlines ethical issues that were central to the research.

### **3.7 Ethical considerations**

Ethical issues such as gaining access to research sites, informed consent, confidentiality, and respect for the participants must be considered, whether the research uses qualitative, quantitative or mixed methods approaches. In the context of scientific inquiry, ethics are about the standards of behaviour that model the conduct of the researcher in relation to the rights of those involved in the process (Saunders et al. 2016). Punch (2014:43) posits that access to the research site or setting must be negotiated with relevant stakeholders or gatekeepers. Researchers must be sensitive to the research settings and show care to the social actors in the process (Ngulube 2015; Punch 2014; Bryman 2012). According to Ngulube (2015:128), the researcher must maintain ethical standards and sensitivities throughout the entire scientific inquiry process and be ethical at all times by treating the participants with utmost respect.

For collecting the required data to answer the research questions, the researcher negotiated with the relevant authorities of the research sites (SOEs). Saunders et al. (2012:231) summarises the ethical issues involved in research in terms of the following principles that a researcher must observe throughout the entire process as follows:

- Researcher's integrity and objectivity in the research process.
- Respect for the participants.
- Revealing the study procedures to the participants.
- Avoidance of harm of those involved.
- Privacy and confidentiality of those involved.
- Securing informed consent from the study participants.

- Responsibility in the data analysis and reporting of the findings.
- Compliance in the management of data.
- Ensuring protection of the researcher.

Carlin (2003:4) concurs that these overlapping practices are at the core of research ethics. Social research, as the name is self-explanatory, takes place in a social context involving people. A researcher must observe all relevant ethical issues and maintain good ethical behaviour throughout the entire study. According to Caruth (2013:115), ethical sensitivities that relate to qualitative and quantitative research designs are also relevant to mixed methods research because it is a combination of the two research approaches. All ethical issues and principles in qualitative and quantitative research designs, as illustrated above, are also ethical issues in mixed methods research (Ivankova 2015; Caruth 2013; Leedy & Ormrod 2013). In line with the advice given by Ngulube (2015b:128) regarding the treatment of the research subjects, the participants in the current research were treated with respect in the same way that one would expect them to respect the researcher. It was therefore extremely important to let the participants know exactly what the study is all about, what the likely benefits and impact of such endeavour are, and more so, to assure them of the confidentiality involved in the interview process. In line with *UNISA Policy on Research Ethics* (University of South Africa, 2007), which discourages unethical research conduct, the researcher respected the right of the participants to abstain from participating in the study and their right to terminate their participation at any time whenever they see it fit to do so. The researcher assured all participants in both data collection stages of their rights of participation and they gave their informed consent to partake in the study.

Knowledge management and HRM practices are very emotive issues in the organisations. Consequently, the nature of their responses remained confidential throughout the thesis, and the researcher of the current study assured the participants of their confidentiality and autonomy. As a result, the responses of the participants remained anonymous.

To sum up, this study adhered to all principles of conducting sound and ethical research, adhering to the codes of research ethics as prescribed by *UNISA Policy on Research Ethics*. Ethical clearance for the research was obtained from the College of Human Sciences Research



Ethics Committee, and the Department of Information Science gave ethical approval for the study (Reference # 218-CHS-0220 as attached in Appendix G). The researcher of the current study also obtained informed consent from all participants in both the qualitative and quantitative phases.

The next section presents an evaluation of the research methodology used in the study.

### **3.8 Evaluation of research methods**

Research methods play a crucial role in scientific knowledge creation. According to Ngulube (2015:125), the success of scholarly research depends much on the research methodology. Nevertheless, all research methods are vulnerable to some challenges and imperfections (Leedy & Ormond 2015; Ngulube 2005). It is for this reason that the evaluation of the research methodology used in one's study is important. Such a process serves to clarify the mistakes, biases and problems that a researcher would have experienced in the process of data collection and data analysis (Ngulube 2005). Concisely, the evaluation of a research methodology involves the process of interrogating the appropriateness and competence of the methodology applied to conduct a research study against other available options (Ngulube 2015). This should entail the highlighting of the limitations and advantages of the methodology used. Chaterera (2017:145) asserts that failure by a researcher to highlight errors and problems encountered in the research process represent a serious defect in the data and may create false impressions about the data. Therefore, it is crucial to evaluate methods and tools that were used in the process of collecting and analysing the data of the current study.

At the time of executing data collection strategy, state-owned enterprises were at the heart of the national discourse on the state capture project. The state capture phenomenon and the investigations of the state capture commission contributed to the limitation of the study since many state-owned enterprises were at the centre of the state capture project and were therefore reluctant to partake in the study. This was largely due to a level of uncertainty and media attention on issues pertaining state capture commission of inquiry.

The current study used a mixed methods research. Mixed methods research entails integrating qualitative and quantitative research approaches and data into one study (Ngulube 2020; Creswell & Plano Clark 2018; Plano Clark & Ivankova 2016). Like any other research method, MMR is prone to some difficulties and imperfections (Creswell & Creswell 2018). The data for the study was collected and analysed over a period of one year and eight months (2019 to 2020). It was evident that the mixed methods research study was taxing in terms of time and resources.

The study used an exploratory sequential design. In the qualitative strand of the study, it took the researcher in some instances up to four months negotiating and getting access to the SOEs. Furthermore, securing appointments with the HR managers had proven to be a major challenge, largely because these were people in senior management positions with huge responsibilities that come with tight schedules and deadlines. Therefore, making time available to sit in a lengthy research interview process was not a top priority for them. On average, the interview process with HR managers took about an hour, but there were a few instances where it took more than one hour to almost two hours. However, that was not surprising as these participants were experts in their field of work. Therefore, the researcher wanted to obtain as much information as possible to develop a complete picture of the research problem and related issues of the study from a human resource management perspective. The face-to-face interviews helped the researcher to obtain rich data from the experts in the HRM field. Nonetheless, collecting such data came with its own challenges because the researcher had to travel some distances across the Gauteng province of South Africa as the state-owned companies were scattered across the province. In some cases, the scheduled appointments for interviews were cancelled at the last minute when the researcher was already in the field. However, those challenges were compensated by obtaining the rich information that were finally collected in the field.

Access to and analysis of the annual reports were much easier since the annual reports as sources of information are publicly available documents. According to Creswell and Plano Clark (2018:279), MMR must be responsive to both qualitative and quantitative criteria as there is a distinct set of expectations for a MMR study beyond what is required for qualitative and quantitative research. Since the study followed an exploratory sequential design, the first qualitative component informed the development of the survey instrument for testing in the

second quantitative strand. Interviews conducted were recorded on an audio device and the recordings had to be transcribed to ensure a smooth analysis. Transcription services came at a cost in terms of money and time since the task was outsourced and it took about two months to complete. The preparation and analysis of the interview transcripts and annual reports for the qualitative phase were time-consuming and expensive.

Once the survey questionnaire was developed from the research findings of the qualitative component, the testing of the questionnaire with employees of SOEs in the quantitative strand also proved to be a challenge. Research strategy requires proper planning and timing to ensure effective data collection. The survey questionnaire was rolled out during national Coronavirus lockdowns and regulations prevented the researcher to access potential participants. The regulations also restricted the researcher to follow-up on previous visits. Of the nine SOEs that participated in the qualitative phase, only three allowed their employees to take part in the survey for the quantitative phase. It appeared that some of the SOEs and HR managers did not want to share their views on organisational knowledge loss and related issues with their employees. What could be deduced from the observation is that they could be hiding something or fearing that a different picture could emerge from the quantitative phase of the study. Therefore, the SOEs that took part in the quantitative phase of the study were fewer than those that took part in the qualitative phase. Indeed, in certain circumstances a contradictory picture regarding some variables emerged from the quantitative data because fewer SOEs participated in the survey. However, mixed methods research is praised for its ability to present multiple perspectives on a research phenomenon (Ngulube 2020, 2015; Creswell & Plano Clark 2018). Presenting some contrasting views on research problems and related issues is not a sign of weakness but rather a sign of strength of the MMR design (Creswell & Creswell 2018). Overall, the entire data collection and analysis process in the current MMR study was highly taxing with real benefits as well as some imperfections. Nevertheless, the methodology proved to be a valuable research method in investigating a complex research problem and played a crucial role in the formulation of a framework for the study. Having multiple perspectives on the research phenomenon is better than only one perspective.

The next section presents a summary of the chapter.

### **3.9 Summary of the chapter**

This chapter highlighted a number of methodological theories and issues that were relevant to the study. Philosophically, the chapter addressed key philosophical foundations supporting and informing the choice of pragmatism as the theory underpinning the study. Of course, as it is argued throughout the literature, the three main research philosophies, namely positivism, interpretivism and pragmatism differ ontologically, epistemologically, methodologically and axiological in how they approach research problems and settings. Epistemologically, the research embraced the subjective and objective nature of studying a research phenomenon. The subjective (qualitative) nature set out to develop theories, while in contrast, the objective (quantitative) nature was more about testing the theories developed in the first qualitative strand. Methodologically, the chapter highlighted common and relevant research approaches that provided a background understanding of the reasons for selecting mixed methods research as the appropriate approach to address the research phenomenon, objectives and questions of the study. Consequently, the study did not reject but rather embraced the quantitative-qualitative incompatibility thesis. The two approaches are compatible and perfect partners rather than enemies in any research study (Aliyu et al. 2014). Therefore, the researcher supported the logic that mixed method research complements, develops and strengthens the strengths while minimising the weaknesses of the quantitative-qualitative binary discourse.

This chapter also highlighted the importance of multiple-case study designs and exploratory sequential MMR designs as research strategies to guide the implementation of the study. In addition, the research techniques addressed in this chapter were open-ended interviewing, document analysis, survey questionnaire in the form of a Likert scale, and analysis of organisational documents. The chapter also highlighted the advantages and limitations of the research methods used in the study. The chapter concluded by addressing issues of validity and reliability and ethical issues pertinent to the study.

The next chapter presents and analyses evidential data to address the research problem, objectives and questions of the study. Thus, it operationalises the research strategy and methods discussed in this chapter.

## **CHAPTER FOUR**

### **PRESENTATION AND ANALYSIS OF RESULTS**

#### **4.1 Introduction**

In Chapter Three, the research paradigms, approaches, designs and techniques underpinning the study were discussed in detail. Chapter Three also provided a synopsis in terms of the background and nature of data for collection in this exploratory sequential mixed method research design.

In this chapter (Chapter Four), the analysis of the results obtained from qualitative interviews, annual reports and the quantitative questionnaire is discussed. The researcher presents empirical evidence of the qualitative phase of the exploratory sequential mixed method design, starting with the results from the interview protocol and the document analysis, followed by the analysis of the quantitative results. As was discussed in the previous chapter, this research study used mixed method research. MMR involves the gathering of qualitative and quantitative data in one study in response to research questions or exploring the research problems (Creswell & Creswell 2018; Johnson et al. 2007). Exploratory sequential design is a mixed method design adopted for the purpose of exploring and addressing the research objectives and questions of the study. In an exploratory sequential design, the collection of qualitative data and data analysis are given priority followed by the quantitative data collection and analysis (Creswell & Plano Clark 2018).

In this study, the results of the first qualitative interview phase were used to guide or inform the development of the survey instrument for testing in the second quantitative method. It is in that order of priority that this chapter starts by presenting the analysis of the results obtained through the interviews with human resource managers in the SOEs. The findings of the qualitative data collected through the interviews with human resource managers are presented first. The analysis of the annual report to address certain research objectives of the study then follows the qualitative analysis of the interview results. The data were collected to answer the research objectives of the study as outlined in Chapter One. For the purpose of coherence and understanding of the flow of the chapter, the research objectives are outlined as follows:

- a) To identify causes of organisational tacit knowledge loss in South African SOEs.
- b) To establish whether organisational knowledge and employees are recognised as sources of sustained competitive advantage.
- c) To establish whether organisational knowledge loss and its transfer are recognised and treated as KM or HRM or organisational issues in the selected SOEs.
- d) To establish the role of HRM in building and facilitating KM capabilities in the SOEs.
- e) To identify KM practices currently in place and their effectiveness in addressing the phenomenon of organisational tacit knowledge loss in the SOEs.
- f) To determine knowledge-driven HRM practices, their role and effectiveness in reducing loss of organisational tacit knowledge.
- g) To establish whether organisational culture and structures support knowledge management and the role of HRM in building knowledge-driven culture and design in the SOEs.
- h) To assess the overall impact of HRM practices in facilitating the management and reduction of organisational knowledge loss in the SOEs.
- i) To identify areas and gaps for alignment and integration of HRM practices in managing impending organisational knowledge loss risks in the SOEs.

The next section outlines the approach used in the presentation of the research results.

#### **4.2 Response rate and participants' profile**

Given the fact that this study is a mixed method research study that used an exploratory sequential design, the presentation of the results is done in two parts, starting with the qualitative research results from the interviews and document analysis, followed by the quantitative research results. The interview protocol was applied as the main data collection technique in the qualitative phase of the study. Furthermore, document analysis was done in a limited manner to clarify certain research objectives in the qualitative phase. Interviews were conducted with twenty human resource managers in the nine selected SOEs.

According to Creswell and Plano Clark (2018:188), the sample size in the qualitative phase of MMR is usually smaller than a quantitative sample. Twenty HR managers were deemed to be sufficient in the qualitative phase for the purpose of gathering and developing knowledge on the research problem. It is common for a qualitative researcher to investigate fewer cases or individuals, ranging from 1 to 40, because the main aim is to generate an in-depth picture of the research phenomenon (Creswell 2014). A sample of twenty HR managers was sufficient and useful in gathering a rigorous and in-depth exploration and examination of the research topic and problem. Creswell (2014:231) cautions against the use of larger samples in qualitative research as that may present superficial perspectives. A sampling strategy and sample size did not play an important role in the selection of a sample of HR managers (Kumar 2014). The purpose of the first qualitative component was to explore the diversity of views articulated on the topic and related research issues.

In the quantitative component of the study, the main purpose was to objectively generalise the results of the study to a population (Creswell & Plano Clark 2018). In the quantitative phase, a survey instrument was distributed to 585 employees and knowledge management practitioners in the SOEs the sector. In total, 145 respondents completed and returned the online questionnaire. These 145 respondents represented 25% response rate. A response rate of 25% was sufficient for the exploratory factor analysis, which was aimed at establishing a correlation coefficient between the variables and factors. According to Hair et al. (2014:115), a sample size of 100 or larger is significant for exploratory factor analysis.

The next section presents the analysis of the findings in the qualitative interview phase.

### **4.3 Presentation of the qualitative interview results**

This section presents the actual findings collected through the interviews with twenty human resource managers in selected South African SOEs, as illustrated in the Table 7. Non-probability sampling was used to collect research data from nine participating SOEs.

**Table 7: Participating SOEs from which research participants were drawn**

<b>SOE sector</b>	<b>Number of participating SOEs</b>	<b>Number of human resource managers interviewed</b>
Development finance sector	2	7
Water utility sector	1	3
Service sector	2	3
Compliance and regulatory sector	2	4
Research councils sector	2	3
<b>Total</b>	<b>9</b>	<b>20</b>

The next subsection examines the causes of organisational tacit knowledge loss in the SOEs.

#### **4.3.1 Causes of organisational tacit knowledge loss**

The results revealed various factors that contributed to the loss of organisational knowledge in the SOEs. Voluntary turnover in the form of resignations and involuntary turnover in the form of the ageing workforce, retirements, deaths and employment-related termination were problem areas contributing to knowledge loss in the participating organisations. Voluntary turnover ranked very high as the main cause of knowledge loss in the SOEs and remains a problem area for human resource managers. Many of the human resource managers cited voluntary turnover as the main cause of organisational knowledge loss in some of the SOEs, especially in those companies with a high turnover rate. About sixteen of the interviewees indicated that resignations were the main cause of organisational knowledge loss. Furthermore, the absence of a retention strategy to retain knowledge workers with scarce skills complicated the situation pertaining to organisational knowledge loss. An interviewee from SOE5 alluded to this:

Yes, also the voluntary turnover as well, because we do not have the retention strategy whereby we say that we will retain this scarce critical skills, those technical skills (Interviewee #19, 2019).



However, two out of the nine companies indicated that turnover is not an issue. This was attributed to the high staff retention as alluded by an interviewee as follows:

Our retention rate right now is like 98%. We do not lose; we have a talent management framework that is based on those critical skills and those critical people. So our retention rate, we have a target from our balance is 95% but we are doing very well at 98% (Interviewee #2, 2019).

Voluntary turnover was serious problem area in 78% of the participating SOEs. It was only in two state-owned companies (22%) where it was not a problem. Voluntary turnover in another company seemed to be unique and a revolving door. One HR manager from an SOE operating in the compliance and regulatory sector strongly argued that in this way:

Not very high, but also, our turnover is so interesting because it is a revolving door. A lot of them leave and come back within a year, sometimes even under a year. So, in a way we feel like do we even classify it as turnover, because you left literally for like six months and you come back. Again, it is purely because we do not offer admission as an attorney, right? So, you get our people who are experienced and we understand that they then leave to go just to get their articles, and then they come back (Interviewee #4, 2019).

An ageing workforce remains a challenge in the oldest SOEs, especially those without a knowledge retention strategy. Retirement forced employees to leave. One human resource manager from SOE5 postulated that:

With retirement, you are forced to leave. You do not have an option, so it is involuntary. Let me put it this way: You do not leave because you are ready; you leave because the situation forces you to leave. The question was, what have we done to document the skills, or for the skills to be transferred (Interviewee #20, 2019).

A lack of knowledge retention strategy for the ageing workforce going on retirement was another serious problem area.

The human resource managers who participated in the interview also noted that apart from voluntary and involuntary turnover, a lack of information technology systems to manage

knowledge, fixed-term employment contracts, employment equity and organisational culture also contributed to knowledge loss in their SOEs. Employment equity remains a contentious issue to some human resource managers. Some argued that the employment equity policy pushes people to look outside organisational boundaries, thus contributing to voluntary turnover resulting in organisational knowledge loss. One human resource manager captured the sentiment as follows:

Employment equity is a problem because it is favouring black people. A whole lot of white people feel they are not being promoted because of employment equity (Interviewee #20, 2019).

However, there was a difference of opinions on employment equity as a contributor to voluntary turnover and subsequent knowledge loss. All human resource managers interviewed shared a common understanding of employment equity as a labour compliance issue in the workplace.

The next section presents data on the recognition and treatment of organisational knowledge loss in the participating SOEs.

#### **4.3.2 Recognition and treatment of organisational knowledge loss**

Recognition of organisational knowledge as a key resource and source of competitive advantage is an important trigger for management intervention. On the interview question of whether SOEs recognise knowledge loss as a key strategic issue, almost all human resource managers affirmed that knowledge loss is an organisational issue requiring the responsibility of everybody, including line management, to mitigate the risk of losing it. All the twenty HR managers shared the sentiment that knowledge loss cannot be dealt with only by HR or KM departments, thus emphasising the need for it to be driven from the top echelon in the organisations. In a particular SOE with a knowledge management structure, one of the HR managers postulated the perspective as follows:

Yes, and that is the reason why we would talk about retention. With retention it says ‘let us keep the knowledge in as much as we can and let us share the knowledge.’ So, they definitely see it as a key strategic issue (Interviewee #1, 2019).

However, they differed on how knowledge loss is treated in their organisations. Some felt that their organisations were not doing enough in treating knowledge as an organisational resource. For that reason, they lamented a lack of systems and strategies for failure to treat it as an organisational strategic resource. For an example, one interviewee postulated the sentiment as follows:

I think, from an organisational perspective, we are aware and alarmed a bit about it. However, I do not think in HR, if I have to locate it now, we frame it as such. We speak about retention broadly and attrition broadly but not in terms of institutional memory loss or knowledge loss (Interviewee #8, 2019).

In a nutshell, a lack of understanding of the link between attrition and knowledge loss was another indicator of a problem in this particular case.

The data indicated that human resource managers have not taken ownership of organisational knowledge loss in their respective SOEs. One agitated human resource manager strongly expressed it this way:

I do not think we have done a great job and I qualify that in that we have not put in place structured or formal mechanism to document knowledge and for knowledge transfer to happen in a co-ordinated way. If it has happened, it happened organically because people kind of would share and learn throughout their careers, but we have not formalised it and therefore I do not believe we as an HR team have taken the ownership of organisational knowledge loss (Interviewee #16, 2019).

On the question of whether the organisation puts knowledge and human resources at the centre of the business strategy, the majority of participants affirmed that it was the case. However, some of the HR managers provided a contradictory response. They said that their companies do not put knowledge and their employees at the centre of their business strategy. One such view was expressed this way:

Why I am saying no is because I do not have anything that says we are deliberately doing, we are trying, I am using no, it is more than no, to say there are very little or nothing. That would

say we put knowledge and human resource at the centre of the business strategy, you see?  
(Interview #18, 2019).

Furthermore, it seems that although many human resource managers agreed that their companies positively treat and prioritise knowledge and their employees in the organisational strategy as sources of sustained competitive advantage, there were others whose position on the matter was to the extreme opposite. One respondent expressed this as follows:

We have a lot of people who are knowledgeable in this organisation ... but these people, they feel like dwarfs, if I may use the word “dwarf” because they are not properly utilised. They are just bounced into the roles that they are appointed into (Interviewee #18, 2019).

However, three SOEs that have institutionalised the management of organisational knowledge through dedicated KM units in their structure indicated their role in taking ownership of knowledge loss. One HR manager captured the position as follows:

We need to ensure that the knowledge that we have, that we harness it. We harness it and protect it and, hence, they have established a function, which is called Knowledge Management, within the Human Capital Division (Interviewee #6, 2019).

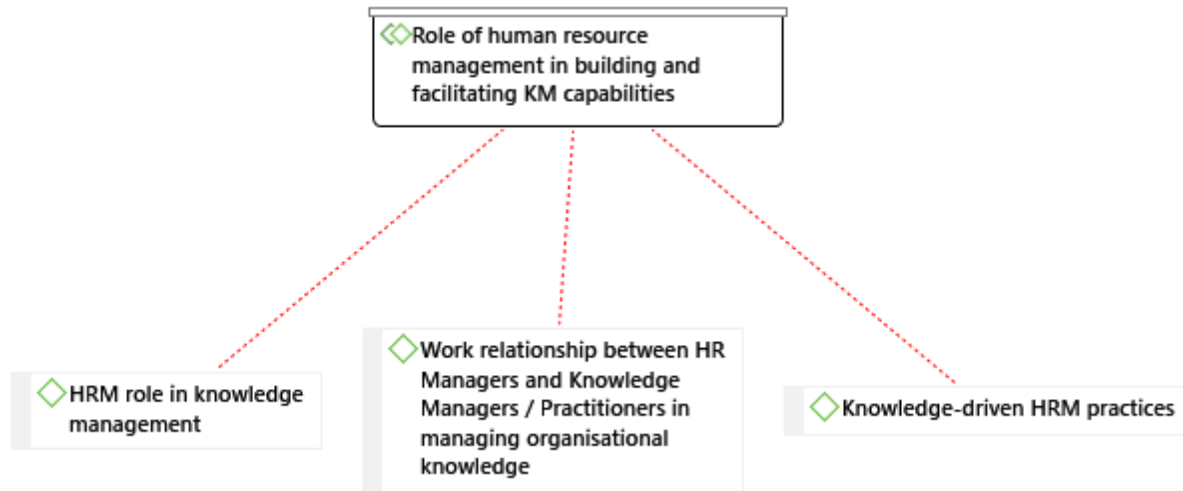
In summary, the nine SOEs that participated in the qualitative interview phase, all viewed knowledge as a resource demanding a management intervention in one way or the other from different stakeholders. The data collected and the data analysis point to the fact that they differ in terms of how they recognise and treat knowledge and their employees as sources of competitive advantage.

The next section attempts to establish the role of HRM in building and facilitating knowledge management capabilities in the SOEs.

### **4.3.3 The role of human resource management in building and facilitating knowledge management capabilities**

The focus of this research objective was to determine the role of HRM in managing organisational knowledge, to identify HRM practices that enhance KM capabilities, and lastly, to

establish the extent of work relationship between HR managers and KM practitioners. The network diagram in Figure 13 illustrates how the research objective and related questions were addressed for this particular section.



**Figure 13: Network diagram of the role of HRM in building KM capabilities**

The next section provides answers to the research questions seeking to establish the role of HRM in building and facilitating KM capabilities in the selected SOEs.

#### **4.3.3.1 The role of human resources in knowledge management**

This section examines the specific roles that HRM can play in shaping behaviours towards KM activities. On the research question of whether there is a role for HRM in the KM processes of the organisation, all HR managers indicated that they see a role for HRM in supporting KM activities. This is regardless of whether their organisations have a knowledge management function or not. They see their role in shaping KM behaviours starting from the recruitment to the retention of talent, to capacity development in terms of learning and development (training and development), workplace skills gap analysis, coaching and mentoring programmes, succession planning, carrying out exit interviews, creating knowledge management awareness, driving talent management strategy, performance management and organisational culture. An HR manager in SOE1 with a dedicated KM function, captured that role in this way:

Yes, I think it's how we are going to make sure these things are in leadership roles, so we can hold them accountable for their capabilities in their teams, so if I am drawing up a profile for a line manager, that line manager profile should build capabilities in their areas and must build succession and shadowing within the areas. You will see it in my performance contract. I have each line manager has their perspectives in terms of critical staff. The line management needs to build up recruitment and retention plans for critical staff in areas of responsibility. They need to implement and monitor values of the staff in terms of making sure that they are the right culture. I need to identify strategic skills gaps within the operations including succession planning and interim training for all my staff. I need to track and monitor their performance and this is cascaded down for line managers (Interviewee #3, 2019).

Currently, the role of HRM in building knowledge management capabilities seems to be on the periphery of some of the SOEs that had not institutionalised knowledge management in their processes and structures. It is important to note that out of nine SOEs that participated in the study, only three companies had a fully dedicated knowledge management unit in their structure. An interviewee of SOE9 without a dedicated KM unit in the organisational structure, alluded that:

I do, but it is not central but more on the periphery and in a supportive way, but like I said: we have not really articulated how we will support and respond (Interviewee 16, 2019).

Indeed, human resource managers acknowledged their role in building knowledge management capabilities. HR managers saw the need for collaborating with knowledge management partners in building capabilities. There was a common understanding amongst the HR managers who were interviewed that their role cannot be separated from knowledge management activities of the organisation. Knowledge management is about people and human resource management is the custodian of that process. An interviewee from SOE5 captured this role as follows:

I think we are human resource; we are mostly in the cold front dealing with people on a daily basis. Whether you like it or not, humans will always be part of you. You cannot divorce yourself from dealing with people (Interviewee #20, 2019).

This aligns very much with the sentiments of many of the HR managers (twelve out of twenty) who were interviewed. They emphasised their role as one of creating an awareness of the

importance of the organisational knowledge and the management thereof. One interviewee from SOE4, in the compliance and regulatory sector, expressed the issue of awareness as follows:

I think yes. The first thing is that HR needs to be able to bring awareness, because HR and IT are the most important people in this space; IT from a point of view of giving the systems we need, like a repository, but HR must bring that awareness to say when we lose people, sometimes it can impact on the operations. How do we make sure that we keep that repository? Therefore, that is awareness from us (Interviewee #11, 2019).

However, the problem is that some HR managers still see IT systems as a solution to knowledge management issues in their organisations, despite being the custodians of people management practices. The role of human resource management in knowledge management is inevitable, irrespective of whether there is a formalised knowledge management structure or not.

The next section discusses work relationships and dynamics between human resource managers and knowledge management practitioners.

#### **4.3.3.2 Work relationship between human resource managers and knowledge management practitioners**

This section examines the relationship of human resource managers and knowledge manager practitioners in managing organisational knowledge. Responses to the following question was mixed: *How close are you as HR Manager in working with knowledge managers or practitioners in managing organisational knowledge?* In the case of three SOEs where the management of knowledge was formally institutionalised, the data revealed that a certain degree of close relationship and collaboration existed, although there were room for improvement. One interviewee captured it as follows:

We do not work with them that much because they extract the knowledge from the business. They have their processes in place and we have our processes in place. It integrates more along the line, for example if we are doing an operating line review, the operational line review was to take the bank to a higher level of performance in terms of what they are going to deliver, they will then come to us and say “okay, what are the lessons learned?” What are the skills we need

to retain? And so on, so where HR is involved they will come and work with us (Interviewee #3, 2019).

Another interviewee captured the collaboration between human resource managers and the KM unit as follows:

We work with in collaboration with the knowledge management unit. When they do brown bag sessions, we are part of those brown bag sessions. Some of them they lead and some of them we work together. However, we are there because that is part of the knowledge management (Interviewee #2, 2019).

On the negative side of the mixed bag, there were visible frustrations. This was very much so in one company where the knowledge management function was not so well conceptualised in the structure, thus creating confusion about issues affecting the management of organisational knowledge. For instance, there was a position of General Manager: IT and Knowledge Management, but not many KM initiatives originated from that position. However, there was another executive within the group who was tasked with championing KM. The two HR managers from SOE5 expressed their frustrations as follows:

According to me, I do not see it, I do not feel it. We have individuals; I know that we have a GM, IT and Knowledge Management. What that means, for me that is a library and records. Therefore, it ends there. That is why I am saying that for him to be called GM: IT and Knowledge Management, for me it is very confusing. Hence, I want to clarify on that (Interviewee #18, 2019).

Another HR manager contended to these frustrations in the following way:

I know that there is somebody at the group strategy level who is dealing with knowledge management [but] he does not even engage with us in terms of whatever initiatives or whatever objectives he need to do in his line of thoughts so that, maybe, we can assist and form a value chain. I even think that knowledge management is situated at the wrong place. Maybe, if we can partner capacity building and knowledge management to be in one area, to be within the strategic human capital (Interviewee #19, 2019).



For knowledge management to thrive in the organisation, there needs to be strong partnerships between the relevant role players. However, two HR managers of two different organisations that have a KM unit in their structure, have indicated that synergy is absent. A lack of synergy was a problem area. Another human resource manager of a different SOE that has a KM system, emphasised a lack of synergy as follows:

We are far. We are far. Like I said, that we come in at the tail end, and it is just a tick-box exercise, which I do not think does much justice to the process (Interviewee #8, 2019).

The next section identifies HR practices that are knowledge-driven and thus enhancing knowledge management capabilities in the organisations.

#### **4.3.3.3 Knowledge-driven human resource management practices**

This section identifies specific human resource management practices that can be used to shape attitudes and behaviours in support of knowledge management activities in the SOEs. HR practitioners were asked: *What do you consider key HRM practices that enhance knowledge management capabilities in the organisation?* Their responses are summarised as follows:

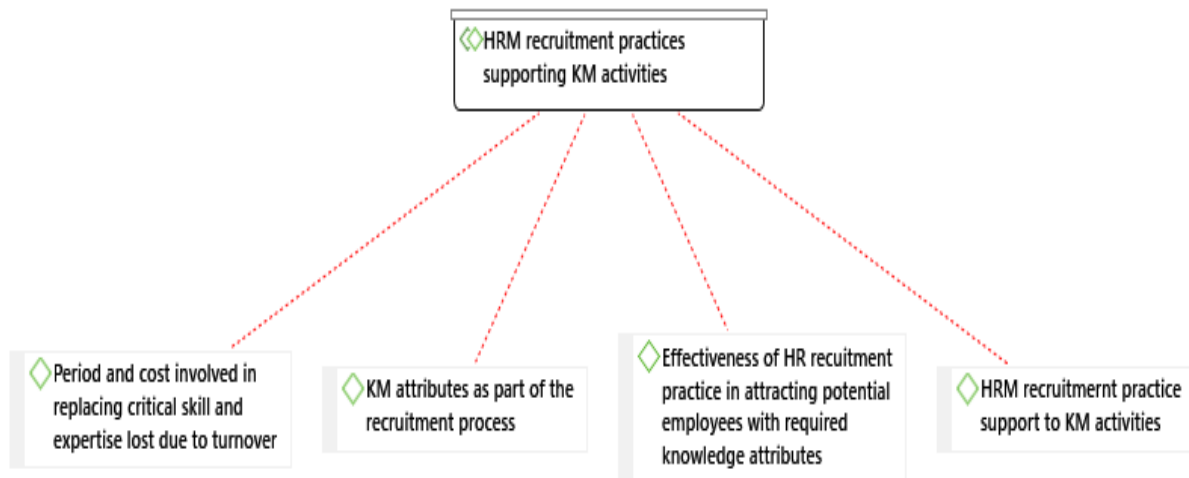
- Recruitment
- Training and development (learning and development)
- Talent management
- Culture management
- Organisational development (organisational design)
- Retention
- Compensation
- Performance management

These practices were at the heart of human resource management system across the organisations. It was equally important to determine how and in what way do they build knowledge management capabilities and behaviours.

The next section deals with the research objective regarding how human resource management practices support knowledge management activities in the selected SOEs. The genesis of that support starts with the examination of the HR recruitment practice.

#### 4.3.4 Human resource recruitment practice supporting knowledge management activities

The purpose of this section is to address the research questions on how specific human resource recruitment practice support knowledge management activities and behaviours in the selected SOEs. The researcher navigated this specific research objective by examining (a) the specific role of recruitment practices to support KM activities, (b) the period and costs involved in replacing critical skills that are lost due to turnover, (c) the knowledge management attributes that are part of the recruitment, and (d) the effectiveness of the recruitment practice in attracting potential employees with the required knowledge attributes. This is illustrated in Figure 14 below.



**Figure 14: Network diagram of the role of HRM practice supporting KM**

The next subsection explores the role of human resource recruitment practices in supporting knowledge management activities.

#### **4.3.4.1 Human resource recruitment practices supporting knowledge management activities**

All twenty human resource managers who were interviewed, contended that their recruitment practices support their companies in the identification and recruitment of potential candidates who possess the required knowledge, skills and expertise. Human resource managers were primarily responsible for sourcing talent. However, the approach in the execution of the process differed from one company to another. Four of the SOEs considered only technical competencies, whereas in the remaining five SOEs the human resource managers considered both technical and behavioural competencies part of the recruitment process. Competency-based interviewing or assessment was a specific tool used in the selected SOEs. The human resource manager in SOE1, operating in the development finance sector, summarised their role in the recruitment process as follows:

The way we do our recruitment process is we would firstly obviously screen and as we screen we are looking for this person with the minimum requirements. In addition, in terms of minimum requirement, we are not only looking for qualifications; there is experience that we are looking for. If, for an example, we were looking for an investment officer, we would look for somebody who has worked in a banking environment with the knowledge for investment banker that is the knowledge we are looking for. Now, when we have screened, we move to the interview, in the interview we use competency-based assessments. So, with competency-based interviewing we would say: 'Give us practical examples of when you have done this.' So, basically we check if this person understands, meaning does this person have the knowledge, has this person applied it and has this person gotten results (Interviewee #3, 2019).

With competency-based interviewing, human resource managers were able to identify gaps and close them through personal development plans. They contributed towards the knowledge development of those individual workers. It was common understanding that when the human resource recruitment process started advertising for a position, the adverts were structured to identify specific skills, knowledge and attributes that are required for the job. Briefly, human resource practices played an important role in this regard.

Though the human resource managers were in agreement about the process of how human resources are acquired, they had different opinions about specific knowledge management requirements. For instance, some of them specifically looked for specific knowledge behavioural competencies such as knowledge sharing, succession planning, collaboration and networking capabilities, teamwork, coaching and mentoring. One interviewee summarised how they focused on specific knowledge behavioural competencies as follows:

Therefore, so you would want individuals who are team players, yeah. You want people who are team players. Who are willing to share information, to coach and mentor, and mentor others (Interviewee #6, 2019).

On the contrary, many of the HR managers indicated that the focus on specific knowledge-behavioural competencies remained a challenge, largely because of the lack of KM language and understanding.

I think our recruitment process focuses very much on having the relevant knowledge and experience. We do not emphasise enough the ability to learn as well as the ability to collaborate and network and I say that because in an interview; I can tell you all that I can do but we do not target or we do not frame our process to assess to what extent XX is able to collaborate (Interviewee #16, 2019).

The articulation of specific knowledge management behaviours in the recruitment process remained a problem area in many SOEs. The next sub-section provides an analysis pertaining the time and cost involved in replacing critical skills lost due to voluntary turnover.

#### **4.3.4.2 Time and costs involved in replacing critical skills lost due to voluntary turnover**

This subsection examines the time it takes for human resource managers in SOEs to replace critical skills lost due to employees resigning from their positions and the costs implications thereof. It addresses the following research question: *How long does it take the SOEs to replace the critical skills and expertise lost due to voluntary turnover, and at what cost?*

Eight human resource managers indicated that it takes them three to six months to replace critical skills lost due to voluntary turnover, while another eight human resource managers indicated that

it takes them six months to a year to close the gap caused by turnover. Furthermore, one human resource manager indicated it takes them one to two years, and another one to two years, or even longer in exceptional cases, to replace critical skills lost because of voluntary turnover. This is illustrated in Table 8.

**Table 8: Time it takes to replace critical skills lost due to voluntary turnover**

<b>Duration</b>	<b>Number of HR Managers</b>
Within 3 to 6 months	8
Within 6 months to 1 year	8
Within 1 to 2 years	1
More than 2 years	1
<b>Total</b>	<b>20</b>

In some cases, organisational policies on recruitment contained a specific period in which to fill a vacant critical position in the engineering sector, and some companies struggled to meet the deadlines stipulated in the policy. For instance, an HR manager of SOE5 indicated that it took them more than two years to fill a mission-critical position in their engineering division because it was difficult to attract people with relevant skills. In the engineering market industry such skills comes at a premium and it was proving extremely difficult for this particular SOE to afford the required skills. The experience of the HR manager was strongly expressed as follows:

Two years plus, I must say. Because I am having example of that within my area. I arrived at an XY station in 2014, whereby there was these positions of principal electrical engineer, and principal mechanical engineer. Therefore, we have been having those positions for a long time; I think we closed one position now in February or March 2019. Yes, so we could not attract that skill, and another thing is our market salary scales are not competitive. Some of them we cannot afford (Interview #19, 2019).

The more scarce a skill is, the more expensive it becomes because it comes at a premium and companies pay high costs to acquire scarce skills. Voluntary turnover causes a serious threat to organisational knowledge loss and affects the productivity of organisations facing such challenges. Moreover, the HR managers indicated that the cost implications of replacing mission-critical skills are huge in terms of both direct and indirect costs. The direct costs

experienced by the human resource managers comprised recruitment costs, which included the cost of advertising the positions in the media, headhunt costs and acting allowance costs. In addition to that, because these positions were critical, the companies that experienced these problems had to find people to execute the tasks in acting capacities. In some cases, employees who were in acting positions, also had to deal with job rotations. This created other problems for the SOEs in terms of indirect costs involved in replacing a critical skill. The indirect costs included additional workload for those in acting appointments, resulting in burnout, loss of productivity and service delivery costs. What complicated this problem even more, is the fact that the human resource managers did not have a mechanism to quantify the impact of losing a critical skill due to voluntary turnover. The lack of a mechanism to quantify the impact of losing a critical skill was a problem. One human resource manager of SOE9 expressed it in this way:

In our case, that lull in losing critical skills cost us a hell of a lot of money, both direct and indirect. So, direct costs, we can quantify that in terms of loss of productivity or acting allowances that we have to pay to people; so that is easy to quantify. But I think the unquantifiable is in terms of your dip in productivity. Very often we do not quantify that and also what we are not quantifying as actively as we should, because we lose skills, the remaining people in the team will have to pick up more and so it places a strain on that. Therefore, burnout, sick and that kind of things, so those are huge costs that, indirect costs, that cannot be quantified and those are the costs that costs us the most (Interviewee #16, 2019).

It is worrying that many of the participating SOEs, in a study like this one, experienced these complex human-capacity challenges; yet they did not have a formal knowledge management function or structure, strategy and processes.

The next sub-section examines knowledge management attributes that the HR managers focus on as part of the recruitment process and the reasons why they focus on such attributes.

#### **4.3.4.3 Knowledge management attributes as part of the recruitment process**

The section identifies the knowledge management attributes that HR managers in the selected SOEs focused on in the recruitment process, and their reasoning behind that.

About ten human resource managers in three of the SOEs identified knowledge sharing, learning, training, succession planning, collaboration and networking capabilities, innovation, teamwork (team players), coaching and mentoring as knowledge behavioural competencies. Their companies focused on knowledge behavioural competencies as part of the recruitment strategy. They argued that such a focus assists them in identifying and shaping knowledge management behaviours, thus contributing towards the desired organisational culture in those companies. The other nine human resource managers indicated that in one way or other they consider such attributes, though they cannot label them as knowledge behaviours because of their limited knowledge of the topic. An interviewee of SOE5, in the water sector, captured the sentiment as follows:

The knowledge management language is not our language, you see, because if you start now, having a unit Knowledge Management that is running in collaboration with us, we can start having a language here of knowledge sharing. So we do check for those competencies but we do not give them that name. Why, because it is not in our vocabulary (Interviewee #18, 2019).

Only one HR manager of SOE4, in the compliance and regulatory sector, indicated that they do not focus on KM attributes at all. However, human resource managers who focused on specific knowledge-behavioural competencies, advanced the following reasons for their focus on these competencies:

- They need to ensure that employees will fit into the team (team fitness) and the organisational culture (culture fit), as they emphasise the fact that culture differs from one organisation to another.
- Longevity of the employees in their organisation.
- Alignment of the organisation to these knowledge attributes.
- Sustainability of their organisations.
- The intention to appoint employees who are efficient, thus enabling.
- Organisational productivity, sustainability and sustained competitive advantage.

The next section examines the effectiveness of the recruitment practice in attracting employees with the required knowledge attributes.

#### **4.3.4.4 Effectiveness of human resource recruitment practices in attracting potential employees with required knowledge attributes**

The purpose of this subsection is to present the opinions of HR managers on the effectiveness of their recruitment practices. Out of twenty human resource managers interviewed, fifteen indicated that their recruitment process is effective in attracting potential employees with the required relevant knowledge attributes, whilst five responded on the contrary, emphasising the fact that their practices are not effective. Human resource managers who said that their organisations are effective in attracting employees with the required knowledge and skills attributed their success to internal recruitment. An interviewee of SOE2 expressed the internal recruitment process as follows:

I think on that process we have an above-average process. We also focus on building our own timber in terms of having own people, so that as they grow.... It is a graduate program. It is an experiential program. In terms of the core function, very minimum people have exposure of what we do. Therefore, the best thing is to identify our own people and get them the exposure through some specific relevant training interventions (Interviewee #5, 2019).

Six human resource managers in two of the SOEs attributed the high staff retention rate to the effectiveness of their recruitment practice. In addition, their companies' brand power, competitive remuneration benefits, organisational learning culture and compelling employee value proposition helped them to retain their talent. In contrast, the other nine HR managers indicated that while their recruitment practice is very effective, it is not the case with retaining employees. And that accelerated voluntary turnover in those companies. This was a problem for many of the SOEs that participated in the study. Five human resource managers indicated that their recruitment practices are not effective, largely due to a struggle to find the right calibre of people at the right price. One HR manager of SOE9 posited their frustration in this way:

I think we struggle to find the right calibre of people at the right price. So we find people and when we find these people, sometimes they are unaffordable to us because they are in the open market out there. Therefore, from an affordability point of view, we cannot afford to bring them on board at the price that they are coming at and then we either have to go for second best and



so it does take us quite often, closer to six months to find a critical resource (Interviewee #16, 2019).

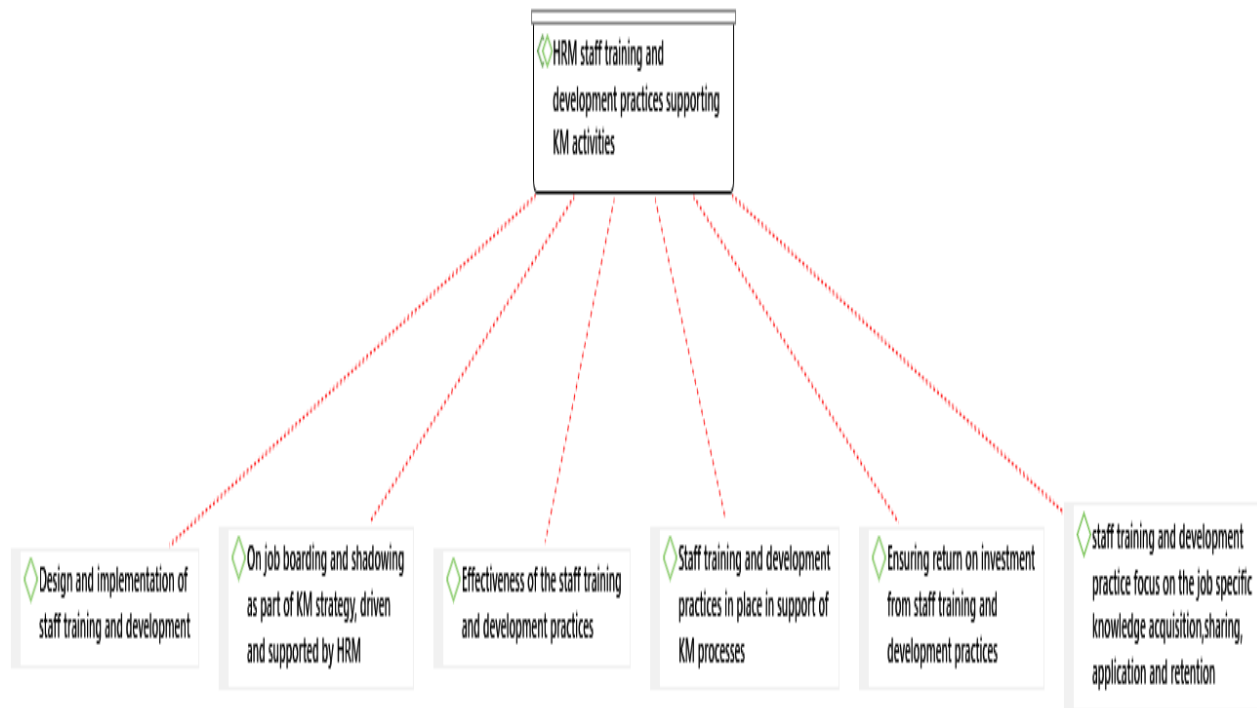
Many of the SOEs were very effective at recruiting talent but not so effective at retaining talent, which was a problem because this encouraged their employees to look somewhere else, resulting in high voluntary turnover rates. Consequently, this situation contributed to knowledge loss in those companies.

The next section explores the role of HRM staff in training and development practices that support knowledge management activities in the organisations.

#### **4.3.5 Human resource management training and development practices that support knowledge management activities**

The purpose of this section is to address the research objective: *How do specific human resource training and development practices support knowledge management activities and behaviour in selected SOEs.*

The researcher addressed this specific research objective by examining the specific research questions on the role of staff training and development practices in place (as part of a KM strategy driven by HR) to support KM activities, job boarding and job shadowing, the design and implementation of the training, return on investment from the practices, and the effectiveness of the practices. The network diagram in Figure 15 illustrates how this particular research objective was addressed.



**Figure 15: HRM training and development practices supporting KM activities**

Subsection 4.3.5.1 provides answers to the following research question: *What knowledge-driven staff training and development practices do you have in place to support knowledge management processes such as knowledge creation, transfer, retention and use?*

#### **4.3.5.1 Staff training and development practices that support knowledge management processes**

The purpose of this subsection is to identify staff training and development practices or strategies that were knowledge-driven and that supported knowledge management processes in selected SOEs. The human resource managers identified the following strategies as supportive to knowledge management processes like knowledge creation, use, sharing and retention:

- Learning and development
- Workplace skills plans (WSP), including skills audit and skills matrix tools
- Coaching and mentorship programmes
- Talent management strategies

- Leadership development
- Technical development
- Chartered accountant training programmes
- Academic training and development
- Research programmes such as post-doctoral fellowships, and master's and PhD internships
- Investment in bursaries and training
- In-house academies and training centres
- Internal training courses
- Experiential learning programmes
- Job shadowing
- On-the-job training
- On-the-job boarding (induction programmes)
- Train the trainer
- Knowledge transfer sessions
- Graduate programmes
- Job rotations
- Secondments (seconded into other positions)
- Master classes
- Specific capacity development targets
- Internal promotions
- Communities of practice (CoPs)
- Communities of mentoring (CoMs)
- Professional workshops, training courses and conferences (both local and international)
- Personal development plans

Many of the SOEs indicated that their organisational policies on training limited the number of training that the employees may attend per year. An HR manager at SOE1 captured it as follows:

In terms of staff training, right now every employee of the organisation is given at least a minimum of four courses per year to attend, and that would include conferences that would include their own personal development get through our performance management so, there is a whole lot, we have a training menu (Interviewee #2, 2019).

Considering the above-mentioned strategies, it is apparent that SOEs invest much in capacitating their knowledge workers. Knowledge acquisition and development is a very deliberate action on the side of employers, hence, they made large investments in the training and development or capacity development initiatives. However, training and capacitating employees may have good intentions, but sharing of knowledge remained an area of concern for human resource managers in those SOEs. Knowledge sharing and knowledge retention remained serious problem areas.

The next subsection examines the development and implementation of these training and development practices.

#### **4.3.5.2 Design and implementation of staff training and development**

After having identified various training and development strategies geared towards capacitating knowledge management in the SOEs, it is equally important to examine how that practices are designed and implemented. This subsection does that. According to the interviewees, the design originates from the annual performance review process and personal development plans (PDPs). Skill gaps are then captured in the organisational workplace skill plans (WSP) for training and development intervention. All human resource managers indicated that they have workplace skill plans, largely because it is a regulatory compliance requirement for state entities in South Africa to have those plans. An interviewee in of SOE3 expressed the matter as follows:

Regarding workplace skills plans, we make a list of all training requirements for that particular skills plan which is the requirement for SETA where we submit a report that says that particular year. This is the training that we going to embark on and as much as possible we try to align to APP, which is the annual performance plan. Therefore, what we do is at the beginning of financial year we prioritise those areas also drawing from the employees individual development plan (IDP) then we consolidate a plan (Interviewee #4, 2019).

Concisely, the design and implementation of the training and development practices was informed by various factors such as a WSP, competence-models, skills audit and skills matrix, individual development plans, annual performance plans and reviews. The genesis of the design is at the individual level where the employee expresses a need to attend an internal or external training intervention. Some of the companies indicated that they have competence frameworks in place that outline the nature of skills required, and sometimes those SOEs have to organise quite a number of training interventions to achieve their goals. Apart from the skills audit, the direction of the corporate strategy and performance review process also informs the design of staff training and development. Performance reviews also serve as an enforcement mechanism to ensure that employees attend the training and development interventions. One interviewee expressed the process in this way:

As part of our performance management process, we do have annual performance, which includes a development plan to say; in the next financial year, what part of your skills do we need to develop. Therefore, there is a focus, as I said up front on technical training and by virtue of that, it is geared towards making us ready for the future. Fortunately, it has not been by design, it has been more by default, out of necessity. The other training generally happens because people have a need and so it is very difficult for us to study forward for the year to say what training we are going to do. We have gotten a lot better at it this year, we have asked for all IDPs to come in so that we can rather identify training needs (Interviewee #16, 2019).

In all the participating state entities, much of the design and implementation process is aligned to the corporate strategy for the next five-year period. For most of them, five years seems to be an appreciation of where they want to be. As such, the implementation attempts to address the current and future knowledge and skills needs that are required. However, for some of them the implementation encountered a problem, mainly because of budgetary constraints as most of them relied on state funding. An HR manager at SOE3 expressed the implementation problems as follows:

Treasury has cut down our money now; they used to give us such a big allocation and we are trying to play around with where we can take, and where we can take money from...because we do not want to touch this. It is so important to us (Interviewee #8, 2019).

Given the financial and funding challenges facing many SOEs, and given the priority and the importance of the matter, it seems that the need for a particular external development intervention had become the norm in some organisations. About ten of the interviewees emphasised the urgency of prioritising who should attend external training interventions, especially training on the type of knowledge and skills that are required in future. One of them captured the mood as follows:

We are starting of course with critical roles, those that we have identified as critical roles. All people at senior level, who are occupying senior roles and those who are occupying critical roles. There will be an intended effort, deliberate effort to expose them to the development areas so that training that would best equip them for the next era (Interviewee #9, 2019).

It is equally important to note that the ten human resource managers of the SOEs where knowledge management was institutionalised, could clearly and in unambiguous terms show the degree of alignment of their training and development interventions with their knowledge management strategy. An interviewee from SOE3 articulated the degree of alignment as follows:

Therefore, that is one of our strategic pillars. So, our human capital strategy, which encompasses knowledge management strategy, which encompasses learning and development strategy, it's geared toward, it's aligned to say: okay guys if the organisation wants to make sure that we are sustainable from a financial perspective, we are a high performing organisation, we increase our footprint in terms of the rest of Africa. What sort of training do we need to, what sort of capabilities and training do we need to capacitate our staff on? Therefore, it is aligned. It is a fit with our long-term strategy; let me say; long term strategy, yeah. We have a three-year strategy (Interviewee #6, 2019).

South Africa has been part of the knowledge economy for more than two decades. It is therefore worrying that knowledge management was still not institutionalised or even conceptualised in six out of the nine participating SOEs, which remained a problem for the human resource managers of those institutions. Ten out of twenty HR managers were from only three SOEs that had fully conceptualised, developed and institutionalised knowledge management in terms of organisational structure, resource allocation and processes. The other ten HR managers lamented

the fact that their training and development interventions did not support knowledge management activities, since there was no knowledge management unit or strategy in their organisations.

The next subsection explores on-the-job boarding and shadowing as knowledge management strategies directed by HRM.

#### **4.3.5.3 On-the-job boarding and shadowing as knowledge management strategies directed by human resource management**

This subsection attempts to explore on-the-job boarding and shadowing as part of knowledge management strategies, and whether these strategies are directed or supported by HR departments in the participating SOEs. The data indicates that the on-the-job boarding had been taken seriously by the majority (16) of the human resource managers, whereas four managers responded otherwise to the research question. Moreover, on-the-job boarding differ from one company to another. In some companies, it lasts up to six months and is part of the probation period. In other companies, it involves two days of intense knowledge sharing and it ends there. Certainly, there is room for further improvement.

However, when it comes to on-the-job shadowing, a different and contrasting picture emerged. Many human resource managers posited that although they are quite meticulous with on-the-job boarding, they are very haphazard with on-the-job shadowing. Job shadowing is a problem area in SOEs. It is interesting that only five out of twenty HR managers of three participating organisations (SOE1, SOE6 and SOE7) had job shadowing activities as part of their knowledge transfer and management strategy, supported by their departments. The majority of the remaining human resource managers were missing in action regarding this important knowledge transfer strategy. One HR manager mentioned:

Job shadowing, not as much in our environment. The only time we look at job shadowing opportunities is when school children from schools visits us, matriculants come into the organisation just to job shadow what it's like to be a lawyer for a day (Interviewee #14,2019).

Job shadowing seems to be foreign in many state-owned organisations that took part in the study. Two HR managers indicated that they had just started talking about job shadowing in their organisations but they were not as serious as they should be. In some areas of the organisation where job shadowing took place, it took place in isolation. One interviewee postulated this view as follows:

It is not as rife, these programmes have started but they are not as robust as I would like them to be. Personally, I think we could do more on these, especially job shadowing. We are talking about job shadowing; it is done in dribs and drabs, you know. It is done in isolation, sometimes there is no focus and intent (Interviewee #16, 2019).

It is apparent that many SOEs did not do well with job shadowing. On-the-job shadowing certainly remains a problem area for development in the SOEs. Those SOEs that only recently started, will need to take job shadowing seriously as a very deliberate strategy for knowledge transfer and to mitigate the loss of organisational knowledge. Furthermore, it is also a concern that in one company on-the-job shadowing is only done with graduates who participate in experiential learning programmes for a certain period, and not also with the permanent employees of the organisation. This development certainly complicated the situation, especially since this particular SOE experienced a high turnover rate. If employees feel that they are being overlooked for opportunities for development and knowledge acquisition, they would opt to look elsewhere for opportunities for development. Thus, such prevailing circumstances created voluntary turnover that lead to organisational knowledge loss, especially in cases whereby employees in mission-critical areas felt that way. What complicated matters further, is that it took longer to orientate new recruits in those organisations.

Regarding the question, *How long does it take to bring the new recruit up to speed in the vacant positions?* four HR managers indicated that, depending with the nature of the job, it takes one to two years for new recruits to become conversant with high-level positions or specialist positions. Eight of the HR managers said that it takes them one to three months to bring a new recruit up-to-date in a vacant position, whereas the other six said it takes them three to six months.



The next subsection seeks to establish whether staff training and development initiatives focused on job-specific knowledge acquisition, applications, retention and sharing.

#### **4.3.5.4 Staff training and development practice that focus on job-specific knowledge acquisition, application, sharing and retention**

This subsection establishes whether staff training and development practice focus on job-specific knowledge acquisition, application, sharing and retention. All twenty human resource managers concurred that their training and development activities focus on job-specific knowledge acquisition and application. Many of them said that their SOEs do not have sufficient financial resources, and therefore they focus only on job-specific knowledge acquisition. Some replied that in general terms, their training and development covers more than just job-specific knowledge; it also covers personal development interventions. Some training interventions are specific; others are generic, strategic, regulatory or compliance, and technical in nature. An interviewee of SOE1 expressed the nature of their training interventions as follows:

We vary; some training interventions are quite specific, job related. Some are of strategic nature, which are quite broad to ensure the bigger picture. We have to put puzzles together. So it varies according the levels within your employment. The most senior, of course, are your strategic, key-kind of programmes (Interviewee #9, 2019).

Training employees enhances their knowledge and skills. That is the reason why all the managers interviewed agreed on job-specific knowledge acquisition and application. Only ten agreed that their training and development practices also involve sharing and retention. It is not a coincidence that these interviewees were employed at the three companies where KM is institutionalised through structures, systems, strategies and processes. However, half of them (ten) disagreed on the second part of the question, regarding a focus on job-specific knowledge sharing and acquisition. They explained that job-specific knowledge sharing and retention does not happen at their SOEs. Knowledge sharing remained a problem for more than half of the HR managers. One HR manager of SOE4 postulated this problem area this way:

Yes, it does. It is very good, but the sharing part I am not sure. The sharing part might need better development, but in terms of ... we make sure that for that specific job people are trained (Interviewee #11, 2019).

Companies that focused on job-specific training, emphasised that they focus on the technical side of the skills sets, whereas the others focused on both technical and personal development interventions. Three of the companies whose HR managers were interviewed, pride themselves as learning organisations. Their HR managers indicated that their organisations can send their staff to any kind of training – local or international – regardless of whether the training is technical or personal. This policy aligns with their high retention rates. Some of their HR managers even lamented the fact that they were over developing their knowledge workers. One interviewee captured the sentiment in this way:

We are a developmental and learning organisation, so we develop our people and we make sure that they remain relevant. However, we over develop them; because where they want to study whatever, they will fund you. The company does not care, whether the training intervention cost you millions or whatever, they will fund you. Whatever training you identify you will be funded to enhance your knowledge and skills, they will be there to support you (Interviewee #10, 2019).

This above statement is significant because the staff complement of the SOE in question has a high retention rate. This data also provides evidence of their successful retention strategies.

The next subsection explores how HR managers in the SOEs ensure return on investment from their training and development initiatives.

#### **4.3.5.5 Ensuring return on investment from staff training and development practices**

This subsection seeks to address the following research question: *To what extent does SOEs ensure that return on investment (ROI) is derived from their staff training and development initiatives?* The data revealed this as a problem area. Seventeen interviewees out of twenty emphasised that their SOEs are inadequate in this regard, whilst three interviewees of an SOE in the developmental finance support sector indicated that their SOE is good at ensuring return on

investment. They said that their company spend large amounts of money in capacity development initiatives. However, they find it difficult to measure the ROI of those initiatives.

Only one state-owned company had developed a measure to ensure return on investment, which is explained in detail in the subsection on the effectiveness of the staff training and development. Eight of the state-owned companies were doing bad and fail to measure and ensure return on investment. They argue that the only way they can ensure return on investment is to ask their employees to commit themselves to remain at the SOE for a certain period once training and development opportunities are presented to them. This is how one HR manager explained the situation:

We do that badly, we do it terribly. Nevertheless, the only way we protect the organisation is that if I spend a certain amount of money on your learning and development, I tie you in in terms of payback or a work back. Therefore, if I give you a bursary or if I send you on a course, financially I make sure that I can recoup my money. Nevertheless, the actual value of either the conference or the course that you have gone on, we do not create space for it (Interviewee #16, 2019).

The sentiment above is similar to that of the HR manager of SOE7 who pointed out that their organisation has contracts that require employees to serve them for years. In this way they force employees to stay longer than they wish at the SOE. However, some of the HR managers indicated that they measure ROI in terms of change in behaviour; in other words, how employees perform their duties (Interviewee #20, 2019). An evaluation form is a tool commonly used in state-owned companies to measure the success of the training intervention.

The next subsection explores the effectiveness of training and development practices.

#### **4.3.5.6 Effectiveness of staff training and development practice**

Previous subsections have examined various training and development initiatives in SOEs. However, it is equally important to establish whether they are effective in developing current and future knowledge and skills sets. This sub-section does that. Fifteen out of twenty interviewees

concluded that their training and development initiatives are effective. Conversely, five indicated that their initiatives are effective in developing current and future knowledge and skills sets.

It was interesting to note in the previous subsection, that seventeen of the HR managers indicated that they do not have a measurement to measure return on investment. However, fifteen of them claimed that their staff training and development practice is effective. How they measure that remains a mystery and a problem area. Twelve of the fifteen HR managers who responded positively to the effectiveness of their training and development interventions cited the following reasons as indicators for the success:

- Employees appreciate the opportunities, for instance, one interviewee articulated the success as follows:

Employees have appreciated the opportunities so I would say they are very effective (Interviewee #1, 2019).

- Learning and Development won an award for helping employees develop;

Last year, Learning and Development won an award for helping employees to be developed, so they are highly appreciated (Interviewee #2, 2019).

- Employees are obliged to remain in the organisation for a period of time as part of a retention policy or strategy;

There are obligations that are imposed. For instance, if you are at certain post level certain time frames are imposed to say you may not be able to leave until you have spent certain period in the organisation. That, in a way, is part of the retention policy (Interviewee #5, 2019).

- In-house training centres and academies that focus on the technical training.

On the technical side, I think it is effective because we have an in-house training centre that focuses on the technical training. Therefore, it is effective, the problem there is the

scheduling because the training centre is the profit centre and as a result, they do not run certain training courses if the volumes are not right (Interviewee #16, 2019).

When probed as to what instrument they use to measure the impact or effectiveness of their training and development initiatives, the majority of interviewees indicated that there are no measurements in place to gauge the effectiveness of their practices. An interviewee of SOE4 articulated it in this way:

We do not have a tool that measures return on investment; we have not implemented anything. It is only manifested in the performance where we are able to see, but there is no framework or tool to measure that (Interviewee #4, 2019).

Others advanced the reasoning that it is difficult to say if their initiatives are effective, largely because on-the-job training or the impact of training is monitored at the line management level. However, only SOE1 provided an example of a best practice measurement for ensuring and monitoring the impact of their training and development practices. Three HR managers from this state-owned company articulated the existence of such measurement as follows:

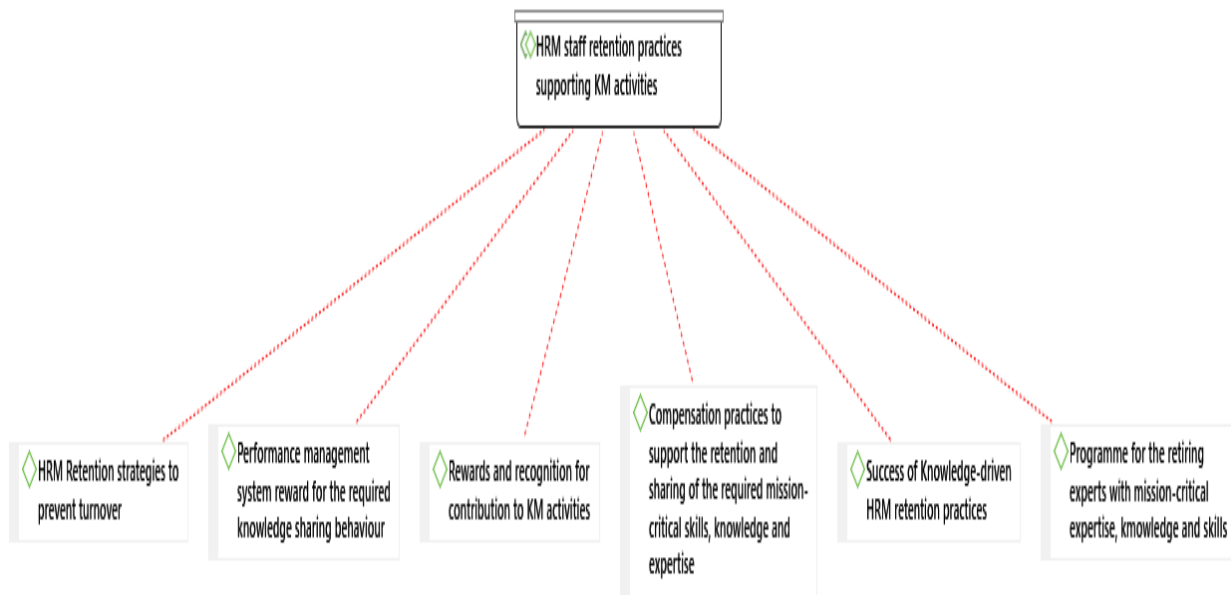
There is specific return on investment measurement that we look at. Therefore, in that return on investment we look at matrix to calculate the return on investment. I would say, because we have a model on how to measure the return on investments, I would comfortably say it is effective because it is measured through of model. Yes, we have a return on investment measurement. Return on investment measurement is based on Brinkerhoff model (Interviewee #2, 2019).

A lack of measuring tools for the effectiveness or impact of the training and development initiatives is a problem area in eight out of the nine companies. State-owned companies do not just need to train for the sake of training; they must train for having impact.

The next section explores the role of HRM retention practices that support knowledge management activities in the state-owned companies.

### 4.3.6 Human resource management retention practices that support knowledge management activities

The purpose of this section is to address the research questions on how specific human resource retention practices support knowledge management activities and behaviours in selected SOEs. The researcher navigated this specific research objective by examining the specific research questions on (a) the retention strategies to mitigate voluntary turnover, (b) programmes for retiring experts, (c) rewards and recognitions, (d) compensation practices, (e) performance management rewards and (f) success or effectiveness of the retention strategies. See Figure 16..



**Figure 16: HRM retention practices supporting KM activities**

The next subsection provides answers to research question regarding what human resource management does to prevent voluntary turnover.

#### 4.3.6.1 Retention strategies to prevent voluntary turnover

This subsection identifies the retention strategies in place to mitigate the problem of voluntary turnover and the possible knowledge loss. The data revealed a number of retention strategies that twelve out of twenty human resource managers had in place to prevent voluntary turnover in

their state-owned companies. The following list summarises the retention strategies that they identified in dealing with the challenges of voluntary turnover:

- Talent management strategy
- Organisational culture interventions, including culture surveys and the use of an entropy score to measure the culture
- Tracking voluntary turnover rates
- Market-related salaries or remunerations
- Remuneration policy and benefits
- People-focus and culture-focus of the organisational strategy
- Employee value proposition survey
- Employee engagement surveys
- Performance management system
- Rewards and recognition system
- Competency framework to deal with bottlenecks
- Post-retirement retention policy
- Internal recruitment and appointments
- Benefits of short-term incentives and long-term incentives
- Retention policies
- Training and development benefits
- Exist interviews analysis reports

Although the above-mentioned strategies were identified as some of the strategies that the HR managers had in place to address voluntary turnover in their organisations, eight out of twenty interviewees indicated that their organisations do not have retention strategies or policies in place. Two HR managers of SOE6, in the research sector, indicated that their organisation does not have a retention strategy, as most of their employees have fixed-term employment contracts, resulting in a high turnover rate leading to massive organisational knowledge loss. One of the interviewees from SOE6 captured the problem as follows:

Most of the contracts are limited duration contracts or fixed-term contracts. Therefore, the one thing we are putting in place is identifying core positions in the organisation, which should become permanent. Currently, these fixed-term contracts are killing the organisation and eroding organisational memory (Interviewee #13, 2019).

What complicated this particular problem, was the lack of a retention strategy as well as the lack of a funding strategy to deal with the conversion of these fixed-term contracts to permanent appointments. As a result, the high turnover rates did not really shock the system. This is a worrying development, especially given the fact that the organisation is characterised as knowledge-based learning organisation.

Nine of the human resource managers who were interviewed also cited a lack of organisational compensation policies on counter offers and exit interviews as problems. It is also apparent that in some companies, human resource processes come at the tail end and in a reactionary manner, especially when employees resign. One HR manager echoed the sentiment in this way:

I think we still a bit re-active, in a way, when the resignation comes through or there are murmurs of potential loss of skill. So, yes, the immediate is the counter offer but we also conduct exit interviews and we try to take the lessons from the resignations (Interviewee #15, 2019).

Another interviewee of SOE1 concurred with the above sentiment and articulated her view this way:

In addition, we cannot even counter-offer on a person who is saying that I got this position and I am leaving (Interviewee #19, 2019).

This remains a problem area in four out of the nine SOEs that participated in the qualitative interview phase.

To summarise the findings of the data analysed on this particular research question, it is clear that in state-owned companies with high retention rates, good benefits and market-related salaries, employees remain at the companies because of compelling employee value propositions and counter offers. Similarly, the state-owned companies that did not offer those kind of



benefits, experienced a high voluntary turnover resulting in low retention rates. From a knowledge management perspective, the prevailing situation created an organisational climate that is futile for organisational knowledge loss.

The next sub-section explores whether the organisations that participated in the study had a programme for retiring experts with mission-critical knowledge and skills. It also establishes if success-planning is part of their organisational knowledge management strategy, guided by HRM.

#### **4.3.6.2 Programme for retiring experts with critical skills**

Programmes that target retiring experts with mission-critical knowledge and skills are considered knowledge management strategies aimed at ensuring a proper transfer of knowledge before experts retire. However, the data revealed the opposite in the participating state companies. Twelve out of twenty interviewees indicated that they do not have a programme for retiring experts with mission-critical expertise, knowledge and skills. In other words, there was no deliberate strategy aimed at managing the risk of losing knowledge when these experts retire in their organisations. One of the reasons cited for their failure regarding this issue is a lack of policy or strategy on succession planning and post retirement contracting.

Eight of the participants concurred that there was a programme aimed at the retiring experts to ensure knowledge transfer and management strategy in their organisations. These participants said that the programme was developed for making sure that the retiring experts transfer their knowledge so that knowledge is retained in the organisations when they eventually retire. This is a deliberate risk strategy to mitigate the risks of losing knowledge. Some participants who claimed to have a programme on the retiring experts, explained that though it is not yet formalised, they employ people post retirement. One interviewee of SOE3 expressed it this way:

It is not formalised, but we have a process; a programme in place whereby we can employ people post retirement where they had post requirement contracts, but the emphasis is not to contract them forever, but to impart knowledge and skills (Interviewee #5, 2019).

Upon probing the matter further to establish whether there are succession plans in the organisations, the data provided a contrasting perspective. Seventeen of the participants said that succession planning, which is part of a knowledge management strategy, is in place and is guided by HRM. However, some of these interviewees also indicated that it is still early days, since the succession planning had not yet been formalised. In some cases, they developed policies on succession planning, but the implementation remained a challenge. An interviewee of SOE9, in the development finance sector, postulated it this way:

We do not expect it is an intentional effort to pair them with somebody who is an expert, but more often than not, you find that those people are leaving and they leave a vacancy. They do not need to transfer skills. Therefore, the intention is there, there is a plan; however, it is not being optimally implemented (Interviewee #9, 2019).

In other cases, succession planning was done by the human resource department, but it had been difficult to implement due to a lack of proper coordination. In some cases succession planning was implemented through coaching and mentoring. In such cases, it happened in a silo manner. In contrast, only three of the participants indicated that their organisations do not have succession plans. There are different reasons why succession planning remains a problem area in these state-owned companies. In one instance, the organisation had very young employees with an average age of 35 years. In another instance, they developed a policy on succession management that is yet to be approved. Thus, they had not made any strides on succession planning and its implementation thereof. However, in one of the companies, a policy on succession planning was in place but the implementation of it remained a challenge.

The next sub-section examines how the state-owned companies rewarded and recognised employees for their contribution to knowledge management activities.

#### **4.3.6.3 Rewards and recognitions**

Rewards and recognitions serve as motivational factors for employees, either to acquire, develop, transfer, retain or hoard knowledge. This subsection describes how the state-owned companies rewarded and recognised employees for their contribution to knowledge management activities

and the nature of the prevailing rewards and recognitions in the SOEs. The answers to the following research question varied from one enterprise to another: *How does the company reward and recognise employees for their contribution to knowledge management activities and initiatives?* The answers revealed that some SOEs provided monetary rewards through short-term incentive schemes driven by the performance management system, while other SOEs provided non-monetary incentives, and some SOEs did not have any of those systems in place.

The nature of the rewards and recognition systems in the participating organisations is also a mixed bag. Some participants indicated that their rewards and recognitions are individual-based, while others indicated that their rewards and recognitions are both individual as well as group-based or team-based. Furthermore, in some SOEs, no rewards and recognition systems were in place. The data revealed that eight of the human resource managers indicated that their SOEs have individual-based rewards and recognitions, six indicated their systems are both individual and team-based, whilst six indicated that there are no rewards and recognition systems in their state-owned companies.

Those who indicated a lack of rewards and recognition systems indicated that they do not have a policy on incentives and how to recognise employees for their contribution to knowledge management activities and behaviours. In contrast, participants who said that their companies have individual as well as group-based rewards and recognitions, also pointed out that these systems are guided by performance contracting processes and organisational policies on performance management systems and rewards. In one case, where there is a knowledge capture system, a disciplinary policy is used to enforce compliance. An interviewee of this SOE described it in this way:

We do not have a policy yet, but we started with a disciplinary policy, which was a stick, but the intention is to come up with a short-term incentive scheme where we recognise people who are capturing stuff on the knowledge system (Interviewee #4, 2019).

Although an enforcement and punitive mechanism was in place, rewards and recognition for contribution to knowledge capture remained a problem. In an effort to promote a culture of knowledge management, the organisation made it a ‘schedule 1’ offence. In other words, it was

not the rewards system that made the process effective, but the implications of not doing something. People did their job because of the fear 'of being whipped'. The three interviewees of this organisation felt that despite a clause in the performance management framework that gives recognition to employees for uploading certain things on the knowledge capture system, the system is not effective. Another interviewee from the same organisation agreed to this, and elaborated as follows:

I do not think the rewards are what's making it effective, I think what's making it effective is this: the implications of not doing it. Yes, I do not think it's because of how we are rewarding and recognising it, I think it's more because people do not want to get a whipping (Interviewee #8, 2019).

The prevailing circumstances in this particular case create problems for knowledge management behaviour. For example, employees just capture cases and business activities on the KM system for the sake of capturing it, because they feared they will be punished if they do not do it. Knowledge management behaviours and activities may prove extremely difficult in a culture of fear for punishment. In other words, it cannot create a conducive knowledge-centric organisational culture. Naturally, people should thrive on knowledge sharing activities.

The next subsection seeks to establish what compensation practices are in place to support retention and sharing of mission-critical skills, knowledge and expertise and explore how such practices support knowledge management processes in the SOEs.

#### **4.3.6.4 Compensation practices supporting retention and sharing of critical skills, knowledge and expertise**

In a subsection 4.3.6.1 it was established that high retention rates, good benefits and market-related salaries, compelling employee value propositions and counter offers, are the type of incentives that make employees to stay at the SOEs. This sub-section addresses two specific research questions. Firstly, it establishes what compensation practices were in place to support retention and sharing of the critical skills, knowledge and expertise. Secondly, it examines how such practices facilitated and supported knowledge management processes and behaviour.

The type of compensation practices in place to support retention and sharing of critical organisational knowledge and skills varied from one organisation to another. However, the following list presents the compensation practices currently supporting retention and sharing of the critical skills, knowledge and expertise across the participating SOEs:

- Performance bonuses
- Critical skills allowances
- Counter-offers for critical resources
- Financial incentives for years of tenure
- Short-term incentive schemes for retaining critical skills
- Long-term incentive schemes for retaining critical skills
- Remuneration policies designed to support scarce and critical skills
- Acting and second allowances
- Promotions
- Salary benchmarks and increments
- Inclusion of knowledge management in the performance contracts

Some companies always pay the top notch of the pay band to employees who possess critical skills. Thus, they have a specific incentive in place to support retention. However, some companies do not have targeted schemes or practices for specific groups, but rather a generic scheme that follows a one-size-fits-all approach, which is not necessarily effective for the retention of mission-critical employees. In the case of SOE5, all three HR managers indicated that their compensation practices do not support the retention of the people with mission-critical knowledge and skills. They explained that they struggle to attract individuals because their market lines are not competitive. Moreover, the company does not offer counter-offers for people with mission-critical knowledge and skills. One interviewee put it this way:

When a person is leaving the organisation, that expert, that critical skill, we do not do the counter offer. In addition, we do not have a critical skill allowance. We really struggle to attract individuals in terms of the market lines that we have, they are not competitive enough. We

cannot attract the kind or calibre of skill that we are looking for in terms of also the market lines, because we cannot afford some of these people (Interviewee #19, 2019).

The problem above was also articulated by the interviewees of SOE2, SOE8 and SOE9. The data also revealed that this practice is not consistent, even in those companies that do counter offers for critical resources. For instance, one interviewee of SOE2 expressed the inconsistency of the practice in this way:

So, even though it is not consistent, but I will say we do counter offers and the scales are just guidelines to us, and every year we review those salary benchmarks. Therefore, if you are identified as a critical resource, we will try to retain, and if you are given an offer and we do the counter offer. The problem is that we are not consistent with counter-offers practice (Interviewee #10, 2019).

In three of the SOEs where compensation practices support knowledge management processes (acquisition, use, sharing and retention), the participants pointed out that those compensation practices are embedded in the performance management systems. The key performance indicators (KPIs) on knowledge management activities were part of the performance contracting process and they were measured in terms of how they deliver on these KPIs in the performance contracts. KM behaviours and activities were then rewarded, largely because they integrated into the performance management system.

The integration of knowledge management activities through PMS was a problem in more than 60% of the SOEs in the study. This is largely because knowledge management was not institutionalised in those companies, hence the non-existence of the compensation practices aimed at facilitating and supporting knowledge management processes and behaviours.

The next subsection seeks to establish how the PMS rewards required knowledge-sharing behaviour.

#### **4.3.6.5 Performance management system rewards for required knowledge-sharing behaviour**

Performance management system rewards for the required knowledge sharing behaviour exist in three out of the nine state-owned companies that participated in the study. In other words, only 33% of the participating state-owned companies rewarded their employees for the required knowledge management behaviour, while the rest (67%) did not do so. This is another problem area identified by the study. Nevertheless, this is not surprising because there are no knowledge management structures, strategies, resources and processes in place in many South African SOEs despite the fact that the country is part of the knowledge economy. Only a few SOEs indicated that they have specific KPIs and each employee has to achieve his or her goals, while over-achievement can be rewarded according to a bonus scheme. In other words, employees in those few companies received financial incentives for displaying and achieving certain knowledge management behaviours. The availability of short-term incentives serves to facilitate required knowledge management behaviour, thus it helped inculcating knowledge management initiatives and processes in those companies.

Of the SOEs, 33% recognised mentors who mentor other employees through performance appraisals. One particular SOE had a learning and development KPI for each employee in the organisation. The recognition of the experts encouraged them to remain in the organisation and share expertise. An interviewee of SOE2 (one of the 33% SOEs mentioned above) explained it as follows:

Yes, it does, because if somebody gets rewards, being recognised for their expertise. They become more of a go-to-person or a role model for the advice. They are good, because people understand that, you know. For them to score well, they need to would have shared and enhance their colleagues' knowledge. Yes, it is. Hence, I was saying it is part of the performance contract. Therefore, when they do the performance review, it is part of that, yeah (Interviewee #5, 2019).

Knowledge management is part of performance management in three state-owned companies. Ten of the HR managers who represented these companies in the qualitative interview phase

attributed that to the existence of a knowledge management function, structure, strategy and leadership. The integration of KM in their performance contracts illustrates the deliberate act of rewarding knowledge sharing behaviours. Three HR managers of two research councils represented in the study also indicated the fact that they reward their employees for publications and paper presentations at conferences, even though it is not coined as knowledge management per se in their performance management contracts. Performance contracting of knowledge management can serve as an effective mechanism to institutionalise a knowledge-centric organisational culture. Furthermore, it also enhances organisational capabilities for learning, thus facilitating organisational learning as well. A learning and development (L&D) KPI can go a long way in facilitating knowledge management. Therefore, it is not a surprise that many HR managers who were interviewed emphasised the importance of L&D in building knowledge management capabilities.

The next subsection examines the effectiveness or success of retention in promoting knowledge management activities such as knowledge sharing and retention.

#### **4.3.6.6 Success of knowledge-driven HRM retention practices**

This section examines the effectiveness of HRM retention practices in promoting knowledge management activities and behaviour. The effectiveness is based on a perception built on experiences from an organisational context where such retention practices were in existence. The feedback on this research question varied. Of the interviewees, 50% concurred that their retention practices are successful and the 50% said that their retention practices are not successful in managing and reducing organisational knowledge loss. Ten HR managers in three state-owned companies cited high staff retention rates as the main reason for the success of their retention practices. An interviewee of SOE1 described it in this way:

We have not suffered knowledge loss in my opinion, so I think we have been successful. It is successful. I think that there is evidence to form because of our 98% staff retention rate. The percentage, which is 98%, so that necessarily is a good reflection to say we are successful (Interviewee #3, 2019).



Another interviewee of SOE2 concurred with this view as follows:

They are successful, because our retention is four point something; our staff turnover is four point something per cent, which is fair. In addition, if you also look at the average years of service they spend here, it is 30-something years, which is good (Interviewee #10, 2019).

Although it seems easy to regard a high retention rate as an indicator of success for staff and knowledge retention, no single state-owned company cited the existence of a mechanism for tracking whether their employees are using acquired knowledge in their day-to-day activities. The absence of a mechanism to track the use of acquired knowledge is a problem in SOEs. It is equally important to note that even if knowledge retention is not infused in a performance management system, some of the organisations had activities in place to do just that. However, even in those SOEs that indicated that their retention and rewards practices are successful, some their retention and rewards practices were not knowledge management specific, but generic. In other cases, the rewards systems were effective in retaining people, even though they were not knowledge management specific. In one case, it was specifically mentioned that employees would tell that they are staying because of a short-incentive bonus and not because the company pays market-related salaries. They receive their bonuses and these benefits make them stay longer not because of anything that is knowledge management specific. However, the short term incentive bonuses enticed their employees to stay longer and in the process this ensured the retention of their knowledge in the organisation.

Of the HR managers, 50% cited a number of reasons for the lack of success of their retention practices. When it comes specifically to compensation practices, most of the interviewees indicated that their compensation policies are rigid and do not accommodate the counter offers and retention of scarce skills. This affected the impact of their retention practices. Furthermore, it had also been proven that retention practices are effective in the state-owned companies where there are rewards and recognition systems for knowledge management behaviour. It is argued that if employees get rewards, they are recognised for their expertise. They become more of a go-to-person or a role model if other employees need advice. Recognition and rewards make them stay longer in the organisation and they share their knowledge with other employees.

Of the state-owned companies where knowledge management is part of organisational life, 33% said that because they embedded knowledge management in the performance management system, their knowledge retention strategies became more effective. In other words, it helped these companies to manage and reduce the risks of organisational knowledge loss because they embedded retention strategies such as coaching and mentoring, post retirement contracting, successions plans, flexible compensation policies and other knowledge sharing activities in the PMS.

Of the SOEs, 67% (6) said that the absence of a knowledge management function or roles in the organisational structure was the main reason for the ineffectiveness or lack of retention strategies in managing and reducing organisational knowledge loss. An interviewee of SOE9 captured the position within the company in this way:

I would think we are not successful, and when I say we are not successful, it is based on the gaps that I have noticed in us managing knowledge within the organisation. The absence of certain programs that would facilitate knowledge management in the organisation exacerbates the situation, and so I do not think we are succeeding (Interviewee #17, 2019).

For KM to be a success story in the organisations, companies need resources and well-defined roles within the structures to craft and drive strategies on knowledge management. An interviewee of SOE5 said:

No, they are not successful. They will only be successful if the organisation can commit by having the KPA for knowledge management. Because if people see that this is in my performance contract, you continuously look at your performance and say, I need to make sure, you know. Nevertheless, because it is not there why should I be sharing? (Interviewee #18, 2019).

Concurring with this sentiment, key performance areas on knowledge management cannot happen in a vacuum. Organisations need to focus on managing organisational knowledge to prevent knowledge loss, even if the responsibility for reducing knowledge loss is the responsibility of every line function. The absence of a driver for KM processes remains a problem in many of the SOEs.

The next section examines organisational cultural and structural issues supporting knowledge management behaviour.

#### 4.3.7 Organisational culture and design

The purpose of this section is to examine whether organisational culture and structure support knowledge management and the role of HRM in building knowledge-driven culture and design in the SOEs. The researcher navigates this specific research objective through examining specific research questions pertaining organisational culture and design such as (a) organisational culture and HR role in facilitating knowledge-centric organisational culture, (b) organisational design and HR role in facilitating knowledge-centric organisational structures, (c) organisational leadership support for knowledge management and (d) barriers to effective knowledge management. Figure 17 illustrates how this particular research objective was addressed.



**Figure 17: Organisational culture and design**

The next subsection about this research objective examines the organisational structures and the role of HR in supporting knowledge management processes and behaviour.

#### **4.3.7.1 Organisational structure and the role of human resource management in supporting knowledge management behaviour such as knowledge acquisition, creation, sharing and retention**

An organisational structure is an important enabler of knowledge management. This subsection examines organisational structure and the role of HR in supporting knowledge management processes and behaviour. The way that the organisation is structurally wired can shape or negatively affect knowledge management behaviour. Hierarchical structures were perceived by many participants as exhibitors of knowledge sharing and retention in their organisations. Thirteen HR managers in seven of the state-owned companies indicated that their structures are hierarchical and seven participants in the remaining two companies said that their structure is flat. A flat or matrix-shaped structure appears to be a key driver in facilitating knowledge management behaviour in the organisation. However, there were mixed feelings about the effectiveness of either hierarchical or flat structures in supporting knowledge management processes and behaviour. For instance, an organisation might have a structure that is too hierarchical or divisional, but have a knowledge management champion in every division in addition to their KM unit. This was the case in one of the SOEs. Evidently, one can concur with such sentiment and argue that though the structure is hierarchical, it supports knowledge management behaviour and processes, as these behaviour and processes are embedded in or part of the organisational structure. A flat or matrix structure could provide an added advantage in terms of the ease of flow and sharing of information and knowledge. Nevertheless, employees reach their ceiling too soon and this poses a threat in terms of opportunities for further career development. An HR manager of an SOE with a flat structure captured the challenge as follows:

We have a very knowledge-based organisation, number one. However, the way it is structured, is it efficiently structured? Optimally structured? No, it is a flat; a very flat structure; it is extremely flat and those are some of the issues that causes retention problems. People hit the ceiling very fast. If have hit the ceiling and I do not want to be the head, so what? (Interviewee #9, 2019).

Whether hierarchical or flat structures are exhibits of knowledge management processes and behaviour remains to be tested. What appears undisputable is the fact that human resources

departments across the public utility sector do provide resources and infrastructure to support learning and development. Whether that signifies something as knowledge management or some processes of it, that remains to be seen. Nevertheless, learning and development in the SOEs played a critical role as a facilitator and driver of knowledge acquisition and development processes.

Human resource managers across the board concurred that they should indeed be playing a critical role in facilitating and developing structures that are supportive of knowledge management behaviour and processes. Their views were regardless of whether they had knowledge management roles in their organisational structures. One interviewee of SOE3 pointed out:

Although we are responsible to deal with organisational structure, I think this remains also an area for further development where we can infuse HR in knowledge management interventions. As I said earlier at this point, we are not involved with that; we are just a line department housing a knowledge management (capture) system (Interviewee #5, 2019).

Participants of SOEs where knowledge management is not part of organisational life (institutionalised), admitted the failures on their part and of leadership for not having KM articulation and roles in their organisational structures. Knowledge management roles or functions were absent in the structures of more than 67% of the SOEs participating in the study. The data revealed this as a problem area for many human resource managers of those companies. An interviewee of one those SOEs explained it in this way:

It will be easy to answer some of these questions if we had a knowledge management department that is fully functional. Our organisational structure does not support knowledge management because we do not have a knowledge management unit (Interviewee #20, 2019).

Two of the SOEs operating in the research environment, indicated that they do not have a KM unit. Instead, their structures are built around knowledge management in one way or the other because their primary business operating model involve knowledge production, acquisition and dissemination, but excluding retention. This is precisely so because these research and

development entities are inherently knowledge-based organisations regardless of how they are structured. An interviewee from one of the two participating organisations in the research sector explained the situation as follows:

The entire structure is built around it, except for retention. The retention of knowledge, if you are talking about the person in the chair, remember we have this limited duration contracts. Nevertheless, everything else is exactly about that. We play a key role because of our learning and development intervention, focus areas, succession planning that we are trying to drive, employment equity that we are very serious about and in terms in looking at revising the organisational structure (Interviewee #13, 2019).

Although the organisation did not have a dedicated KM unit, it does not mean they were not facilitating knowledge management processes and behaviour. The thinking, as expressed above by this particular HR manager, confirms the previous assertion from the researcher that learning and development (training and development) fulfils certain knowledge management processes such as knowledge acquisition, creation and development, even though their organisational structures were not fully designed to do that. Furthermore, three HR managers from two companies in the R&D environment agreed that having an organisational design that incorporates information management and dissemination in the library's functions, helps to ensure that knowledge of the organisation remains retained. However, this thinking remains disputed largely because libraries are not knowledge management entities per se. In addition, they serve as storage sites for organisational information and documents. Yes, libraries provide a key infrastructure for knowledge management, but they do not replace the role of knowledge management in the organisation. A lack of understanding of KM was a problem to some of the HR managers interviewed.

To summarise, it does not matter whether the structure of the organisation is flat or hierarchical to support knowledge management processes and behaviour. What matters is whether the structure, hierarchical or flat, exhibits knowledge management processes and behaviour. The onus lies on the evidence. Similarly, it is important for the state-owned organisations to have dedicated knowledge management roles in the structures, regardless of whether their structures are hierarchical or not. It remains undisputable that human resource management departments

are responsible for developing organisational structures that serve to facilitate and support knowledge management. All the HR managers who were interviewed, concurred that they have a crucial role to play in this regard.

The next subsection examines how organisational culture supports KM processes and behaviour and the role of a human resources department in this regard.

#### **4.3.7.2 Organisational culture and the role of a human resource department in supporting knowledge management**

Organisational culture plays an important role in making knowledge management part of organisational life. This subsection examines specific research questions that address organisational culture and the role of a human resource department in supporting the organisational infrastructure in the form of culture supporting knowledge management. In addressing the research question regarding what they would consider the role of a human resource department is in building a knowledge-centric organisation and culture, the participants expressed their views as follows: In three of the SOEs where KM is part of the organisational culture, all ten HR managers representing those companies in the qualitative interview phase agreed that they are the focal point of facilitating the building of an organisational knowledge-centric culture, albeit areas or gaps for further development. In general, all HR managers regardless of whether they have KM units in their structures or not, concurred to their role as the facilitators and drivers of an organisational knowledge-centric culture in an ideal environment. In addition, the following were also summarised and listed as roles that they play in building a knowledge-centric organisation and culture:

- Through engagement and communicating the culture visions of an organisation.
- Ensuring that human resource initiatives are aligned with the knowledge management vision of the organisation.
- Serving as champions for knowledge management initiatives and processes throughout the organisation.
- By enabling systems, structures and roles and responsibilities dedicated to knowledge management.

- Making sure that knowledge management is everyone's responsibility or business in the organisation.
- Forming strategic partnerships with knowledge management structures.
- Facilitating the dismantling of silos in the organisation.
- Making knowledge management one of the key strategic pillars of the HR strategy.
- Creating an awareness and communication around knowledge management issues in the organisation.
- By having an inventory of the knowledge and competencies in the organisation.
- Proposing rewards systems that incentivise knowledge management initiatives and behaviours.
- Advocating knowledge management as a KPI in the performance management system.

Whilst the above-mentioned roles are the ideal or only done by some of the HR managers in the organisations, it is equally important to instil a certain level of knowledge management understanding and vocabulary, as many perceive knowledge management as information technology systems. This is a problem put forward by many of the HR managers interviewed.

Regarding the research question whether organisational culture support knowledge management, 60% of the interviewees agreed that the culture of their organisations support knowledge management. This was irrespective of whether their organisation had a knowledge management structure or not, though those with KM units in their organisations were in the majority. In contrast, 40% declared that their organisational cultures do not support knowledge management. There were cases whereby companies supported knowledge management in principle, even though there were no KM systems, tools and processes to allow it to happen intentionally. Therefore, the onus was on the relevant stakeholders to turn those processes into reality.

Another related research question was: *How does the human resource department help to create and support an enabling organisational culture for knowledge management activities?* The participants of the 33% SOEs where knowledge management is part of the organisational life, put forward a number of factors to illustrate how their companies' culture support knowledge management activities, which are:



- Knowledge management structure, systems, roles and processes.
- Dedicated budgets for knowledge management activities.
- Investment in training and development opportunities, e.g. conferences, workshops, bursaries for staff members, and bursaries for children of the staff and others.
- Champions for knowledge management initiatives.
- Top leadership buy-in and support.
- Learning organisational culture.
- Supporting KM behaviour in terms of succession planning initiatives.
- On-job boarding and job rotation activities.
- Incentivising knowledge management behaviour.
- In-house training academies.

It is interesting that even those who said their organisational cultures do not support knowledge management, indicated that their companies are investing in staff training and development initiatives, even though they do not regard that as knowledge management activities. For instance, one HR manager said:

We are giving people opportunities to go and present their stuff, we encourage staff members to have meetings, monthly meetings, and quarterly meetings as HR, and we need to be facilitating that so that there is knowledge sharing (Interviewee #9, 2019).

Clearly the above-mentioned quote implies that this particular SOE enabled some form of knowledge sharing, even though it did not happen in the name of knowledge management.

The reasoning behind their response is largely because they did not have dedicated structures, systems, roles and processes for knowledge management. Additionally, a lack of top leadership and management support and buy-in for a knowledge management concept added to the complexity. This remains another reason for concern.

Organisational cultural remains a problem area for development, even in those cases where KM is institutionalised. Furthermore, the data revealed that in some organisations there is a culture of head office versus the regional sites. In one particular case, there appeared to be more than one

organisational culture. This appeared in situations whereby some degree of knowledge sharing happened at the head office of the company. However, it was non-existent at the site offices. One particular HR manager from one such company expressed it this way:

The culture here at headquarters and the culture at the site, it is two different things. No, at the site the culture is different, I must say. Knowledge management, the sharing part in particular, is happening in a form of training and development (Interviewee #19, 2019).

In other words, communicating one cultural vision of the organisation across sites is a challenge in this state-owned enterprise.

The data further revealed another interesting aspect regarding a punitive culture as a way of embedding a certain level of KM behaviour and processes. For instance, in one particular state-owned company, operating in the compliance and regulatory sector, had systems, structures, roles and responsibilities dedicated to knowledge management. Furthermore, the company instilled values that were aligned with its knowledge management strategy. The company also implemented supporting policies that facilitated the capture of knowledge in the knowledge management system (KMS). However, one of the three HR managers who represented this particular company pointed out a serious problem with their KMS. The company made it a Schedule 1 offence for employees failing to capture their knowledge activities in the system. Non-compliance can cause employees to be fired. This HR manager described the position as follows:

It is done because people do not want to get a hiding. You have some organisations where they do not even have to make it a dismissible offence for compliance. It is a culture that has been embedded in our processes, and so, for us, we had to tell people that if they do not do it, you are fired (Interviewee #8, 2019).

Such an approach serves to perpetuate a culture of fear in employees. Employees are captured involuntary in a KMS because they do not want to be punished. Whether, this kind of enforcement support knowledge management behaviour, is something else, but it is worth further

research. Furthermore, such an approach could serve as a barrier to effective knowledge management.

The next subsection identifies barriers to effective knowledge management in the selected SOEs.

#### **4.3.7.3 Barriers to effective knowledge management**

This subsection examines barriers to effective knowledge management. It addresses the research question, from a HRM perspective, what HR managers consider barriers to effective knowledge management. The researcher summarised the barriers as follows:

- a. Silo mentality
- b. Bureaucracy and red tape
- c. A lack of awareness of and education on knowledge management
- d. Employment equity
- e. The nature of tacit knowledge makes it difficult for transfer knowledge
- f. Appointments on fixed-term contracts
- g. Competing priorities for leadership
- h. A lack of leadership buy-in and support
- i. A lack of recognition and rewards for mentors
- j. A lack of knowledge management strategy
- k. A lack of initiatives on skills and knowledge transfer
- l. Funding problems to enable knowledge management
- m. Information and knowledge hoarding
- n. A lack of proper information technology systems for knowledge management

Employment equity seems to be a thorny issue to some of the HR managers. They blame it for pushing some employees out of the organisation and partly for their struggle in filling mission-critical skills. One interviewee postulated the frustration about employment equity as a barrier in this way:

One of the barriers could be employment equity itself, because remember, when you tell people that you want to replace them with a black person, they might not transfer that knowledge because they know they are replacing themselves now (Interviewee #11, 2019).

Employment equity, in this instance, made the process of skills transfer and knowledge transfer initiatives impossible. This line of thinking on employment equity as the cause of involuntary turnover and resultant knowledge loss was cited as one of the causes of knowledge loss. See also Section 4.3.1.

Problems for effective knowledge management also occur when people are not given the freedom to collect knowledge, when the organisation do not facilitate sessions where people can capture knowledge in their jobs, and when their contributions towards knowledge capturing is not measured. It is equally important to point out that as individuals, we obviously want to preserve our knowledge, and one of the key barriers is information and knowledge hoarding. One interviewee articulated the sentiment expressed by many employees as follows:

The feeling of people of saying; I do not want to share my knowledge because if I do share it with you, you will take over my job (Interviewee #1, 2019).

In other words, the fear of somebody taking over your job causes the owner of that knowledge to hoard it. Knowledge hoarding is what makes knowledge sticky in the organisations. Thus, it affects the effectiveness of knowledge management processes and behaviour. People or business units operating in silos were some of the biggest challenges highlighted by human resource managers as barriers for effective knowledge management. Furthermore, many human resource managers did not reflect and interrogate enough on their practices and processes, especially their impact on organisational knowledge management and cultures while enabling that. However, they acknowledged their role in that regard.

The next sub-section explores organisational leadership support to knowledge management.

#### **4.3.7.4 Organisational leadership support to knowledge management**

This subsection examines the research question on how organisational leadership support knowledge management in the SOEs. The subsection also addresses the research question whether HR managers consider HRM as a function that creates an organisational environment conducive for effective knowledge management.

In general, most of the HR managers that were interviewed agreed that their leaders support knowledge management. In 33% of the state-owned companies that institutionalised knowledge management, the chief executives supported knowledge management. In contrast, in the 67% of the SOEs where knowledge management was not institutionalised, managers at the top echelons were blamed for a lack of knowledge vision, knowledge management leadership and their buy-in on this matter. Those who believed that their organisational leadership supported KM, provided the following reasons:

- Leadership provides resources, budget, structure and opportunities for knowledge management to flourish. For example, an interviewee said:

The fact is that they provide resources, they provide a budget, they provide opportunities. It is not just about the budget, so when we knock on their doors and say XX wants to come to your department for a period of six months to do one, two, three and four, they willingly avail their other resources to support XX to learn (Interviewee #1, 2019).

- Leadership drives knowledge management. For example one interviewee explained it in this way:

They drive this thing. What we do, we have buy-in from them and as I said, our CEO is at the forefront of this knowledge management agenda (Interviewee #2, 2019).

- Leadership ensures that there are policies that support knowledge management. For instance, one interviewee described the level of support in this way:

Yes, there are policies that support KM, that have been approved by the top executives (Interviewee #13, 2019).

- Leadership invests in people, training and development opportunities.
- Knowledge management is part of the business strategy.
- Leadership understands the value for knowledge management.
- Leadership drives organisational culture that is supportive of knowledge management.

On the other hand, those who argued that organisational leadership does not support knowledge management, also advanced a number of reasons as follows:

- Leadership is not visible on knowledge management agenda.
- Leadership is not driving knowledge management agenda.
- Leadership is working at the top without the proper knowledge management vision.
- Leadership is good at supporting knowledge management stuff but the implementation is the problem. For instance, an interviewee of SOE9 described it in this way:

Yes, they do support it, but they support it conceptually and not practically (Interviewee #16, 2019).

- Leadership does not know what knowledge management is. For example, one HR manager explained it in this way:

They do not know what knowledge management is. It is in recent times that they see the fruit of knowledge management and they are things that are very far, the core of Knowledge management, they are not there yet (Interviewee #9, 2019).

- They do not see the value of knowledge management.
- Top managers have too many competing interests.

Regarding the research question on whether participants consider HRM to be creating an organisational culture conducive for effective knowledge management, 60% of the HR managers concurred that human resource management do create organisational culture that is conducive for knowledge management. In contrast, 40% said that their HR departments do not create an organisational culture that is conducive for effective knowledge management. Even HR managers who concurred that HR departments create an organisational environment that is

conducive for effective knowledge management, indicated that there are room for improvement and more can be done in this regard.

The next section examines the overall effectiveness of HRM practices in facilitating the management and reduction of organisational knowledge loss.

#### **4.3.8 Alignment and focus of HRM practices on managing organisational knowledge loss**

This section addresses the research question whether HRM practices are aligned and focused on managing organisational knowledge loss. The responses on the research question indicate that 50% of the HR managers posited that their practices are aligned, whereas another 50% said that their practices are not aligned and not focused on managing organisational knowledge loss.

On whether there is a need for the integration of human resource management practices in knowledge management, all the interviewees concurred that there is indeed such a need. Moreover, they expressed a need for a greater understanding of knowledge management vocabulary and tools to better reflect on their practices. Such an understanding would assist them to position themselves and their practices in this regard. In three cases, where knowledge management structures and roles were clearly defined, the HR managers posited that they work together with the knowledge management practitioners in the organisations. However, their functions were not integrated.

A lack of alignment and integration were a problem area across the board, regardless of whether KM roles and processes were in place. An interviewee of SOE1 articulated the lack of synergy in this way:

At the moment, the knowledge management people are there and we are here as the HR people, we still live like that, that is one of the things we need to bring together. We work together with knowledge management unit, but I cannot claim it to be an integration. It is not an integration that happens automatically (Interviewee #1, 2019).

On the follow-up question as how such integration should be approached and implemented, the HR managers in state-owned companies where KM strategies, systems, structure and processes

were not in place, said that there must be strategies, structures, roles or resources for knowledge management as a starting point in the integration process, largely because at time of conducting the study, there was nothing to integrate. One interviewee explained the situation in this way:

What more can be done is for us to realise the value of knowledge management in an organisation, and not for our own good as individuals, but for the company good. In the same manner, that we are seeing that need to formal processes on knowledge management. We actually see the significance of strategy on that (Interviewee #17, 2019).

An awareness of what is lacking, is the beginning of a journey in search of a strategy and processes to address the gap. The alignment situation was different in those state-owned companies where KM strategies, structures, policies and processes were already in place. Their HR strategy prioritise the retention and management of critical skills, thus containing the impact of voluntary turnover and organisational knowledge loss. One interviewee explained the science behind their HR strategy in this way:

Yes, we are implementing talent management; it was there but we are making it more formal. Therefore, that talent management is all-inclusive, including retaining critical knowledge it will include making sure that we keep our critical resources (Interviewee #1, 2019).

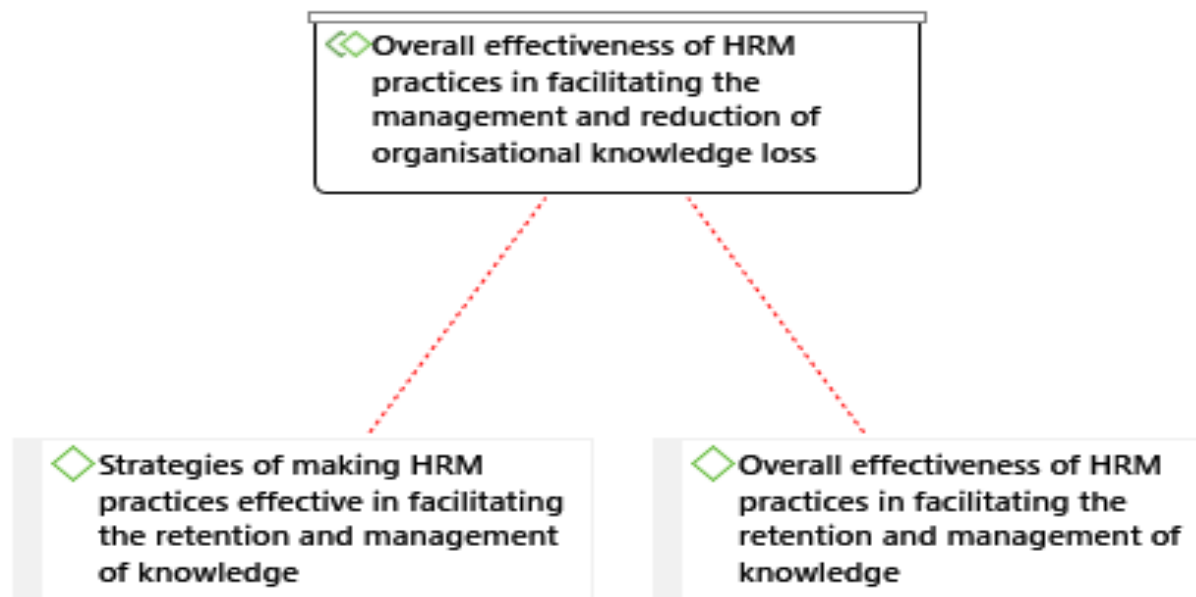
From the analysed data, it is apparent that human resource management departments, in some cases, were repositioning themselves to deal with knowledge complexities in a knowledge-based economy through integrated talent management strategies whereby they look at talent in its entirety. More of that will go a long way in facilitating organisational knowledge management initiatives and behaviours, thus reducing potential knowledge loss in the state-owned companies.

The next section examines the overall effectiveness of HRM practices in facilitating the management and retention of organisational knowledge loss.



#### **4.3.9 Overall effectiveness of human resource practices in facilitating the management and reduction of organisational knowledge loss**

The purpose of this section is twofold: First, to assess the overall impact of HRM practices in facilitating the management and reduction of organisational knowledge loss in the SOEs. Secondly, to identify strategies of making human resource management practices effective in facilitating the retention and management of organisational knowledge. Figure 18 illustrates how this particular research objective was addressed.



**Figure 18: Overall effectiveness of human resource management practices**

The next subsection examines the overall effectiveness of HRM practices in facilitating the retention and management of organisational knowledge.

##### **4.3.9.1 Overall effectiveness of human resource management practices in facilitating the retention and management of organisational knowledge**

Many of the HR practices and their roles in supporting KM were examined in previous sections of the chapter. This section specifically examines their overall impact on or effectiveness in facilitating retention and management of organisational knowledge to minimise its loss. All human resource managers acknowledged that there are gaps, but also areas for improvements to

make their practices more focused and effective to ensure the retention and reduction of organisational knowledge loss. Their views on this research question were expressed in this way:

- **Effectiveness of HRM practices**

Of the participants, 30% indicated that their practices are effective in facilitating the retention and management of organisational knowledge. However, their responses also revealed gaps and areas for further development. An interviewee of SOE1, where KM is part of organisational life, described it in this way:

Very effective. I think we are holding our space. However, there are areas for further development. On a scale of one is to five. I will give us four. As I said, we have systems, we have structures and we have policies that are highly effective. (Interviewee #1, 2019).

Although, in a few cases, knowledge and human resource retention was the result of deliberate acts of managing and minimising organisational knowledge loss. There was also a need to identify and refine areas for alignment.

- **Partial or average of HRM practices**

Of the participants, 30% said that their practices vary in terms of overall effectiveness. They said that they are neither effective nor ineffective. They explained that the practices are partially effective but not very effective in minimising involuntary turnover and knowledge loss. They also pointed out gaps and areas for further alignment of their HRM practices and KM strategies. An interviewee of SOE9, where KM was not institutionalised, articulated the situation as follows:

I think we have not been deliberate enough to be effective. In some cases, we have done well, in some cases we have not done well. Those pockets of excellence are here and there, but not necessarily calibrated well to a point where we can say we are effective. Therefore, there is still lots of gaps from one practice to the other (Interviewee #17, 2019).

In this particular case, a lack of coordinated strategies and processes regarding KM were problem areas that were further complicated by the fact that there were gaps in all of their HR

practices aimed at ensuring the recruitment and retention of employees. They were not deliberate in managing organisational knowledge, largely because of the informal nature of how it manifested in their organisations. Thus, in some cases where knowledge management was not part of the organisational processes, there was a gap, but on the other hand, there was also a need to refine the science and adopt certain knowledge management principles.

- **Ineffectiveness of HRM practices**

Of the participants, 40% concurred that their practices were not effective in facilitating the retention and management of organisational knowledge at the time of conducting the study. Even HR managers where knowledge management was institutionalised in their organisations, indicated that their HRM practices were not yet effective. One interviewee of SOE2, where knowledge management was part of organisational life, articulated the situation as follows:

I am tempted not to say that we are not there yet, we are not very effective, as we would like to be because of those gaps and then the loss of opportunities for those synergies for us to be able to work together. You know, they started harvesting knowledge many years ago, I think as early as 2013 or so, but we started becoming very involved and get to know what they are doing in recent times. That is why I am saying there has been that lack of working in silos, yet we are trying to achieve as a common goal (Interviewee #9, 2019).

Working in silos was a problem area in a number of the organisations where HR managers did not work together with relevant units in advocating knowledge management. In the case mentioned above, a KM unit was accommodated in the human capital division. Many of the cases (67%) have not yet formalised knowledge management. Thus, their HR practices were not effective in their approach to manage and retain organisational knowledge. Their practices were not geared to support knowledge management.

The next subsection explores the identification of strategies to make HR practices effective in retaining and managing organisational knowledge.

#### **4.3.9.2 Strategies to make human resource management practices effective in facilitating the retention and management of organisational knowledge**

This subsection identifies a number of strategies, proposed by HR managers interviewed, as part of making their practices effective in facilitating the retention and management of organisational knowledge. The researcher summarised the proposed strategies as follows:

- a) Removing silos. Organisational silos were identified as problem areas in many of the SOEs. For instance, one HR manager described the issue of silos in this way:

We can stop working in silos, most of our strategies, they tend to, and it is all people resources, what they are called 'people management', right? Be it talent acquisition, be it development of the talent, nurturing the talent, be it retaining that talent, be it knowledge harvesting, be it sharing of knowledge, all involving people. If we can have an integrated approach to be able to collaborate back and I am sure these, we can work much better (Interviewee #9, 2019).

- b) A lack of remuneration and reward strategies were considered problems in a number of cases. One interviewee recommended a strategy to solve the problem this way:

I think it is having a good remuneration and reward strategy that recognises compliance and effectiveness in knowledge management. That's the one thing that I think would really work (Interviewee #8, 2019).

- c) There was a need for a more integrated approach where everything pertaining management and retention of organisational knowledge is centrally coordinated and supported by human resource management practices.

- d) There was a need for HR practices to remain aligned and agile to deal with growing knowledge and work complexities. One interviewee of SOE1 captured that need as follows:

There is always room for improvement. You cannot say you have arrived; you are not going to do anything. You just need to keep on improving and align yourself with the current environment because you must stay relevant. If you do not stay relevant, even these people are

going to leave the organisation, so you need to be agile as an environment. You need to create those agile spaces because now even the workforce of the future is going to be different from the workforce of now (Interviewee #2, 2019).

- e) HR practitioners expressed a need for a greater degree of alignment and incorporation of knowledge management tools. Misalignment and a lack of integration were considered problem areas. For instance, one interviewee expressed the need in this way:

We need a greater degree of alignment and integration. From the HR, we need to understand these knowledge management tools and integrate them into our processes. We need to leverage on the knowledge management tools (Interviewee #1, 2019).

- f) Regular risk assessments. The loss of organisational knowledge was considered a major risk and problem area in state-owned companies. There was a need to regularly assess knowledge management risks and to develop mitigating strategies to deal with such risks.

- g) There was a need for HR to spearhead the formalisation and refinement of science on knowledge management by adopting certain MK principles. One interviewee described this need as follows:

I think I will latch on to the last response; moving from the intuitive, informal, ad hoc way to a formal, science, institutionalised practice that is recognised and implemented by all. For the greater good of an effective knowledge management transfer system (Interviewee #15, 2019).

- h) There was a lack of short-term incentives aimed at propelling and shaping the strengthening of knowledge management behaviour. There was a need to incentivise people for knowledge sharing behaviours.

- i) Knowledge management, forming part of the performance contracting process, will go a long way, as proposed by a number of HR managers interviewed. For instance, one HR proposed the approach for performance contracting as follows:

KM activities must be incorporated into managers' performance contract as the KPAs. They should form generic KPAs (Interviewee #19, 2019).

- j) A greater awareness and better advocacy of knowledge management in HR practices will serve to enhance an understanding of where the companies stand on KM issues.
- k) Making knowledge management part of the organisational culture. An HR manager of SOE9, where KM is not formalised, articulated their position on organisational culture in this way:

The magic is doing it in a way that does not make line managers and employers feel like an extra thing that they need to be doing. It needs to happen organically or when people come work, it just happens. It should be part of the culture (Interviewee #16, 2019).

- l) There was a need for an organogram with a knowledge management structure and roles. The absence of knowledge management units and roles was evident in six cases of the study.
- m) Mapping out HR roles for knowledge management is the way to go. One interviewee recommended the mapping of that strategy as follows:

We can map out our role as HR to say what role we play to support the knowledge management (Interviewee #20, 2019).

- n) Many of the SOEs in this study lacked a strategy on knowledge management. Therefore, it is not a shocking revelation that HR managers in those SOEs expressed the need for a strategy on KM in this way:

Once we have a strategy, remember structure is preceded by strategy. So, we will need a KM strategy, then you put warm bodies there, then definitely, it will take shape because you will see and feel those people because their KPI will be, for example, how do you harvest this information and knowledge (Interviewee #18, 2019).

Overall, the human resource managers in the sector expressed a need to reflect on their practices in the context of organisational knowledge loss.

The next section establishes specifically whether HR practices are aligned with and focused on managing organisational knowledge loss. The next section also provides a summary of the main findings of the qualitative interview results.

#### **4.3.10 Summary of the qualitative interview results**

Section 4.3 focussed on the presentation of the findings of the qualitative interview process in the mixed methods research study. Voluntary turnover remains a serious problem for a number of the state-owned companies. As such, it does not only create talent retention problems for state-owned companies facing similar issues, but it also complicates organisational knowledge loss because it is not only the loss of employees, but the loss of valuable knowledge that threatens the sustainability and sustained competitive advantage of these companies. The theoretical basis of this research was premised on the theory of knowledge as a resource. Thus, the treatment of knowledge as a vital resource was investigated through the perspective of human resource management (resource-based theory) and knowledge management (knowledge-based theory).

All the human resource managers of the nine SOEs concurred that knowledge and employees are critical resources that need proper management and leadership interventions. Moreover, the loss of organisational knowledge is not something that can be left to the whims of knowledge managers or human resource management or to one particular department in an organisation; it is a key organisational strategy that deserves a well-coordinated approach by all stakeholders in the organisation. The role of human resource management in knowledge management, especially in the state-owned companies, is inevitable in the knowledge economy if HR managers are to play a developing role in positioning the South African economy.

In as far as the qualitative findings are concerned, this study concludes that a lack of knowledge-driven HRM strategies for the recruitment and retention of knowledge workers remains a challenge. In a few cases where knowledge-driven HRM practices existed, they came at the tail end of KM efforts when employees exit the system for the greener pastures. Organisational culture that is not fertile for knowledge management agendas and behaviours, only serves to further complicate the existing complexities facing SOEs in the knowledge economy. Many

SOEs (67%) do not have a variety of strategies, resources and processes that support knowledge management behaviour. The qualitative interview process concluded that as far as the cases in question are concerned, there is a need for a greater clarity, alignment, refinement and integration of human resource management practices to support knowledge management practices.

The next section examines the presentation of the findings of the qualitative content analysis of the annual reports to address certain research objectives and questions of the study. The presentation of the quantitative data obtained from the survey instrument will follow the content analysis processes as part of this mixed methods research.

#### **4.4 Presentation of the findings from the document analysis**

The 2018 annual reports of the nine SOEs that participated in the qualitative interview phase, were also reviewed. For the sake of consistency, only 2018 annual reports were part of the sample documents purposively obtained and authorised for use by the participating companies in the study. The annual reports were reviewed to address certain research objectives of the study. The researcher got permission to review the annual reports in the selected SOEs. Permission were granted by the participating state-owned companies to use their annual reports in the study. The reports are public documents mainly available in the public domain and on the websites of the companies.

The subsection below examines the research question on what causes organisational knowledge loss in the participating companies.

##### **4.4.1 Causes of organisational tacit knowledge loss**

By analysing the annual reports, this section establishes what contributed to organisational knowledge loss in the SOEs. A word list functionality in Atlas.ti was used as a tool to assist the researcher with the analysis of the documents. To address the research question, the researcher used the word list to identify words that are synonymous to staff turnover. Staff turnover caused by resignations, retirements, fixed-term contracts or expiring contracts, deaths and dismissals



were found to be the main contributors of organisational tacit knowledge loss in eight of the nine state-owned companies. SOE1 was an exceptional case in terms of staff retention. In SOE1, voluntary and involuntary turnover seemed not an issue as there was no reporting on such issues in its 2018 annual report. Staff retention was regarded as a critical performance area for the company and it reported various retention incentives for critical skills. The data from the reviewed annual report confirmed the position of their HR managers in the qualitative interview as they indicated that they are good at retaining employees and critical skills. The only resignation mentioned in the annual report is that of a member at the board level. Other than that, there was no other voluntary turnover captured in their annual report.

Whilst staff turnover did not seem to be a problem at SOE1, the same cannot be said for the other eight participating SOEs. Overall, staff turnover remained a challenge for those companies. However, the level of staff turnover differed from one state entity to another. In SOE2, resignations and retirements were main problem areas contributing to an overall staff turnover of 8.1%. Out of 849 employees, 52 employees were lost through resignations, ten through retirement, four through dismissal, two through death and one as a result of subsidiary deployment, which accounted for 69 employees lost through both voluntary and involuntary turnover. The annual report revealed that there was an employee turnover of 8.4% in the age group 30-50 years and 8.0% in the age group 50 years and older. The staff turnover in the case of employees younger than 29 years was 5.0%.

In 2018, SOE3 with a staff complement of 220 employees, recorded 26 (2.8%) resignations for the period. Retirement was not an issue in this company as it is a young state-owned company and the average age of its employees was 35 years. No deaths or dismissals were reported in the same period.

SOE4 had 593 total employees for the period under review and experienced a high voluntary turnover. Out of 62 employees who left the company, 58 (94%) resigned and the remaining 4 (6%) left due to involuntary turnover such as death, dismissal, retirement and ill-health.

SOE5 did not report on issues pertaining to voluntary and involuntary turnover in the reporting year, even though the HR managers flagged voluntary turnover, baby boomers and aging workforce as the main causes of organisational knowledge loss.

In 2018, an SOE6 in the research and development sector reported high staff turnover. For instance, 79 employees out of a staff complement of 538 were lost during the year under review, 43 (54%) of the 79 resigned, whilst the contracts of 32 (41%) of those employees expired. The fact that many of the employees in this state-owned company were employed with fixed contracts, created serious knowledge loss risks that threatened the organisational sustainability. The findings obtained from the analysis of the annual report of SOE6 confirmed what the two HR managers from this organisation said in the interview phase of the research, namely that the nature of fixed-term contracts contribute to overall staff turnover, thus resulting in organisational knowledge loss. What is even more interesting is the fact that this state-owned company is a knowledge-intensive or knowledge-based organisation because the nature of their research work depends entirely on knowledge and skills of its researchers.

Staff turnover was also indicated as a challenge in SOE7, which affected its performance. An extract from the reviewed report claims that the inability to achieve some of their targets was adversely constrained by the inability to fill critical positions due to staff turnover and a decline in funding. SOE7 was one of the two state-owned companies operating in the research and development environment. The company reported that in 2018 it had a staff turnover of 184 of which 83 were resignations, 41 were normal retirements, 19 were early retirements, 17 were due to death, 12 due to termination of contracts, seven due to dismissal and five were employees became medically unfit. It seems that staff turnover was a serious challenge in this sector. For instance, the 2018 annual report of SOE7 reported that 18 employees with doctoral degrees and 21 with master's degrees exited the system.

SOE8 with a staff complement of 149, operated as a service organisation and in a specialised environment. Staff turnover was also a problem area in that the company. It reported that 20 (13.42%) of the total staff exited the company. Ten (6.7%) of the total staff left due to resignations, seven (4.7%) due to retirement, two (1.34%) due to expiry of contracts and one

(0,67%) due to dismissal. In this case, resignations and retirement were main contributors of knowledge loss.

SOE9 presented another unique case of staff turnover with a total turnover of only 6.1%. The majority of employees (35) left because their contracts expired, followed by resignations (34), retirement (10), dismissals (2), declared medically unfit (2), abscondment (2) and death (2) deaths. In total, 87 out of 922 employees were lost through voluntary and involuntary turnover. Expiry of employment contracts, followed by resignations and retirements, were the three main contributors of knowledge loss in this SOE. These three variables are problem areas in the public utility sector and associated with knowledge loss risks that threaten the performance and sustainability of SOEs as key drivers of economic growth and positioning the country as a developmental state.

It can be deduced from the reviewed annual reports that staff turnover varies from one organisation to another. However, resignations as a form of voluntary turnover, and other forms of involuntary turnover such as expiry of contracts, normal retirements and early retirements, are the main contributors of organisational knowledge loss in the state-owned entities. Involuntary turnover as a result of deaths, dismissals and medical reasons are additional variables contributing to knowledge loss in the companies that participated in the study.

The findings regarding this research question concurred with the views expressed by the majority of the human resource managers in the interview phase. Non-reporting of the overall staff turnover in one of the state-owned companies where resignations and retirements were problem areas (as highlighted in the interview phase), resulted in reporting discrepancies.

The next section examines the research question whether organisational knowledge and employees are recognised as sources of sustained competitive advantage.

#### **4.4.2 Knowledge and human resources as sources of sustained competitive advantage**

This section seeks to establish whether SOEs recognise and treat organisational knowledge and employees as sources of sustained competitive advantage. The annual reports of the reporting

period seemed to emphasise the importance of human resources as fundamental resources driving the performance of the state-owned companies. However, in terms of organisational knowledge, some of the state-owned companies were silent on that the matter. The findings differed from one company to another. Some companies put more emphasis on the importance of their workers and their knowledge as sources of their competitive advantage, whereas in others, the emphasis was limited to only the human resource aspect of the question. For instance, SOE1, which is a state-owned development finance institution, seemed to understand the connection between people and knowledge assets. The human capital section of their annual report was full of resource-based and knowledge-based statements, for instance:

Our human capital is represented by our employees, partners, customers and suppliers. It is also manifested in the availability of appropriate skills. Our employees are a critical driver of the business performance and sustainability and the high calibre of current management at senior operational level is instrumental in creating value and long term sustainability for the organisation (SOE1, 2018).

Knowledge management featured predominantly in the reviewed annual report. Their reporting on both tangible and intangible assets such as human capital, manufactured capital, finance capital, social and intellectual capital showed how seriously the company views its employees and knowledge as sources of competitive advantage. What caught the researcher's attention was the blending of human capital and knowledge resources as the key drivers of their organisational strategy. The emphasis was on the importance of their employees and knowledge in the value-creation process of the organisation and indicated a high level of interest in these areas. The company claimed to drive investment in human capital and critical skills in building organisational capability to drive and sustain a culture of high performance. Their workforce are seen as a source of competitive advantage. Therefore, it did not come as a surprise that the company has well-established knowledge management practices, resources and structures. The SOE regards intellectual capital as industry-specific expertise and know-how. Retention of critical knowledge and skills was a strategic focus area in the reporting. Therefore, it did come as a surprise that there was no reporting on staff turnover since retention was a strategic focus area of the business.

SOE2 is another state-owned development finance institution, which prioritise employees and knowledge at the centre of their strategy. Their 2018 annual report revealed their emphasise on both resource-based concepts such as financial capital and manufactured capital and knowledge-based concepts such as human, intellectual and intellectual capital. What caught the attention of the researcher was the notion of human capital and the blending of human capital, the enhancement of skills and capacity to entrench a culture of performance and development. As is the case with the SOE1, their annual report considered their employees as human capital. The company also detailed the importance of social capital in their reporting. At the core of their social capital is a network of employees, entrepreneurs, government, funders and development. It was interesting to note that this state-owned company pride themselves in their industry-specific knowledge and knowledge derived through industry experience. Its annual report also revealed that the company strive to build knowledge management capability. However, unlike SOE1, staff turnover remains a serious challenge threatening these capabilities. In both these state-owned development finance institutions, there are dedicated knowledge management structures, roles and processes.

SOE3 is a state-owned regulatory and compliance company. Strategic reporting was also resource-centric and knowledge-centric because they focus on developing their human resources, systems and human capital in achieving the organisational strategy. The company reported willingness to invest in knowledge management systems, especially in the capturing system. For instance, the annual report claimed the following:

The company aims to become a knowledge-intensive organisation with strong, reliable and integrated information management systems, underpinned by the best-in-range information technology (IT) platform (SOE3, 2018).

The findings, obtained from the analysis of this annual report, seems to confirm the assertion made by the HR managers in the qualitative interview phase wherein they emphasised the fact that the company invested in a knowledge capturing system whereby employees are forced to capture and store knowledge. It is a Schedule 1 offence for the employees of the company not to capture their knowledge activities in the knowledge management system. This shows how

serious the company takes organisational knowledge as a source of competitive advantage. The state-owned company is one of the three SOEs that have knowledge management units, systems and processes in their organisational structures.

SOE4 is another state-owned company operating in the regulatory and compliance sector. The company does not have knowledge management structures, roles and systems. However, their 2018 annual report indicated that they regard their human resources as critical to the achievement of their organisational targets. To ensure an effective and robust financial investment climate, the company deployed a rigorous human capital management process to meet its strategic and tactical objectives. To show that they are serious in treating their staff as a source of sustainable competitive advantage, the company reported that 81% of its workforce attended a number of training interventions (held in-house and externally) during the period under review. In as much as human resources are treated as fundamental resources, it is difficult to say whether the company recognised and treated knowledge as a source of competitive advantage. There was no mentioning of the words ‘knowledge management’ in the annual report. Nevertheless, it was extremely difficult to deduce whether the company prioritised knowledge in their strategy as sources of superior business performance and sustainability.

SOE5 is a state-owned water utility company. The company did not have a knowledge management unit during the reporting period. From the 2018 annual report, it was unambiguous how they treat their employees as sources of competitive advantage. In the report, below their human resources strategy, the company acknowledged “staff as an important resource”. However, the same could not be said of organisational knowledge. Investment in various capacity development programmes indicated how serious the company views its workers as important resources and sources of high-performance culture. Knowledge management was mentioned only once as the responsibility of the Group Strategy Executive. As in the previous case, it was difficult to deduce whether the company prioritise and treat knowledge in their strategy as a source of superior performance. Their reporting for the period under review was limited to issues pertaining to human resources, and not to knowledge assets, as in the case of the previous three state-owned companies.

SOE6 is one of the two state-owned research and development companies that participated in the qualitative phase of the study. This SOE, as a R&D entity, is a knowledge organisation by nature. The company did not have a knowledge management unit during the reporting period. The reviewed annual report revealed that the company is committed to recruiting experienced human assets (researchers) whose research outputs are positively supporting South Africa's development agenda. Human assets, in the form of its researchers and research outputs, are knowledge assets. Therefore, it can be deduced that for this R&D state-owned company, researchers and their knowledge assets are prioritised in the organisational strategy as sources of superior performance. Various investments made in capacitating the employees or researchers are testament to that assertion. However, knowledge management was hardly mentioned in its annual report. Therefore, in the absence of dedicated KM processes and systems, it is difficult to establish to what degree the company treats and recognises knowledge as sources of sustained competitive advantage, especially given the fact that turnover caused by termination of fixed-term contracts, resignations and retirements was common in SOE6.

SOE7 is another state-owned research and development company that participated in the qualitative phase of the study. Like the previous case, the company did not include knowledge management in the reporting period. The state-owned R&D organisation claimed to be a knowledge organisation. It appeared that the company prioritised its employees and knowledge in its organisational strategy as sources of sustained competitive advantage, because the reviewed annual report indicated that their organisational success depends on a high level of skills and staff professionalism of its employees. The primary mandate of the company emphasised the facilitation of skills development and knowledge management in the sector. Therefore, the organisation did appear to prioritise knowledge and employees at the centre of their business strategy and regard them as sources of competitive advantage. However, the annual report reviewed reported that a loss of qualified professionals in scarce and critical skill areas remains an area of concern to the organisation, as it means a loss of capacity in certain studies. Knowledge management was mentioned a few times in the annual report, however, a lack of a dedicated knowledge management unit or structure and strategy remains a problem area. Like in the case of SOE6, it is difficult to deduce to what extent this particular SOE treats

and recognise knowledge as sources of competitive advantage in the absence of dedicated systems to manage organisational knowledge. In many SOEs, capacity development, through various training and development interventions, was a good indicator of how an organisation prioritised its human resources in its business strategy. A lack of performance indicators related to knowledge is a problem area in a number of the state-owned companies.

SOE8 is the state-owned service company that did not report knowledge management activities during the reporting period. From the reviewed annual report, the company seemed to treat and recognise its employees as sources of sustained competitive advantage because it invested in its staff and their pursuit to gain knowledge and to contribute towards a culture of organisational performance excellence. The emphasis that the company placed on investing in staff, and its pursuit to gain knowledge, seems to indicate that this particular company prioritise its employees and knowledge at the centre of its strategy as sources of sustained competitive advantage. However, to what degree knowledge is prioritised as a source of sustained competitive advantage, could not be established because of a lack of a dedicated KM structure, role, system and strategies to manage organisational knowledge. Knowledge management was hardly mentioned in the reviewed report.

SOE9 also reported knowledge management activities during the period under review. However, the report captured RBV and KBV indicators or concepts such as human capital, manufacturing, intellectual capital, natural, financial and social and relationship capital as key resources to create business value. What specifically gained the attention of the researcher, was the mentioning in the annual report of intangible resources such as human capital, intellectual capital, social and relationship capital. Human capital, intellectual capital, social and relationship capital are knowledge-based assets. Knowledge management was nowhere mentioned in the annual report despite the use of those intangible resources. The company also emphasised that its employees play a critical role in attaining organisational vision, delivering the strategy and living the core values. Therefore, from the reviewed report it can be deduced that this state-owned service company prioritise its human resources and knowledge assets in its strategy as sources of sustained competitive advantage. It can also be deduced that this organisation regards and treats



knowledge as sources as competitive advantage, even the absence of dedicated KM systems and resources.

In conclusion, the findings of the document analysis of the annual reports revealed that SOEs were at different transitions in terms of how they prioritised, treated and recognised knowledge and employees in their strategies as sources of superior performance (sustained competitive advantage). Whilst their investments and focus on human resources development were clear, the same cannot be said of the recognition and treatment of organisational knowledge in many of the SOEs. According to the researcher, the absence of dedicated KM structures, resources, processes, systems and strategies to manage and reduce organisational knowledge loss remains a problem area for a number of the state-owned companies.

The next section identifies knowledge management practices currently in place in the SOEs.

#### **4.4.3 Knowledge management practices in the state-owned enterprises**

In order to address the research objective on knowledge management practices currently in place and their effectiveness in addressing the phenomenon of organisational tacit knowledge loss, this section seeks to provide answers to the following research question: *What knowledge management initiatives are currently in place to manage tacit knowledge loss in the SOEs?* The latter part of the research objective, namely the effectiveness of SOEs in addressing the phenomenon of tacit knowledge loss, was not addressed in the reviewed annual reports as it was tested in the quantitative phase. The findings of the reviewed annual reports revealed the following knowledge management practices or strategies in place, regardless of whether the companies have knowledge management or not:

- Succession plans
- Collaboration platforms or knowledge exchange platforms
- Staff and stakeholders engagement forums
- Staff secondments
- Training and development investment strategies
- Local and international conferences

- Workplace meetings
- Bursary programmes
- On-job boarding
- In-house academies
- Coaching and mentoring programmes
- Graduate internship programmes
- Information resource centres
- Records management
- Knowledge management (capture) systems
- Interviews with industry experts

These knowledge management practices were found in one or more than one of the reviewed annual reports. What gained the interest of the researcher is the fact that some of the knowledge management activities such as knowledge harvesting, master classes, expert forums, on-job shadowing and job rotations that were mentioned during the interviews with the human resource managers, did not appear in the annual reports reviewed.

#### **4.4.4 Knowledge-driven HRM practices supporting knowledge management**

This section examines human resource management practices that support knowledge management in the reduction of loss of organisational tacit knowledge. In particular, training and development, and retention practice were examined in great detail in the annual reports as they play a critical role in the management and reduction of organisational tacit knowledge loss. First next sub-section examines the role of recruitment practiced in this regard.

##### **4.4.4.1 Training and development practices**

In SOE1, which is a state-owned development finance company, at least 5% of the company's guaranteed pay payroll was set aside for training and development of employees. This illustrates how serious this SOE was in ensuring that their staff is exposed to opportunities for knowledge acquisition, development, transfer and retention. The company claimed that individual development plans are part of the annual performance plans (APPs) and ATP. The reviewed

annual report indicated that in 2018, this SOE invested R30.6 million in training and development. This was to ensure that its employees stay relevant in their domain of expertise in order to close any skills deficits and to widen their careers.

SOE2 also reported investing in talent-development opportunities for its staff. According to its annual report, the company's strategic focus area is about investing in human capital. Through investment focused on the development of employees, the company basically aimed at building KM capability that could ensure the transfer, retention and protection of intellectual capital. Whether, the retention and the protection activities worked or not, the increasing staff turnover rate for the reporting period is an area of concern, given the huge investment in capacitating the staff.

SOE3, like all other state-owned companies, seems to have developed a keen interest in developing its staff. The reviewed document revealed that R3.3 million was spent on training and development of its staff.

SOE4 is also a big investor in training and developing its staff complement. In addition to this, a graduate development programme and an actuarial bursary programme were some of the programmes in place to build talent and knowledge.

During the reporting period, state-owned companies went to great lengths in developing capacity development programmes by opening up training opportunities for their human resources. This was also evident in SOE5. The company provided opportunities to its staff to improve organisational productivity. These training opportunities were performed through WSP and annual training plans (ATR) that were submitted annually to the relevant SETA. Although the company reported training in terms of the number of training opportunities, it did not quantify the monetary value spent on such training and development opportunities. The company was one of the few state-owned companies that has its own internal academy. Through the academy, the company sought to widen access to training and skills development opportunities for its staff and other external stakeholders in the sector.

By nature of its mandate, SOE6 reported special dedication to research capacity development. The review of the annual document revealed that SOE6 employed 62 researcher trainees, comprising 21 Master's degree trainees, and 41 PhD researcher trainees at the end of the reporting period. For the period under review, 242 out of a total of 538 employees attended various in-house training programmes. Furthermore, about 77 of the researchers attended researcher trainee programmes.

SOE7 is an R&D organisation and reported on similar trends regarding training opportunities provided to employees. The company reported human resource development through personal development programmes as a strategic investment focus area. A competency framework assisted the company's researchers and research technicians to enhance their skills and competency levels in their core business areas. Like many other state-owned companies participating in the study, the company implemented a number of training interventions through a WSP. According to its WSP, 390 of its staff complement were engaged in formal university studies. Of its employees, 137 were busy with their PhD studies and 73 with master's degree programmes. What received the researcher's attention is the fact that the employees engaged in formal studies without receiving any incentives to encourage them to acquire further qualifications.

The SOEs in the service sector also invested in learning and development opportunities. The number of employees in each of the companies, influenced the total training expenditure. SOE8 reported that 41 of its 149 staff complement attended training at a total cost R179 000.

SOE9, a company in the development finance sector, also reported that it had spent R2.7 million on training in the period under review. The emphasis was placed on training programmes that were aimed at supporting the growth of technical and functional expertise in core competency areas.

What caught the attention of the researcher is that state-owned companies that reported on training and development opportunities, varied from one company to another. Furthermore, training and development seemed to be key performance indicators because all nine reviewed

reports included information on learning and development opportunities. Some companies reported on the actual costs spent on training and development opportunities, whereas others did not report the financial costs of the opportunities provided. However, the findings revealed that training and development opportunities, both internal and external to the companies, assisted employees to acquire and develop new knowledge, thus enhancing their knowledge capacity to act and perform. In the case of two companies in the R&D sector that participated in the study, external presentations at local and international conferences or workshops and publication of research outputs were part of their performance contracts. That served to facilitate the knowledge management activities and behaviours.

#### **4.4.4.2 Retention practices**

This subsection provides the findings of the reviewed annual reports pertaining to retention practices. Several of the participating state-owned entities had a number of retention strategies intended to reduce loss of organisational tacit knowledge. Overall, in terms of staff retention and turnover, resultant knowledge loss was a problem area in eight of the nine SOEs that participated in the study. The findings revealed that there was one SOE that was good at the retention. For instance, in its annual report, SOE1 claimed that it had a remuneration policy in place. Retention was a crucial focus area in its performance management system and there were various retention incentives for critical skills reported in the reporting year. The retention of critical skills was contained in the policy and performance contracting at the line management function. That served to ensure that critical skills are retained in the company at all costs. Retention of staff meant retention of their knowledge and skills. Knowledge management is part of the performance contracting and reviews in this state-owned enterprise. This finding confirms earlier findings of the qualitative interviews where this particular state-owned company indicated that staff turnover is of no relevance and not an issue in the organisation. No resignation issues could be found in the annual report other than one resignation that happened at board level. This case presents the best practice as well as a staff retention model for other state-owned companies.

SOE2, another state-owned development finance company, also claimed investment in staff recognition and retention. Whilst the company prided itself in investing in human development,

recognition and retention, voluntary turnover and retirements were major challenges reported in the reviewed annual report. During the reporting period, the voluntary turnover of employees in critical roles increased from 6.7% to 8.0%. On other words, the retention of critical talent and critical skills contributed to organisational knowledge loss. What interested the researcher most is the fact that there were well-established KM practices, systems and processes driven by the human resource department, in particular learning and development. Furthermore, contributions to knowledge management were recognised and rewarded. However, retention remains a challenge that calls for urgent attention.

SOE3 also strived to obtain healthy staff retention rates. Nevertheless, the review revealed that 26 (11.8%) out of 220 employees resigned in the reporting period. Staff retention was a challenge in the period under review. What received the attention of the researcher is that fact the company's HR managers in the interview process indicated that their staff retention rate was 98%. But, the turnover figures in the annual report revealed contrasting views on that matter. However, organisational efforts aimed at healthy staff retention rates were the apex of their strategy agenda.

Performance rewards and recognition were some of the drivers of staff retention in SOE4. The findings of the reviewed annual document revealed that the company recognised and rewarded exceptional performing employees at the end of that performance cycle. In the reporting cycle, the company spent R15.6 million on 488 exceptional performers. However, it also lost 62 employees through resignations and two of those terminations were at executive level. The data from the reviewed report indicated that the employee turnover rate increased from 8% to 11% during the 2018 reporting year. This begs the question of whether staff performance rewards and recognition systems aimed at retaining staff were effective or not. However, this data presented an interesting perspective on the issue.

SOE5, like other SOEs discussed previously in this chapter, put more emphasis on the attraction and retention of skills, as revealed in its annual report. The report detailed a number of strategies such as rewards and recognition systems and short-term and long-term incentive schemes to retain its staff. The company revealed that it met its target of 5% with a performance of 1.91%

because of a strategy to attract and retain staff with critical skills. Nevertheless, it must be noted that their report did not reveal the actual staff turnover dynamics and the actual numbers pertaining to that reporting period, as was the case with other companies reported in the study. Moreover, during the interviews with the three human resource managers, the struggle to recruit and retain mission-critical skills as a result of resignations and retirements, was noted as a serious problem.

Staff retention problems were reported as serious challenges in two of the state-owned research and development companies (SOE6 & SOE7) participating in the study. SOE6 reported that there were no performance bonuses paid to the staff despite having a performance management system in place. As a result, the situation affected staff moral while the companies struggled to attract and retain skilled staff. SOE7 reported a low turnover of 4% for the review period. However, the organisation noted that a loss of a qualified professional in a scarce and/or critical skills area remains a challenge to the institution, as it means loss of capacity for certain research activities. It was interesting to note that both these state-owned companies in the R&D sector were much dependent on fixed-term contracts. SOE6 reported 56 fixed-term contract appointments, and employees whose contracts ended accounted for 41% of the staff turnover for the reporting period. The data in the annual report of SOE7 revealed that 656 employees out of a staff complement of 2983 were on fixed-term contracts.

According to the researcher, fixed-term contracts is a form of involuntary turnover because employees are forced leave upon the expiry of their contracts. Moreover, this adds to voluntary turnover, plus retirements serve to complicate knowledge loss risks and dynamics. Staff retention remains a serious challenge in the R&D state-owned companies in the study. The situation means a loss of capacity for certain research activities, and therefore it threatens the sustainability of these knowledge organisations. No retention strategies and knowledge-driven strategies further complicates the problem of knowledge loss in the organisations.

SOE8 reported that its human resource department is responsible for recruitment as well as the retention of qualified staff. It also struggled with retention for the period under review as it revealed that 13.4% (20 out of 149) of the total number of staff left the organisation. The

findings also revealed that this state-owned service company also struggled to obtain funding for filling vacant positions. That further complicated the retention challenges.

SOE9 is also a service company. The analysis of its annual report revealed that it had implemented a performance management process, short-term performance incentives and annual salary increments for performing staff, as part of its retention practices. However, like many other state-owned companies, SOE9 struggled with staff retention. It also reported that a number of people left, mainly because of resignations and retirements and contracts that ended.

Increasing staff turnover and a lack of effective retention strategies are causing havoc in many SOEs, worse even for those companies that still do not have knowledge management systems, structures and processes.

The next section presents the findings of the survey instrument.

#### **4.5 Presentation of the quantitative findings obtained from the questionnaire**

This section presents the statistical analysis of the results from the survey questionnaires distributed to the SOEs that participated in the study. The quantitative analysis is divided into three parts: first, the analysis and presentation of responses and charts of all 56 variables, secondly, the results of exploratory factor analysis (EFA), and lastly, chi-square and logistic regression analysis to identify variables that are significant in the formation of the framework.

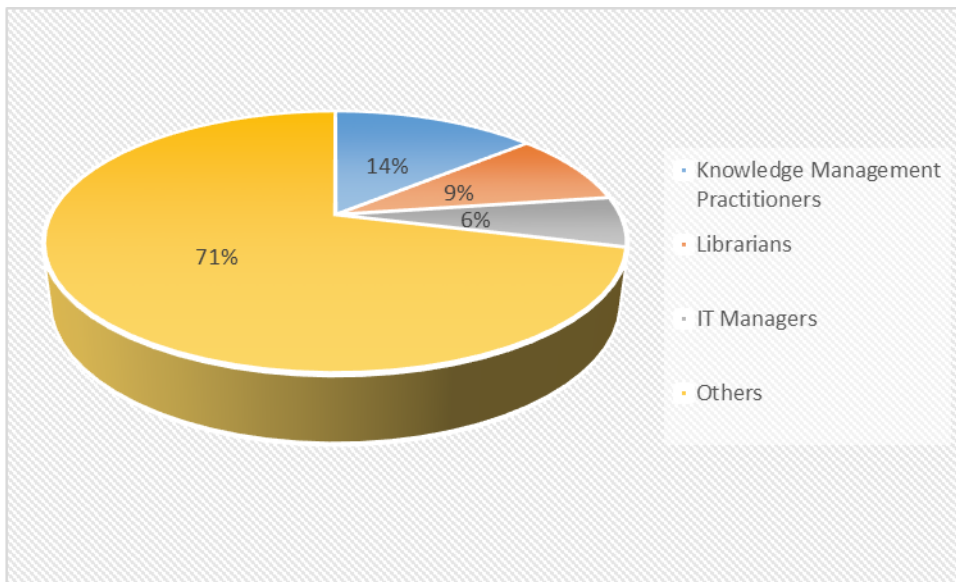
Three out of the nine SOEs that participated in the qualitative phase gave permission for the distribution of questionnaire to employees in their organisations during the quantitative phase of the study. The same instrument was also distributed to all 40 knowledge management practitioners working in South African SOEs and affiliated to KMSA.

The next subsection presents the actual statistical analysis based on the factor analysis of the quantitative data, starting with a biographical data analysis of the respondents.



#### 4.5.1 Biographical data of the respondents

Of the respondents in the SOEs, 25% (145 of 585) completed the survey questionnaire of which 82 (57%) were male and 63(43%) were female respondents. An analysis of their job titles indicates that 14% were knowledge management practitioners, 9% were librarians, and the IT managers representing 6% of the total respondents. The rest (71%) were other employees. See Figure 19.



**Figure 19: Job titles of the respondents**

A numerical analysis of the respondents shows that out of the total 145 respondents, 20 were knowledge management practitioners, 13 were librarians, nine were information technology managers and the rest (103) were other employees,.

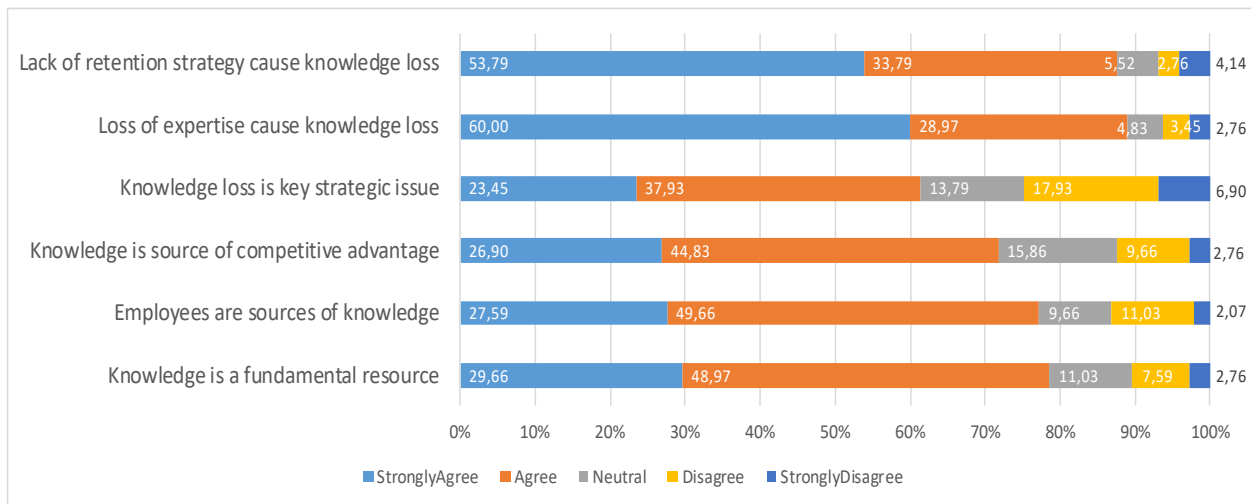
The next section provides a statistical analysis of the responses on the variables of the study.

#### 4.5.2 Presentation of the results from survey questionnaire

This section presents the statistical analysis of the responses on the research questions as contained in the survey questionnaire.

#### 4.5.2.1 Recognition and causes of knowledge loss

A lack of retention strategy and a loss of expertise remain key contributors of knowledge loss in the cases investigated in this study. The data indicated that more than 80% of the respondents concurred that a lack of retention strategy (88%) and loss of expertise (89%) causes organisational knowledge loss. On the other hand, an insignificant percentage of respondents (6%–7%) were of the view that knowledge loss is not caused by a lack of retention strategies and a loss of expertise, whilst 4%–5% did not provide information on the variables. The statistical data revealed that 79% of employees of SOEs that participated in the study, recognised knowledge as a fundamental resource and 75% of them recognised employees as a source of knowledge. See Figure 20 below. Furthermore, knowledge was recognised as a source of competitive advantage by 72% of the respondents. In addition to that, knowledge loss was seen as a key strategic issue by 61% of the respondents, whilst a noticeable share of respondents (25%) did not regard it as key issue, and only a small share of respondents (14%) remained neutral



**Figure 20: Recognition and causes of knowledge loss**

The next sub-section provides responses relating to knowledge management practices and their effectiveness in addressing the phenomenon of tacit knowledge loss in SOEs.

#### **4.5.2.2 The effectiveness of knowledge management practices**

The responses on the effectiveness of knowledge management practices or strategies varied from one variable to another (see Figure 21). The responses indicated that 43% of the respondents replied that coaching as a knowledge sharing strategy did not apply, indicating that the state-owned companies did not apply coaching as a knowledge management practice. On the other hand, a noticeable share of respondents (34%) indicated that their companies make use of coaching as a knowledge-driven strategy, while 23% of the respondents did not know whether coaching as a KM strategy exist in their company.

Responses on mentoring as a way of managing knowledge loss present almost a similar picture. The majority of respondents (41%) indicated that mentoring did not apply to their companies. A noticeable share of respondents (34%) indicated that mentoring did not apply to their companies, while 25% of respondents did not know whether mentoring is applied as a knowledge loss management strategy. On a positive note, SOEs provide training and development opportunities for their employees to improve their knowledge and skills, as 88% respondents concurred that their companies provided them with opportunities to improve their skills and expertise. The majority of the respondents (43%) indicated that their employers encouraged them to actively participate in community of practices (CoPs), whilst 28% argued that CoPs did not apply. In addition, a noticeable number of respondents (29%) did not know whether CoPs are actively encouraged in their companies.

According to the researcher of the current research, job rotation as a knowledge management strategy remains a problem area in the state-owned companies as the majority of respondents (60%) argued that companies did not use job rotation for knowledge workers to gain experience by moving them across different functional areas or divisions. A small but noticeable share of respondents (21%) did not provide information on the variable indicating that they are less informed about job rotation in their organisations, while 19% replied that the question did not apply in their case.

A lack of a programme for retiring experts is another challenge in state-owned companies because 55% of the respondents indicated that their SOEs do not have such a programme, while

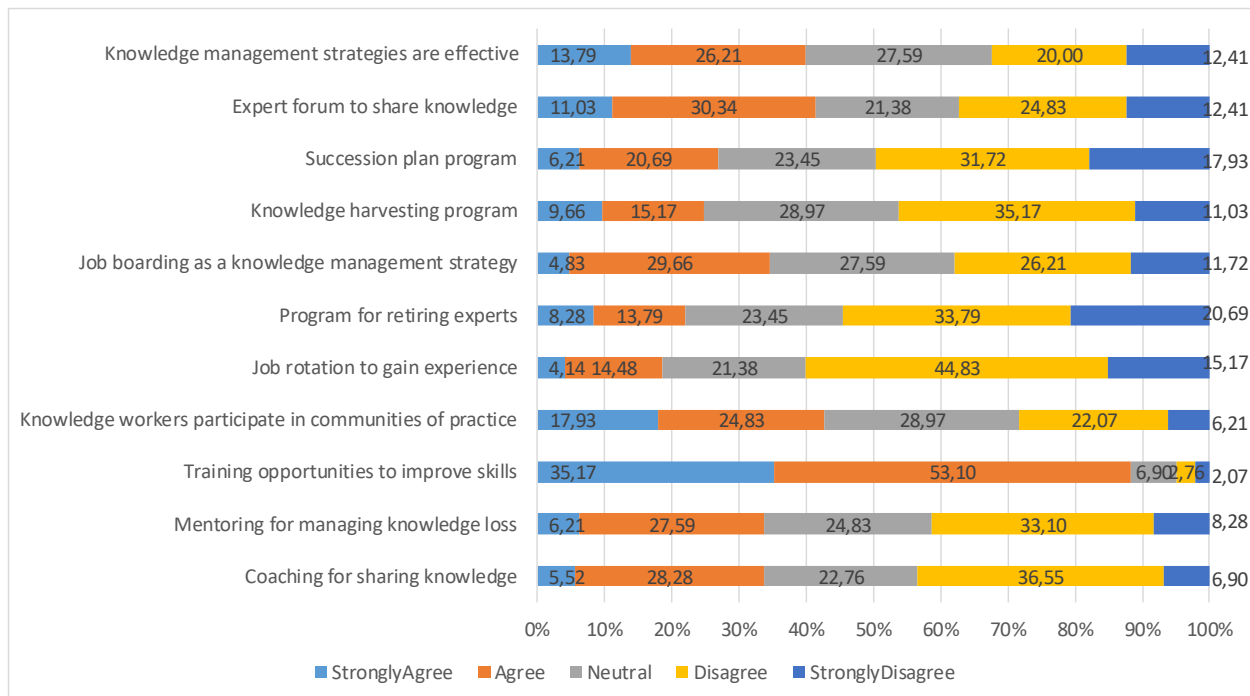
22% said that there is a programme in place for the retiring experts. Of the respondents, 38% either disagreed or strongly disagreed that job shadowing was part of a management strategy, while 34% indicated that it was part of KM strategy in their organisations. Again, like in other variables discussed in this section, a small but noticeable share of respondents (28%) did not know or were less informed whether job shadowing was applied as a KM strategy.

The majority of respondents (46%) indicated that a knowledge harvesting program did not apply in their organisations, while 25% of respondents responded, conversely, that their companies have a knowledge harvesting strategy. A noticeable share of respondents (29%) replied 'neutral' to the statement.

A lack of succession planning is another problem area that was indicated by the majority of respondents (50%), while only 27% of the respondents indicated that a succession plan is applied, while a smaller share (23%) of respondents were less informed of the succession planning practice in their SOEs.

Expert forums for experts to share knowledge with knowledge workers seemed prevalent in some state-owned companies. The majority of respondents (41.4%) confirmed that expert forms apply in their companies, whereas 37.2% confirmed the opposite, indicating that their companies do provide expert forums as a knowledge sharing strategy. A smaller share (21.4%) of respondents were less informed or did not know of the existence of such knowledge sharing platforms.

Regarding the overall effectiveness of KM strategies or practices in ensuring that companies reduce knowledge loss, 40% of the respondents indicated that these knowledge management practices are effective, whereas 32% indicated that the practices are not effective. A noticeable small share (28%) of respondents did not know or did not have information about its effectiveness.



**Figure 21: Knowledge management practices**

The next subsection explores how HR recruitment practices support KM activities.

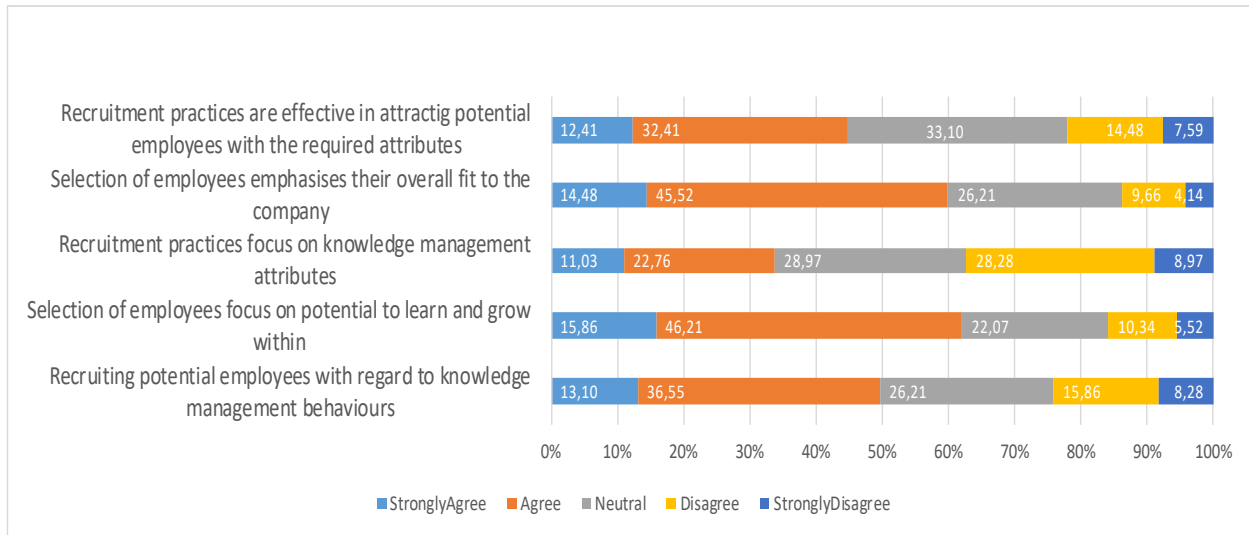
#### 4.5.2.3 Human resource recruitment practices supporting knowledge management activities

Human resource departments play a critical role in the sourcing of employees with relevant skills, knowledge and expertise. The statistical analysis of the responses (see Figure 22) reveals that the majority (50%) of the respondents agreed that their HR recruitment practices support the company in recruiting candidates with the required KM behaviour such as knowledge sharing, learning, networking capabilities, etc., while 24% indicated that recruitment practice did not support knowledge management behaviours and activities. A small but noticeable share (26%) were less knowledgeable or did not know if the variable supported KM activities.

A significant share (62%) of the respondents indicated that the selection of employees focused on their potential to learn and grow in the organisation, whereas a small share (16%) said the contrary, indicating that selection practices did not focus on the potential to learn and grow in the

organisation. A small but noticeable share of 22% did not know or were less informed about whether recruitment practice focused on the potential to learn and grow in the organisation.

The majority (37%) of the respondents indicated that recruitment practice did not focus on KM attributes such as coaching, mentoring, innovation, knowledge sharing, teamwork, team player, etc., whereas 34% indicated that there was such a focus on those KM attributes. Moreover, a small but noticeable share of 29% did not have information about the variable.



**Figure 22: HR recruitment practice support to KM activities**

For the majority of the respondents (60%), the recruitment and selection of employees emphasised their overall fit for the company in terms of personality, values, norms, etc., while a small share (14%) disagreed, indicating that this did not apply in their organisations. A small but noticeable share of the respondents (26%) did not know or did not have information regarding the emphasis on overall fit.

The majority of the respondents (45%) indicated that the recruitment practices were effective in attracting potential employees with the required knowledge attributes (such as coaching, mentoring, innovation, knowledge sharing, team work, team player, etc.). A minority share of respondents (22%) was in disagreement, indicating that recruitment practices were not effective in attracting employees with such knowledge attributes. It is a worrying development that a good

share of respondents (33%) did not know or were less informed if the recruitment practices were effective in attracting potential employees with those attributes.

The next subsection explores how staff training practices support knowledge management activities and behaviour.

#### **4.5.2.4 Human resource training practices supporting knowledge management activities**

The responses of participants concerning staff training and development opportunities (by providing benefits for employees to continually learn and acquire new knowledge and skills) are captured in Figure 23. More than 80% of the respondents affirmed that their companies provide many benefits for employees to continuously learn and acquire new knowledge, for example, paying tuition fees, supporting attendance of conferences or other learning and development opportunities. In contrast, an almost unnoticeable share of respondents (4%) indicated that benefits were not provided and 7% did not know or have no information on this variable.

The use of job rotation for employees to gain experience is a problem area since the majority (53%) of respondents indicated that it did not apply, while 21% indicated that job rotation is applied in their companies. A small but noticeable share (26%) of respondents indicated that they were less informed about job rotation.

Job shadowing as a knowledge management strategy was unheard of by the majority (45%) of respondents, whereas a small but noticeable share (25%) responded that the practice applied in their organisations. A noticeable share (30%) of respondents were less informed about the use of job rotation as a KM strategy.

A significant majority (79%) of the respondents responded that their companies invest considerable resources in building CoPs (e.g., providing technical support, budgets and rewards), and 10% responded in the opposite, while 11% were less informed about investment in CoPs.

The majority of respondents (63%) indicated that staff training focused on job-specific knowledge acquisition, while (18%) of respondents argued that this did not apply and 19% were less informed about this. About two-thirds (67%) of the respondents indicated that staff training

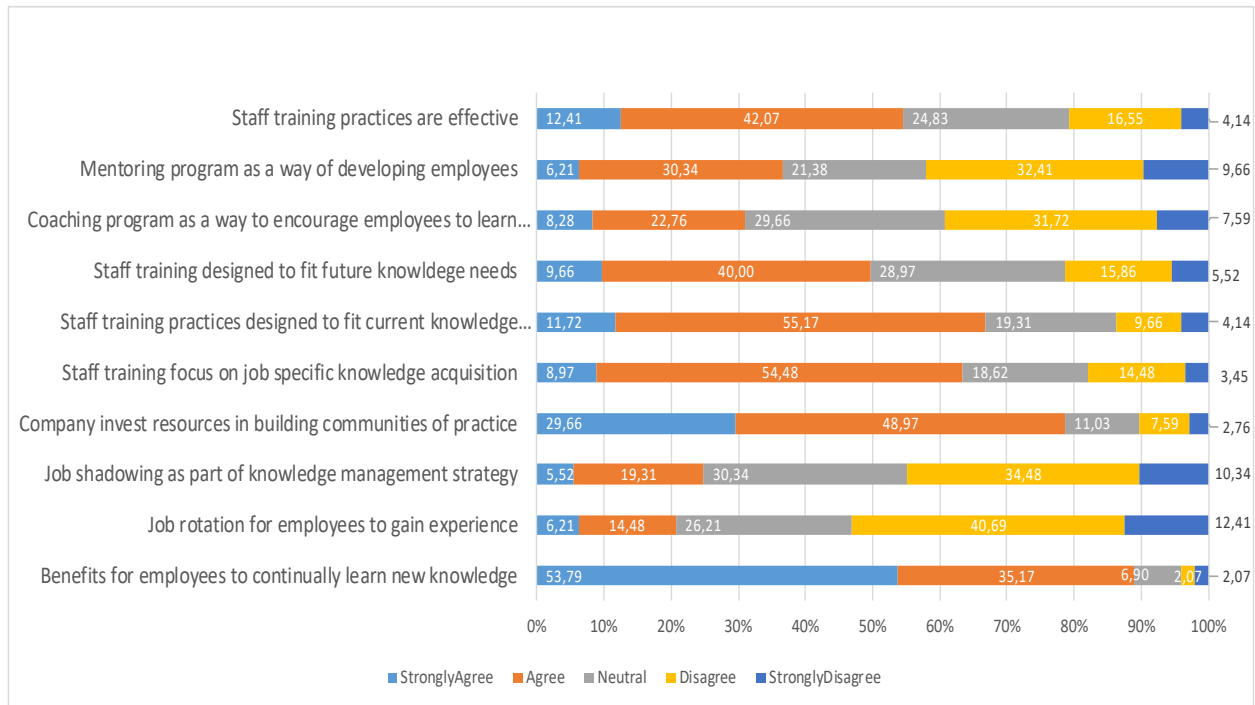
practices were designed to fit the current knowledge needs of the company, while 14% were in disagreement and 19% were less informed about the practice.

When it came to the question of whether training practice was designed to fit future knowledge needs of the companies, the majority (50%) of the respondents affirmed that it is the case and a small but noticeable share (21%) responded to the contrary. It is very interesting that a small but noticeable share (29%) were less informed about whether staff training was designed to fit future knowledge needs.

When it came to the use a coaching programme as a way of encouraging employees to learn from one another, the majority (39%) of respondents indicated that it applied to their organisations, whereas a smaller share (31%) of respondents said that it did not apply. A noticeable share (30%) of the respondents were less informed about the existence of a coaching programme. Similarly, when it came to the use of a mentoring programme as way of developing employees, the majority (42%) of the respondents argued that it did not apply, while 37% indicated that it did apply in their organisations. A smaller share (21%) of respondents were not sure whether mentoring did or did not apply, indicating that they were less informed about the programme.

In terms of the effectiveness of staff training practices in developing current and future knowledge and skills, the majority (54%) indicated that the practice in their organisation was effective, while 21% disagreed. A small but noticeable share (25%) of respondents were less informed about the effectiveness of staff training practices in developing current and future knowledge and skills.





**Figure 23: Staff training practice support to knowledge management activities**

The next subsection explores staff retention practices supporting KM activities and behaviour.

#### 4.5.2.5 Human resource retention practices supporting knowledge management activities

Rewarding employees for their contributions to knowledge management activities remains an area of concern in the SOEs (see Figure 24). The majority (52%) of respondents indicated that rewards for knowledge management contributions did not apply, while a noticeable share (32%) of respondents indicated that it did apply, whereas only (16%) of the respondents were less informed about the rewards for KM contributions. When it came to rewarding teams for sharing knowledge, the majority (57%) of the respondents indicated that this did not apply, 20% indicated that teams are indeed rewarded for sharing knowledge in their organisations. A small but noticeable share (23%) were less informed whether teams are rewarded for sharing knowledge. Similarly when it concerns teams who came up with best ideas, the majority (47%) responded that this did not apply, while 28% responded that it did apply. A small but noticeable share of respondents (25%) were less informed about rewarding teams for best ideas. The majority (52%) of the respondents indicated that rewards were applied to individual performance

rather than team performance, whilst 24% responded to the contrary. A small but noticeable share (24%) of the respondents were less informed about the variable.

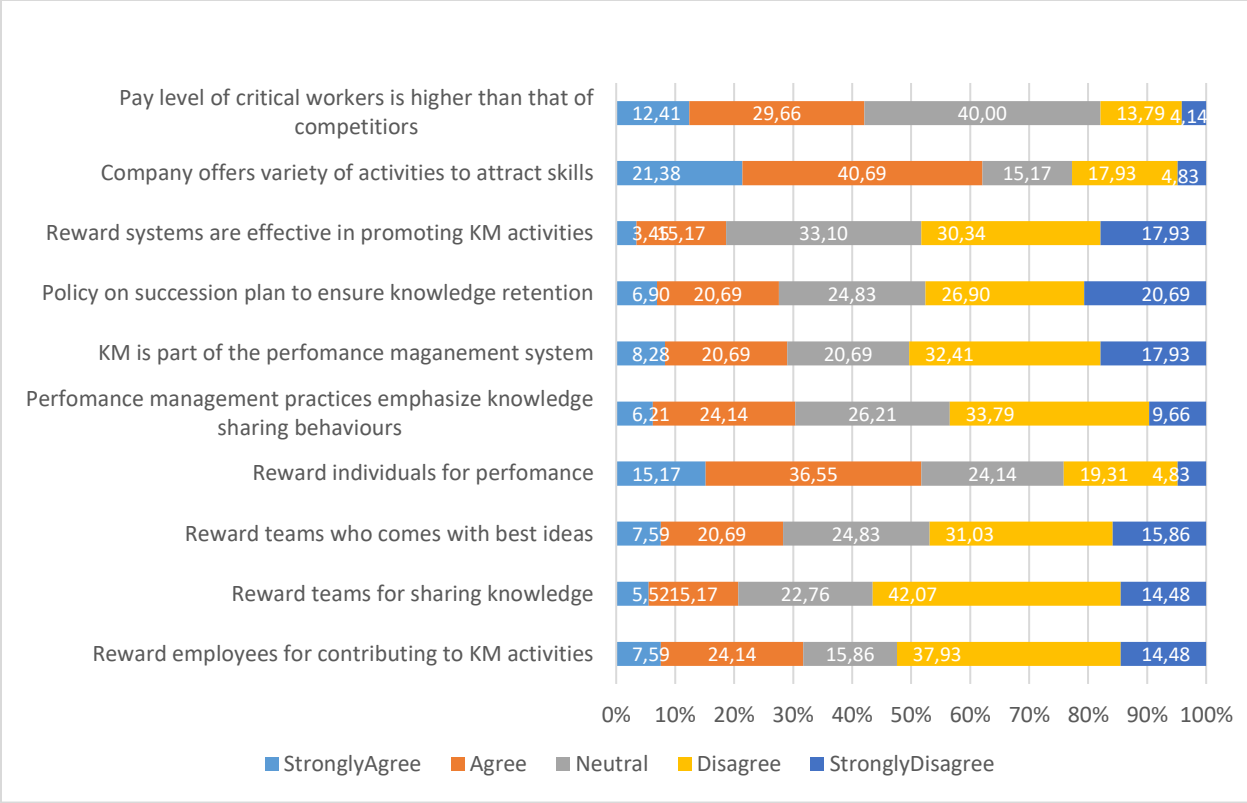
Concerning the company's performance management practices emphasising knowledge sharing behaviour, a majority share (44%) of the respondents indicated that this did not apply in their companies, whereas a minority (30%) of respondents indicated that it did apply in their companies. A small but noticeable share (26%) was less informed on whether performance management emphasised knowledge sharing behaviours.

Regarding knowledge management as part of the performance management system (PMS), the majority (50%) of respondents argued that this did not apply while 29% indicated that it did apply, whereas a small, but noticeable share (21%) were less informed about KM as part of PMS. Regarding the existence of a policy on succession planning to ensure knowledge retention, 48% of the respondents indicated that this did not apply, while 27% of respondents indicated that there was a policy on succession planning. A smaller share (25%) of respondents were less informed about the existence of policy on succession planning to ensure knowledge retention.

Regarding the effectiveness of reward systems in promoting KM activities, the majority (48%) of the respondents indicated that they were not effective, while only a small share (19%) indicated that they were effective. A noticeable share (33%) of respondents did not know if the reward systems were effective in promoting KM activities.

On the question of whether the companies offer a variety of incentives such as short-term bonus schemes to attract skills, the majority (62%) of respondents indicated that such incentives apply, whilst a small but noticeable share (23%) indicated the opposite. A small share (15%) were neutral, indicating that they were not informed if there were such incentives to attract skills.

Regarding the average pay level of mission-critical workers, the majority of respondents (42%) were of the view that the pay level is higher than those of their competitors, whilst 18% indicated that the average pay level of mission-critical workers is not higher than that of their competitors. It was very interesting to note that a 40% of the respondents did not know if their companies were paying higher salaries than their competitors.



**Figure 24: staff retention practice support to knowledge management**

The next subsection explores the overall effectiveness of HR practices in supporting knowledge management activities and behaviours.

**4.5.2.6 Overall effectiveness of human resource practices in supporting KM activities**

The overall effectiveness of HRM practices in supporting and shaping KM activities and behaviour is discussed in this subsection. See also Figure 25.

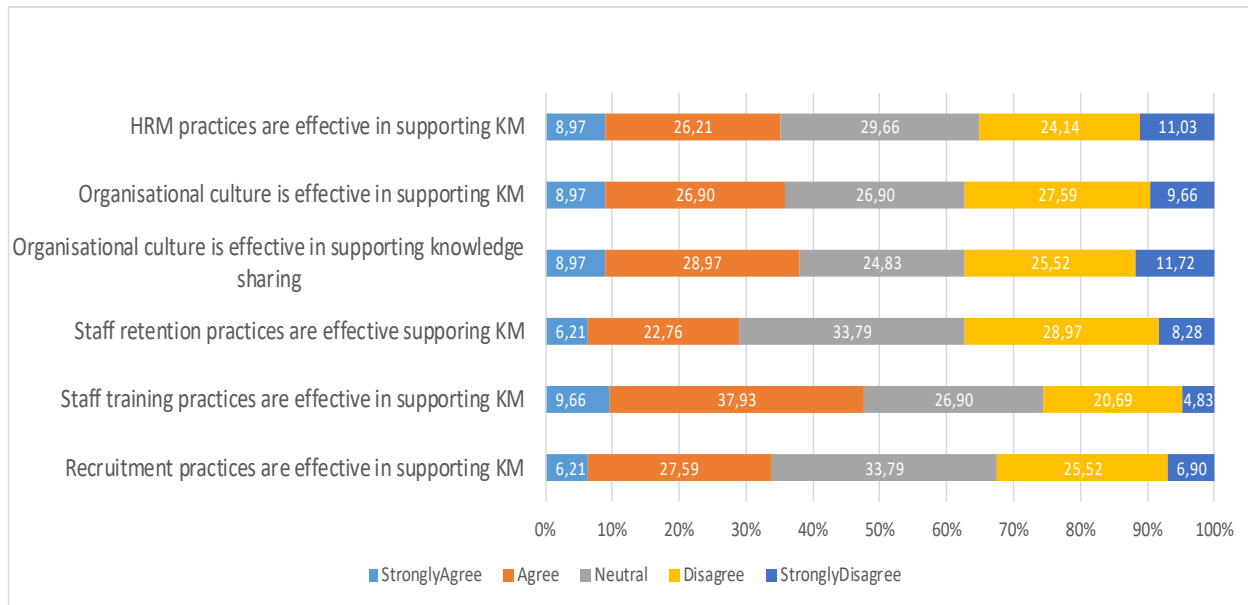
Responses varied as far as recruitment practices were concerned. Of the respondents, 34% indicated that overall, the practices were effective, while 32% marked that it was not effective, whereas a very noticeable share (34%) did not know whether it was effective.

The majority (48%) of respondents were in agreement that staff training practices were effective in supporting KM, while 25% of the respondents indicated that it was not effective. A small, but noticeable share (27%) of the respondents was less informed on the effectiveness of the

recruitment practice in supporting KM. Regarding the overall effectiveness of staff retention practices, 37% of the respondents indicated that it was not effective, while the minority (29%) asserted that the practices were effective in supporting and facilitating KM activities and behaviour. It was a worrying observation that 34% were less informed about the effectiveness of the practices, which were even more than those (29%) who argued that it was effective in supporting KM.

Different responses were received concerning the statement *HR department drives organisational culture that is effective in supporting knowledge sharing*. Of the respondents, 38% indicated that the organisational culture was effective, 37% marked that it was not effective, while a small, but noticeable share (25%) did not know. Concerning the statement *HR department drives organisational structure that is effective in supporting knowledge management*, a majority share (37%) indicated that it was not effective, while a minority share (36%) of respondents indicated that it was effective. A small, but noticeable share (27%) were less informed about the effectiveness of the organisational structure driven by HR departments in supporting and shaping knowledge management activities and behaviours.

Responses did not vary much concerning the overall effectiveness of HRM practices in supporting KM. Of the respondents, 35% indicated that HRM practices were not effective, and equally so, 35% marked that these practices were effective. The remaining 30% were neutral, indicating that they were less informed of the overall effectiveness of HRM practices in supporting and shaping knowledge management initiatives and behaviour.



**Figure 25: Overall effectiveness of HRM practices in supporting knowledge management**

The next subsection focuses on organisational culture and design that support knowledge management activities and behaviour.

#### 4.5.2.7 Organisational culture and design that support knowledge management

The majority (39%) of respondents indicated that organisational culture support KM behaviour, while the minority (32%) of respondents indicated that it was not the case. A small but noticeable share (29%) of respondents were less informed about the variable. See also Figure 26.

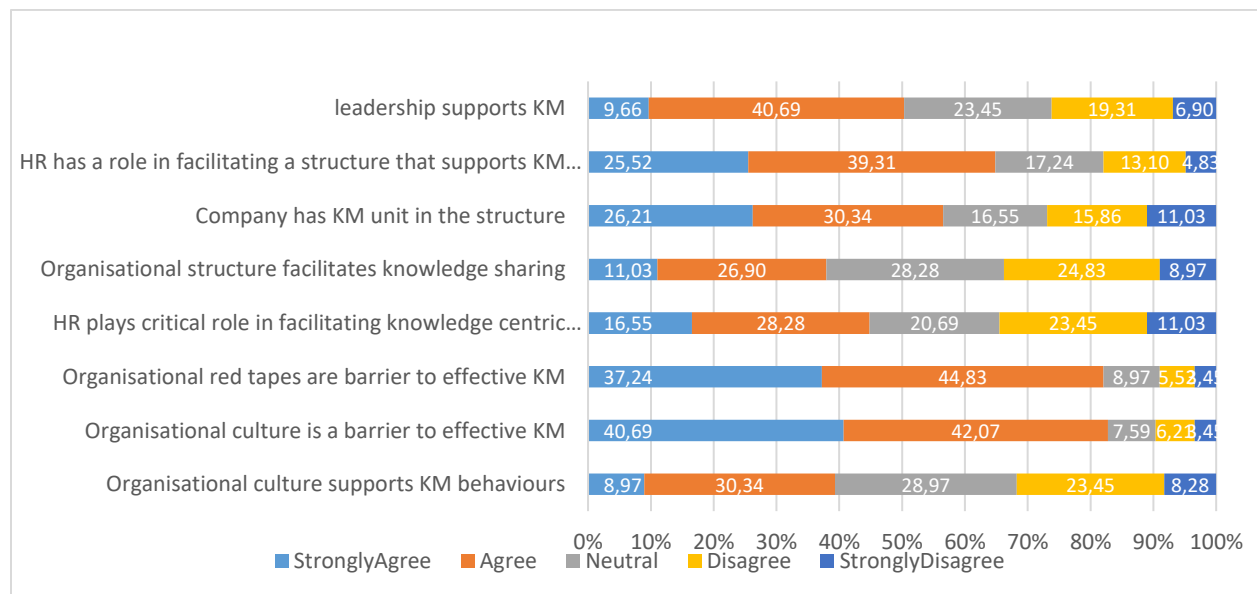
According to the researcher, organisational culture has proven to be a serious challenge or barrier to effective knowledge management because a significant share (83%) of the respondents affirmed this in their responses, whilst only 10% responded to the contrary, and 7% did not know. Similarly, more than 82% of the respondents agreed that organisational red tape is a barrier to effective KM, while only 9% of respondents argued that red tape is not a barrier, while another 9% of the respondents were less informed about organisational red tape.

Concerning the statement *The company's human resource department plays a critical role in facilitating knowledge-centric culture*, 45% of the respondents were of the view that HR played a critical role in that regard, whilst a noticeable minority share (34%) of respondents believed the

opposite. A small, but noticeable share (21%) of respondents did not know whether their HR played a critical role in facilitating a knowledge-centric culture.

Regarding the statement, *Organisational structure facilitates knowledge sharing*, about 38% indicated that this apply in their companies, meaning that organisational structure facilitate knowledge sharing, while 34% responded to the contrary. A small but noticeable share (28%) did not know if the organisational structure facilitates knowledge sharing in their organisations. When it comes to whether the company has a knowledge management unit, the majority (56%) of respondents indicated that this is case in their companies, while a minority (27%) asserted that their companies do not have KM unit. Only 17% of the respondents did not know whether their companies had KM unit.

A significant share (65%) of respondents believed that HR had a role to play in facilitating a structure that supports knowledge management behaviours, while 18% responded to the contrary and 17% did not know. When it comes to leadership support to knowledge management, most (50%) of respondents indicated that there was such a support, while 26% indicated that there was a lack of leadership support, and a small but noticeable share (24%) remained neutral.



**Figure 26: Organisational culture and design support to knowledge management**

The next section examines data redundancy and identifies variables that are important for the development of a framework to reduce knowledge. This is achieved through the application of a statistical analysis technique called exploratory factor analysis.

### **4.5.3 Results of the exploratory factor analysis**

It is important to note that not all of the 56 variables in the survey instrument (as presented in the previous section) were equally significant for the development of the framework for the purposes of this study. Exploratory factor analysis (EFA) is a statistical technique that model the interrelationships among variables (Hair et al. 2014) and it helped the researcher to eliminate redundant variables. In this study, it was applied to determine factors that could be used to develop a framework for reducing knowledge loss in selected state-owned companies.

Factor analysis group variables into factors by identifying variables that have a significant impact (that explains most of the variance) on the response variables, and then eliminate redundant variables. Once the data are collected, it was equally important to eliminate redundant data (variables) that were insignificant for the purpose of the study. The next section describes this process.

#### **4.5.3.1 Structural detection**

The purpose of using factor analysis was to eliminate redundant questions used in the survey instrument and only considered variables that were significant for the study and the development of the framework. When the researcher conducted the survey, he did not know what questions were valuable or significant for the development of the framework. Hence, 56 questions (variables) were included in the survey questionnaire and they formed the basis of the statistical analysis. Structural detection assisted in evaluating data suitability for factor analysis.

Three tests were applied to determine if factor analysis was useful in reducing redundancy between variables. The first test (Bartlett's test of sphericity) determined the existence of a collective correlation, as illustrated in Table 9. The data had 56 variables and were grouped into the following six initial groupings (see also Appendix B:

1. Recognition of knowledge loss
2. Knowledge management practices
3. HR recruitment practices
4. Staff training practices
5. Staff retention practices
6. Organisational culture

The p-value in Table 9 below indicates that the 56 variables are collectively correlated. At a significance level of 5%, the p-value suggests a rejection of the null hypothesis of ‘no common factors’.

**Table 9: Bartlett’s test of sphericity**

Bartlett’s test of sphericity			
Test	DF	Chi-Square	P-Value
<b>H0: No common factors</b>	1540	4165.5140	<.0001

This implies that a benefit was derived by applying factor analysis to summarise the 56 variables into fewer factors.

The second test was a correlation analysis applied to determine pairwise correlation between the variables. The results indicated the existence of significant relationships among the variables.

The third test was Kaiser’s measure of sampling adequacy (MSA). Kaiser (1974) categorises MSA values from unacceptable (below 50%) to marvelous (at least 90%). An overall MSA value of 82.5% was observed and this value falls in the meritorious category, thus indicating a need for structural detection. The partial correlation in this analysis ranged from 52.5% to 90.5%. According to Hair et al. (2014:91), an MSA value of at least 50% is acceptable, given that all 56 variables were considered in this analysis.

The next section explores a number of factors that were useful for the development of the framework of the study.



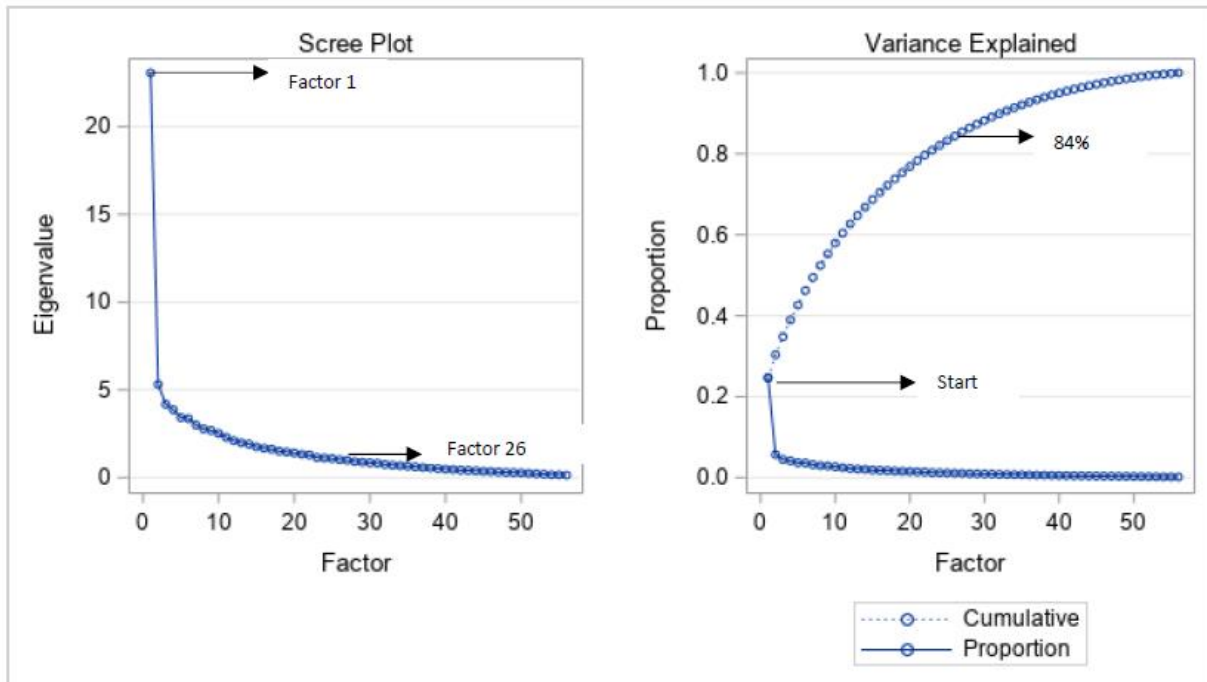
#### 4.5.3.2 Factors useful for the development of the framework

This section determines the number of factors that can be used to design a framework for reducing organisational knowledge loss. The eigenvalue criteria were applied to determine the maximum number of factors that can be used to accurately design a framework for reducing organisational knowledge loss. The eigenvalue criteria considered factors that have an eigenvalue of more than one (eigenvalue presents the amount of variance accounted for by a factor). This criterion is applied in such a way that all factors that have a variance that exceed 1, are considered significant. Table 10 below indicates that there are 26 factors with eigenvalues of more than 1. In a nutshell, these 26 factors with eigenvalues of more than 1 are significant, as illustrated in Table 9 and Figure 27 below.

**Table 10: Eigenvalues**

	<b>Eigenvalue</b>	<b>Difference</b>	<b>Proportion</b>	<b>Cumulative</b>
<b>1</b>	23.0624710	17.7488257	0.2467	0.2467
<b>2</b>	5.3136453	1.1289751	0.0568	0.3035
<b>3</b>	4.1846702	0.3219382	0.0448	0.3483
<b>4</b>	3.8627320	0.4414459	0.0413	0.3896
<b>5</b>	3.4212860	0.0565490	0.0366	0.4262
<b>6</b>	3.3647371	0.3654880	0.0360	0.4622
<b>7</b>	2.9992490	0.2261573	0.0321	0.4942
<b>8</b>	2.7730917	0.0872697	0.0297	0.5239
<b>9</b>	2.6858220	0.1658955	0.0287	0.5526
<b>10</b>	2.5199265	0.2292394	0.0270	0.5796
<b>11</b>	2.2906871	0.1845670	0.0245	0.6041
<b>12</b>	2.1061201	0.1233277	0.0225	0.6266
<b>13</b>	1.9827923	0.0754389	0.0212	0.6478
<b>14</b>	1.9073534	0.1567255	0.0204	0.6682
<b>15</b>	1.7506278	0.0797255	0.0187	0.6869
<b>16</b>	1.6709023	0.0522239	0.0179	0.7048
<b>17</b>	1.6186784	0.1108546	0.0173	0.7221
<b>18</b>	1.5078239	0.0513008	0.0161	0.7383
<b>19</b>	1.4565231	0.0522371	0.0156	0.7538
<b>20</b>	1.4042860	0.0736920	0.0150	0.7689
<b>21</b>	1.3305940	0.0398661	0.0142	0.7831
<b>22</b>	1.2907279	0.1487147	0.0138	0.7969
<b>23</b>	1.1420131	0.0241579	0.0122	0.8091
<b>24</b>	1.1178553	0.0311689	0.0120	0.8211

25	1.0866863	0.0637296	0.0116	0.8327
26	1.0229567	0.0343031	0.0109	0.8436
27	0.9886536	0.0781787	0.0106	0.8542
28	0.9104750	0.0305848	0.0097	0.8639
29	0.8798902	0.0383027	0.0094	0.8734
30	0.8415874	0.0240626	0.0090	0.8824
31	0.8175248	0.0693815	0.0087	0.8911
32	0.7481433	0.0427112	0.0080	0.8991
33	0.7054322	0.0261233	0.0075	0.9067
34	0.6793089	0.0277614	0.0073	0.9139
35	0.6515475	0.0367111	0.0070	0.9209
36	0.6148363	0.0409891	0.0066	0.9275
37	0.5738473	0.0174857	0.0061	0.9336
38	0.5563615	0.0426956	0.0060	0.9395
39	0.5136659	0.0343621	0.0055	0.9450
40	0.4793038	0.0217908	0.0051	0.9502
41	0.4575130	0.0324568	0.0049	0.9551
42	0.4250562	0.0180477	0.0045	0.9596
43	0.4070085	0.0257812	0.0044	0.9640
44	0.3812273	0.0237727	0.0041	0.9680
45	0.3574547	0.0152722	0.0038	0.9719
46	0.3421825	0.0213602	0.0037	0.9755
47	0.3208223	0.0246275	0.0034	0.9790
48	0.2961948	0.0122689	0.0032	0.9821
49	0.2839259	0.0129842	0.0030	0.9852
50	0.2709417	0.0269977	0.0029	0.9881
51	0.2439440	0.0251922	0.0026	0.9907
52	0.2187518	0.0244408	0.0023	0.9930
53	0.1943110	0.0314333	0.0021	0.9951
54	0.1628776	0.0058748	0.0017	0.9968
55	0.1570028	0.0174706	0.0017	0.9985
56	0.1395322		0.0015	1.0000



**Figure 27: Scree plot and variance explained**

The scree plot and variance explained plot indicate that the 26 factors account for 84% of the variance in the framework for reducing organisational knowledge loss.

The next subsection describes the grouping of common variables.

#### **4.5.3.3 Grouping of common variables**

A correlation between the variables and the corresponding factors serves as a guide in determining the significant variables in each factor. Higher correlation coefficients are required for smaller sample sizes and vice versa. In this study, variables were considered significant if their correlation coefficients were more or equal to 50%. A correlation of 50% was considered practically significant for a sample size of between 120 and 150 (Hair et al., 2014).

In addition to the correlation between factors and variables, the contribution of a variable to the factor was also considered. Variables that accounted for less than 50% of the total variance in a factor, as well as factors that had only one significant variable, were eliminated. The final factors

and variables for the framework of reducing organisational knowledge loss are presented in Table 11.

**Table 11: Correlation coefficient of factors and variables**

Variables	Factor 1	Factor 2	Factor 3	Factor 4	Factor 6	Factor 8	Factor 12
	%						
Loss of expertise causes							77
Lack of retention strategy							89
Focus on potential to learn and grow			87				
Emphasis on overall fit			73				
Job rotation					76		
Job shadowing					73		
Staff coaching	73						
Staff mentoring	74						
Rewards for contributing to KM				78			
Rewards for sharing knowledge				84			
HR drive organisational culture		74					
HR drive organisational structure		76					
HRM practices are effective		77					
Organisational culture is a barrier						85	
Organisational culture has red tape						84	

The seven factors in Table 11 were used in the chi square and logistic analysis and are labeled in Table 12 below. The variables listed in Table 11 were considered significant to the development of a knowledge reduction framework because they have higher factor loadings (correlations), as represented by the percentages in Table 11. Factor 12 relates to **the recognition of knowledge loss**. Factor 12 has high factor loadings of 77% and 89% on loss of expertise and lack of retention strategy respectively. Factor 12 was used to derive responses for a dependent variable. The variable with a larger correlation factor was the surrogate variable.

The other factors were independent variables in the chi square and logistic regression. As with the dependent variable, the surrogate variable was the one with the larger correlation factor.

**Table 12: Factors and corresponding labels**

Factor	Label
12	Knowledge loss recognition
1	Knowledge management practices
2	Organisational culture
3	Recruitment processes
4	Staff retention
6	Staff training
8	Organisational barriers

For the development of a knowledge reduction framework, knowledge management practices and HR practices were spread across these seven factors.

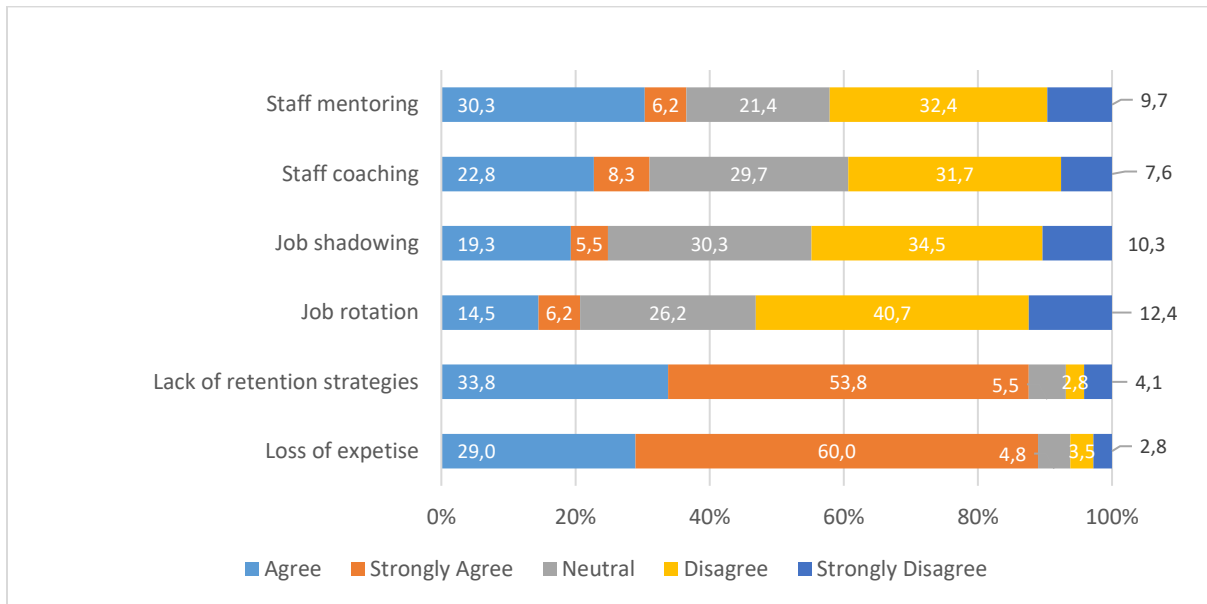
The next subsection explores how KM practices address knowledge loss in the state-owned companies.

#### **4.5.3.4 Knowledge loss and knowledge management practices**

Knowledge management practices start with recognising knowledge loss as a problem. Figure 28 presents respondents' level of agreement regarding the different knowledge management practices. Of the respondents, 89% believed that knowledge loss is caused by a lack of retention strategies while 88% believed it is due to a loss of expertise. In contrast, a small, but unnoticeable share (ranging from 6% to 7% respectively) believed that knowledge loss is not caused by a lack of retention strategies and a loss of expertise, whereas 4% to 5% did not have information on the two variables (lack of retention strategies and loss of expertise).

Job shadowing and job rotation remain problem areas as far as knowledge management practices in the SOEs are concerned, because 45% to 53% of the respondents believed that their companies do not apply job shadowing and job rotation as knowledge-driven practices. In contrast, 21% to 25% of the respondents believed that job shadowing and job rotation apply in their organisations as knowledge-driven practices. A noticeable share of respondents (ranging from 26% to 30%) did not know or did not have information regarding the issue, indicating that

the respondents were less informed about the existence of job shadowing and job rotation as KM practices.



**Figure 28: Summary of the responses to knowledge management practices**

The next subsection explores variables to establish if they are knowledge-driven practices.

#### 4.5.3.5 Knowledge-driven human resource practices

Figure 29 presents the respondents' level of agreement regarding the different the human resource practices in their organisations. More than 80% of the respondents believed that barriers in their organisation have a negative impact on knowledge management. In addition, more than 80% of the respondents believed that there is a culture of red tape in their organisation, and that creates barriers to effective knowledge management. With regard to whether human resource management practices are, on average, effective in supporting knowledge management, the responses varied somewhat. Of the respondents, 35.18% were of the view that their HR practices are effective in supporting knowledge management, while 35.17% of the respondents indicated that HR practices are not effective in their SOEs. The latter indicated that the companies do not apply knowledge-driven HR practices. It is equally important to acknowledge that a noticeable

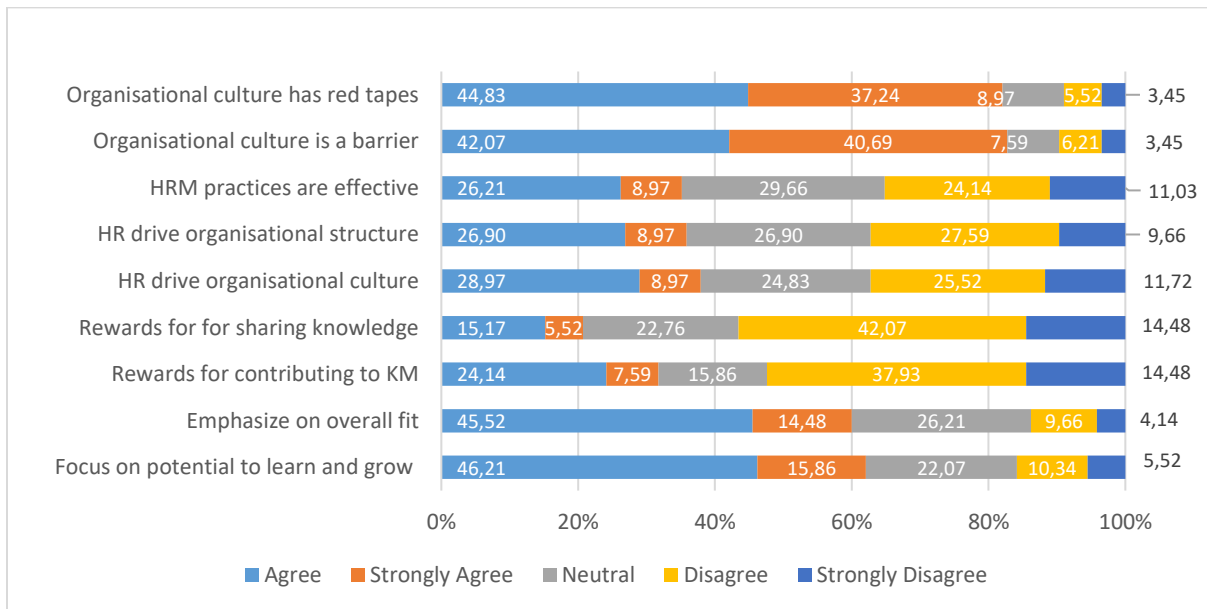
share (29.66%) of the respondents did not have information regarding the effectiveness of HR practices in supporting knowledge management.

Organisational structure seems to be an impediment in supporting knowledge management behaviour because the respondents had mix feelings about this variable. Of the respondents, 37.25% believed that HR does not drive an organisational structure that is supportive of knowledge management processes and behaviour. In contrast, a very noticeable number of respondents (35.87%) believed that this does apply in their organisations, indicating that HR drives an organisational structure in support of KM activities and behaviour. A noticeable number (26.90%) of the respondents did not have information on whether HR drives an organisational structure. Similarly, when it comes to HR driving knowledge-driven organisational culture, a mix bag of views was observed in the data. Of the respondents, 37.94% were of the view that HR drives a knowledge-centric organisational culture, whilst almost the same percentage (37.24%) believed that HR does not drive an organisational culture that is in support of knowledge management behaviour. Again, there was a noticeable number of respondents (24.83%) who did not have information on the variable, indicating that they do not know whether HR drives an organisational culture in supporting KM processes and strategies.

Rewards system was another area of concern in the statistical analysis. More than half of the respondents (52.41%) indicated that their organisations do not reward contributions to knowledge management, while 56.55% said that their organisations do not reward knowledge sharing behaviour. In contrast, a noticeable number of respondents (20.69% and 31.73% respectively) were of the view that rewards apply to contribution for knowledge management and knowledge sharing. A small number of respondents (15.86% and 22.76% respectively) did not provide information regarding the two variables. This indicates that the respondents were less informed about the impact of rewards on knowledge management and knowledge sharing behaviour in their companies.

Recruitment practice was another important variable in the factor analysis of the study. More than half of the respondents (60%) indicated that the HR selection process of employees emphasised their overall fit in their companies, while 62.07% indicated that the HR selection

processes focus on their potential to learn and grow in the companies. However, a small but noticeable percentage (15.86%) of the respondents believed the contrary, indicating that the recruitment and selection practices do not focus on potential to learn and grow in the state-owned companies, and that recruitment does not apply to knowledge management. Moreover, it is interesting to note that a noticeable number of respondents (22,07% and 26,21%, respectively) were less informed on whether the recruitment focus on the potential to learn and grow, and their overall fit for the company in terms of personality, attributes, norms and values.



**Figure 29: Summary of the responses to human resource practices**

#### 4.5.3.6 Summary of the findings of the exploratory factor analysis

Factor analysis was applied to determine factors that have a significant contribution to the development of a framework for reducing knowledge loss. The findings of the exploratory factor analysis suggest that a framework for reduction of knowledge loss can be designed by integrating HRM practice and focusing on seven factors, which are knowledge loss recognition, knowledge management practices, staff training, organisational culture, recruitment processes, staff retention and organisational barriers. These factors comprised the knowledge management and human resource practices, which is why public entities are advised to invest in these factors to efficiently minimise organisational knowledge loss.



After the redundant variables had been eliminated, a chi-square test was applied to determine if there is a significant relationship between knowledge loss and the six factors identified in this section.

The next section discusses the third statistical analysis process, called the Chi-square test for independence and logistic regression.

#### **4.5.4 Chi-square and logistic regression**

Exploratory factor analysis was applied to determine significant factors described in the previous section. After having eliminated redundant data or variables through the EFA statistical analysis process, this section explores if there is a significant relationship between the dependent variable and the independent variables (relationship between knowledge loss and the six identified factors). The chi-square helped the researcher to answer the question *Can an organisation reduce its knowledge loss by investing in these factors?*

The next subsection explains the process of deriving variables and responses for the study.

##### **4.5.4.1 Deriving variables and responses**

The identified significant factors are used as dependent and independent variables for further analysis in this section. Since each factor has more than one variable with a larger correlation coefficient (a statistic used to indicate the strength of the association or relationships between two variables) it is selected as a surrogate variable and will represent the factor as illustrated in Table 13. In other words, the surrogate variable represents the highest factor loading (Hair et al. 2014:91) in the data reduction stage. This statistic (correlation coefficient) ranges from -1 to positive +1, and if it is close to -1 it implies a stronger relation to the factor and if it is close to zero, it implies a weaker relationship.

**Table 13: Surrogate variables and correlation coefficient**

<b>Factor label</b>	<b>Surrogate variable</b>	<b>Correlation coefficient</b>
Knowledge loss recognition	Lack of retention strategy	0.89
Knowledge management	Staff mentoring	0.74
Organisational culture	HRM practices are effective	0.77
Recruitment processes	Focus on potential to learn and grow	0.87
Staff retention practices	Rewards for knowledge	0.84
Staff training	Job rotation	0.76
Organisational barriers	Organisational culture is a barrier	0.85

Assuming that an organisation recognises the lack of a retention strategy as a key organisational strategic issue in reducing knowledge loss, the knowledge loss recognition factor will then be the dependent variable, with the following options:

- Key issue
- Not an issue
- Do not know

The options depended on the response to the statement *Lack of retention strategy causes knowledge loss in my organisation*. If the response to the statement was either ‘strongly agree’ or ‘agree’ the option was ‘key issue’, indicating that the respondent viewed knowledge loss as an issue in their company. If the response to the question was either ‘strongly disagree’ or ‘disagree’ the option was ‘not an issue’, indicating that the respondent did not view knowledge loss as an issue in their company. If the response to the question was ‘neutral’ the option was ‘do not know’, indicating that the respondent was less informed about the impact of knowledge loss in their company. The options for the six independent variables were as per the responses provided. The responses ‘strongly agree’ and ‘agree’ were grouped to ‘agree, indicating that the respondent agreed to applicability of the factor in their organisation. The responses ‘strongly disagree’ and

'disagree' were grouped to 'disagree', indicating that the respondent did not agree to applicability of the factor in their organisation.

1. Knowledge management practices had the following options:

- Agree
- Disagree
- Neutral

2. Organisational culture had the following options:

- Agree
- Disagree
- Neutral

3. Recruitment processes had the following options:

- Agree
- Disagree
- Neutral

4. Staff retention has the following options:

- Agree
- Disagree
- Neutral

5. Staff training had the following options:

- Agree
- Disagree
- Neutral

6. Organisational barriers had the following options:

- Agree
- Disagree
- Neutral

#### 4.5.4.2 Chi-square test for independence

This test was used to determine whether or not a statistically significant relationship exists between the independent variables. Existence of a significant relationship implies that the variables can be integrated into a framework. These variables represent knowledge management and human resource management practices.

The null hypotheses ( $H_0$ ) and the alternative hypotheses ( $H_1$ ) are defined as follows:

$H_0$ : No statistically significant relationship exists between variable X and variable Z.

$H_1$ : A statistically significant relationship exists between variable X and variable Z.

Variable X and variable Z represent the different pairs of the independent variables as illustrated in Table 14 below.

The probability (p-value) that the null hypothesis is true and that two pairs of independent variables are statistically independent is calculated. A large p-value (larger than the significance level) suggests that the probability that the two variables are not related is high; hence the  $H_0$  will not be rejected. For this analysis a 5% level of significance was used.

**Table 14: Test for independence**

Paired variables		p-value
Recruitment processes	Staff Training	0.0408
	Knowledge management	0.0235
	Organisational culture	0.0003
	Staff retention	0.0426
	Organisational barriers	0.0003
Staff training	Knowledge management	<.0001
	Organisational culture	<.0001
	Staff retention	0.0002
	Organisational barriers	<.0001
Knowledge management	Organisational culture	<.0001

practices	Staff retention	0.0001
	Organisational barriers	<.0001
Staff retention	Organisational culture	<.0001
	Organisational barriers	<.0001
Organisational culture	Organisational barriers	<.0001

Table 14 presents the p-values for testing the lack of relationship among the independent variables. All the p-values are smaller than a significance level of 5%, suggesting there is a significant relationship among the independent variables.

This association indicates that the integration of human resource management practices and knowledge management practices can be effectively realised through these variables. However, this information does not provide guidance on how the framework can be constructed. For this reason, logistic regression was applied to gain more insight about the variables. This is discussed in the section below.

#### 4.5.4.3 Logistic regression

Logistic regression is designed to predict the probability of an event occurring. In this study, it was applied to model the response variable (knowledge loss) and the independent variables (recruitment processes, staff training, knowledge management practices, organisational culture, staff retention, organisational barriers). Odds ratios were applied to quantify the recognition of knowledge loss. An odds ratio is a statistic that quantifies the effect of exposure.

- **Bivariate test for significant variables**

The bivariate test determines if an independent variable has a one-to-one significant contribution to the dependent variable (the one-to-one relationship does not consider the effect of the other variables). Again, the probability that an independent variable has no significant contribution to the recognition of knowledge loss is computed. The following hypotheses are tested, as illustrated in Table 15,

H<sub>0</sub>: Variable X does not have a significant contribution to the dependent variable.

H<sub>1</sub>: Variable X has a significant contribution to the dependent variable.

A large p-value implies that H<sub>0</sub> cannot be rejected

**Table 15: Bivariate test**

Variable	P-value
Recruitment processes	0.9898
Staff Training	0.0871
Knowledge management practices	0.6625
Staff retaining practices	0.0425
Organisational culture	0.1086
Organisational barriers	0.1086

The p-values indicates that a framework that looks into the variables in isolation cannot be effective in reducing knowledge loss, with the exception of staff retaining practices. The p-value for staff retaining practices has less than a 5% level significance, implying that staff retaining practices are effective without the other variables, which in turn will preserve knowledge loss. Because the variables cannot be studied in isolation, the predictive probabilities cannot be computed for this analysis. The analysis was limited to odds ratios.

**Table 16: Odds ratio**

Variable	Reference <sup>1</sup>	Odd ratio
Recruitment processes	Disagree vs Agree	2.189
Staff training	Disagree vs Agree	0.300
Knowledge management practices	Disagree vs Agree	2.968
Staff retention practices	Disagree vs Agree	0.304
Organisational culture	Disagree vs Agree	0.298
Organisational barriers	Disagree vs Agree	0.298

<sup>1</sup> The odds ratio refer to 'agree' compared to 'disagree'

Table 16 indicates that companies that have recruitment processes that supports knowledge management activities recognise knowledge loss twice as much compared to companies with other recruitment processes that do not support knowledge management. In addition, the

recognition of knowledge loss is almost three times for companies that have knowledge management practices. These are control factors since they allow for the recognition of knowledge loss. On the other hand, the recognition of knowledge loss is less observed with training of employees, staff retention practices, effective organisational culture and organisational barriers. These are intervention factors since when applied on their own, knowledge loss is less recognised.

The next sub-section provides a summary of the chi-square and logistic regression analysis and findings.

#### **4.5.4.4 Summary of chi-square and logistic regression analysis**

In a nutshell, the framework for reducing knowledge loss should have two stages of control factors. The first stage should be during the recruitment phase. In this phase, recruitment processes will be applied as a preventative measure. Emphasis should be on overall fit, personality, values and norms, to help recognise factors that can lead to knowledge loss. In the second stage, the control factor should focus more on knowledge management practices that are more focused on staff support such as staff coaching, staff mentoring, etc. In this phase, knowledge management practices are implemented as a preservative measure. The emphasis should be on developing staff in a manner that allows them to apply their knowledge.

It should be noted that even if the control factors are applied effectively, there will be unforeseen circumstances that will lead to knowledge loss. It is therefore also crucial for the state-owned companies to have intervention factors in their knowledge loss framework.

The proposed framework is discussed and presented in detail in the last chapter of the study. The next section summarises the key findings of both the qualitative and quantitative datasets as they were presented in this chapter.

#### **4.5.5 Summary of the chapter**

This chapter concludes that as far as knowledge loss is concerned, voluntary turnover and lack of retention strategy ranked very high as the main causes of knowledge loss in the state-owned

companies that participated in the study. The results of both the qualitative and quantitative datasets, indicated that human resources (employees) are recognised as fundamental resources for the attainment of a competitive advantage in the SOEs. Similarly, the qualitative and quantitative data confirmed that knowledge is recognised as a source of competitive advantage by more than 70% of the respondents. However, the management of organisational knowledge loss remains a serious challenge as the qualitative data indicated that human resource managers have not taken ownership and management of knowledge loss in their respective SOEs. SOEs are failing in a number of knowledge management practices. This is further complicated by a lack of KM systems, processes and strategies or practices in a number of the SOEs. KM functions are not well conceptualised in the structures of many participating SOEs. Both the qualitative and the quantitative data inculcated the need for HRM practices to acknowledge and play their role in building knowledge management capabilities in the SOEs, thus assisting in the recognition of knowledge loss as well as the reduction of knowledge loss.

Training and development opportunities are offered to staff to acquire and develop the necessary expertise, knowledge and skill sets. However, the sharing and retention of such knowledge and skills remain problem areas. Most participants in the qualitative phase and respondents in the survey phase indicated that the rewards for knowledge management contributions did not apply in their state-owned companies. Rewarding knowledge management behaviour and contributions remain an area of concern. Concerning the formation of a knowledge loss reduction framework that integrates both HRM and KM practices, the research findings showed that such a framework should start with the realisation or recognition of knowledge loss as a key strategic issue, followed by having control factors in the recruitment processes and KM practices. After the realisation and control of the causes of knowledge loss, intervention factors (staff retention practices, staff training, organisational culture and elimination of organisational barriers) should be applied to reduce the knowledge loss phenomenon.

The next chapter presents the interpretation and discussion of the research findings.



## **CHAPTER FIVE**

### **INTERPRETATION AND DISCUSSION OF THE RESEARCH FINDINGS**

#### **5.1 Introduction**

This chapter describes a process of making sense of the data that were analysed and presented in the previous chapter. After the presentation of the findings, the next logical phase is to interpret the meaning of the results. According to Creswell and Plano Clark (2018:216), during the interpretation of results, the researcher should step back from the detailed results and advance their larger meaning in view of the research problems, research questions or hypotheses in the study, related literature and researcher-related experiences. In this chapter, the current researcher reviews the findings that were presented in the previous chapter and indicates how the research findings answered the research questions. This includes the researcher's personal reflections on the data but also compares his views with findings in existing relevant literature (Creswell & Creswell 2018). In other words, making sense of the results goes beyond only the researcher's personal interactions with the data and the answering of the research questions. In a sequential, exploratory mixed methods research design, the interpretation of research findings involves an integrative thinking process whereby the researcher integrates and interprets both qualitative and quantitative datasets into coherent findings (Creswell & Plano Clark 2018). In a nutshell, it is the main aim of this chapter to summarise qualitative and quantitative findings of the study. Therefore, since the study was a MMR study, the discussion and interpretation are largely based on the integration of the qualitative and quantitative results.

#### **5.2 Causes of organisational tacit knowledge loss**

The situation regarding organisational knowledge loss in state-owned companies is complicated in that various factors contribute to such knowledge loss. Voluntary turnover in the form of resignations and involuntary turnover in the form of an ageing workforce, retirements and a lack of retention strategies were the main contributors of knowledge loss in the SOEs that participated in the study. This research finding confirmed previous studies by Massingham (2018), Sumbal et al. (2017) and Eckart et al. (2014) on the causes of organisational knowledge loss. The

qualitative research findings revealed that voluntary turnover was a serious problem in 78% of the state-owned companies. The situation was further complicated by the ageing workforce and the lack of a knowledge retention strategy. This was evident in the quantitative dataset as more than 80% of the respondents concurred that the lack of a retention strategy and the loss of expertise caused organisational knowledge loss. The loss of expertise and a lack of retention strategy to retain that expertise, threatens the competitive advantage and sustainability of the state-owned companies. The loss of critical knowledge may cause companies to experience serious productivity and capacity risks (Durst & Zieba 2019; Durst 2018; Zieba & Durst 2018). In South Africa, legislation on employment equity presents a unique case because, according to HR managers, it seems to encourage employees in some companies to look outside organisational boundaries, thus also contributing to voluntary turnover in some cases.

The loss of human resources means a loss of knowledge to the companies. According to key RBV and KBV theorists such as Gope et al. (2018), Gürlek and Tuna (2018), Barney (2001) and Grant (1997, 1996), human resources, as sources of knowledge assets, are of critical importance for organisations operating in the knowledge-based economy. The research findings showed that SOEs are therefore not exception to the loss of knowledge and employees through voluntary and involuntary turnover. Therefore, the phenomenon of organisational knowledge loss puts their sustainable competitive advantage at risk. The RBV and the KBV emphasise the fact that knowledge resources are imperfectly imitable, valuable, non-substitutable and rare resources of the company (Gürlek & Çemberci 2020; Gürlek & Tuna 2018; Grant 1997), and therefore, the loss of such assets will lead to a loss of sustainable competitive advantage. Voluntary turnover (Rashid et al. 2019) and loss of expertise contribute to knowledge risks (Durst et al. 2018). According to Durst and Zieba (2020:2), any loss resulting from a lack of knowledge protection will decrease or threaten the operational or strategic benefit of an organisation.

### **5.3 Recognition and treatment of organisational knowledge loss**

Most of the state-owned companies are resource-intensive in nature; they tend to rely on both their tangible (staff) and intangible (knowledge resources) resources to drive their economic development agenda. This is in line with the RBT and the KBT in that the RBV sees companies

as a collection of resources (Gürlek 2020a; Storchevoi 2015; Curado & Bontis 2006; Wernerfelt 1984; Penrose 1959) whilst the KBT views knowledge assets as intangible, rare and valuable resources that are used to build a firm, sustainable and competitive advantage (Durst et al. 2020; Barney 2001; Grant 1997). Recognition of organisational knowledge as a key resource that is imperfectly imitable, valuable, non-substitutable and rare (Gürlek & Çemberci 2020; Durst & Zieba 2020; Gürlek & Tuna 2018; Grant 1997), is an important trigger to prevent its potential loss (management of knowledge loss). In as much as SOEs recognise knowledge loss as a strategic issue, they are found wanting in so far as the prevention of its loss is concerned. Furthermore, the recognition of knowledge as source of competitive advantage makes the management of knowledge as a key resource a strategic priority in the few state-owned companies where KM is structurally conceptualised. However, how such knowledge is managed to prevent its loss is something else in many of the state-owned companies. Both qualitative and quantitative data posit the point that employees are seen as fundamental resources and as sources of organisational knowledge. Knowledge in organisations is contingent on employees; should they leave, it leaves with them. This is why theoretical lenses in the RBV and the KBV are critical to understand and explain why knowledge management practices and HRM practices need a point of interface with each other for effective management of organisational knowledge.

Resource-based theorists such as Gürlek (2020a), Gürlek and Çemberci (2020), Pe'er (2016), Hislop (2013) and Wright et al. (2001) emphasise that people are important resources of the company's performance, and so do the South African SOEs. Nevertheless, knowledge loss risks continue to pose challenges in state-owned companies as was evident in the qualitative interview data obtained from HR managers. The qualitative data (based on the responses of almost all human resource managers) as well as the quantitative data (based on the responses of 72% of respondents) confirmed extant literature (see Durst et al. 2020; Gürlek 2020a; Barney 2001 & 1991; Spender & Grant 1996; Grant 1997, 1996) that recognised knowledge as a source of competitive advantage. In addition, the majority (61%) of respondents in the survey component, viewed knowledge loss as a key strategic issue.

SOEs need to move beyond just recognising staff and knowledge as fundamental resources to be at the strategic centre of managing and preventing organisational knowledge loss. Knowledge

loss in South African state-owned companies will make them vulnerable and defeated in the face of competition and their developmental mandate. According to a number of studies (Gürlek 2020a; Durst et al. 2020; Durst & Zieba 2020; Zieba & Durst 2018), loss of knowledge by organisations to their competitors will make those companies to be defeated in the battle of competition and they will lose their sustainable competitive advantage. The findings of the current study showed that the genesis of the way how state-owned companies effectively manage organisational knowledge loss, begins with the realisation or recognition of knowledge loss as a key strategic issue.

The next section examines the research findings pertaining to the existence of knowledge management practices or strategies in the SOEs that participated in this study.

#### **5.4 Knowledge management practices and their effectiveness**

In so far as knowledge management practices are concerned, the interpretation of the qualitative and quantitative research findings revealed that SOEs are lacking in the following key knowledge management areas or practices, namely job rotation, job shadowing, programmes for retiring experts, coaching and mentoring programmes, knowledge harvesting and succession planning. The findings of this study also assert that knowledge management practices can serve as factors to control knowledge loss in the state-owned companies.

The presence of knowledge management practices or processes are said to have a significant impact on the performance of businesses (Kianto et al. 2018; Dzenopoljac, Alasadi, Zaim & Bontis 2018). So, these findings present a worrying development in that state-owned companies are not effective in performing knowledge management practices. A lack of these knowledge management practices will impact negatively on their business performance and affects their sustainable competitive advantage. According to Dzenopoljac et al. (2018:77), knowledge is a fundamental resource that enables companies to create optimum combinations of tangible and intangible resources that will lead to superior performance results. Briefly, the continuous lack of investment in KM practices will put the development agenda of the state-owned companies at risk and will lead to poor performance results.

In the qualitative interview phase, some of the HR managers identified job rotation and job shadowing as strategies to support knowledge management processes such as knowledge creation, use, sharing and retention. However the quantitative findings revealed a contrasting picture in that job rotation as a knowledge management strategy did not exist or apply because the majority of respondents (60%) indicated that their companies did not use it as a strategy for knowledge workers to gain experience by moving them across different functional units or divisions.

In order to create value for an organisation, knowledge must flow throughout and be embedded in the organisational processes (Chuang et al. 2016). According to Chuang et al. (2016:529), job rotation allows knowledge workers across different functional areas or divisions to become embedded in the company. The absence of knowledge management practices such as succession planning and job shadowing are still prevalent in the state-owned companies.

A problem that organisations often face is the lack of succession plans where knowledge transfer of older workers is concerned (Appelbaum et al. 2012). Succession planning links positively with knowledge management and can serve as an effective knowledge transfer strategy to ensure business continuity for companies (Durst & Wilhelm 2012). Knowledge of older experts and other key staff members is a key resource for ensuring a business competitive advantage (Grant 1996; Barney 1991). Their departure could therefore result in a lack of mission-critical know-how that is important for the success of their companies, thus hampering their sustainability. The qualitative data revealed that it takes longer to replace a person or skills in mission-critical competence areas in the state-owned companies. The absence of succession planning strategies create serious challenges for retiring experts to share their knowledge and experience to the younger generations of workers. The transfer of the incumbents' knowledge is problematic if the successors are not identified and mentored into the identified positions in advance.

Coaching and mentoring were problem areas in many of the state-owned companies because they were not regarded as knowledge management strategies. The majority of respondents indicated that coaching as a knowledge sharing strategy and mentoring as a way of managing knowledge loss did not apply in their organisations.

A lack of opportunities for individual employees to learn from their mentors and develop was also a challenge (Belle 2020). The absence of such opportunities also impact negatively on the older generation of experts who may be willing to transfer their knowledge, expertise and skills to the younger generation of knowledge workers. Belle (2020:109) attests that mentoring can serve as a precious professional development resource as it allows individual employees to connect with and learn from their mentors. Mentoring is argued to be a knowledge management strategy. Mentoring can serve as an effective knowledge transfer practice whereby it can be used as a strategy to transfer job-specific expertise from one individual staff member to another or from ageing workers to younger knowledge workers (Trees 2016). The ageing workers, or rather the baby boomers, have a sense of willingness to share what they know with the younger generation of workers (Appelbaum at al. 2012). So, the lack of succession plans, in particular through coaching and mentoring programmes to transfer their expertise and knowledge frustrate their eagerness to share what they know.

With regard to the overall effectiveness of KM practices, 40% of the respondents indicated that a few practices were already in place and were effective to some degree.. However, 30% of the respondents indicated the opposite. To a certain degree, the effectiveness of KM practices remained a challenge because, in addition to the 32% who rated them as ineffective, a small but noticeable share of the respondents (28%) were less informed or did not have information on their effectiveness. This means that the effectiveness of KM practices was unimportant for those SOEs that did not have knowledge management practices in place. This is largely so because only a few had KM practices. This is largely based on a few practices (such as CoPs and expert forums) that might have been prevalent in one case or the other. A good variety of effective knowledge-based management practices will have a significant influence on business performance.

The next section presents the research findings on the role of HRM in building knowledge management capacity.

## **5.5 The role of human resource management in building knowledge management capacity**

The findings of this research add to that of previous studies that found the role of human resource management in knowledge management as inevitable (Gürlek 2020a; Matošková & Směšná 2017; Kianto et al. 2017; Edvardsson 2008; Wright et al. 2001). These authors provide a conceptual and theoretical analysis of the relationship between HRM and knowledge management, including the roles of HRM and KM. However, this study provided empirical evidence about the relationship and role of HRM practices in building and shaping KM processes and behaviour, thus increasing knowledge management capacity. Both the qualitative and quantitative data pointed to the significant, strategic and operational partnership role of human resource management in the management of organisational knowledge and building of knowledge capabilities in the state-owned entities. All of the human resource managers in the qualitative interview emphasised the inevitable role of HRM in supporting knowledge management activities in their organisations.

The quantitative research findings also supported the qualitative findings in that the data expressed a need for HR to take part in knowledge management issues in the SOEs. However, much of the quantitative data obtained in the survey questionnaire lamented the fact that HR managers are neglecting their role and it is therefore not much visible in the management of organisational knowledge. Nevertheless, such a HRM role is constrained by a lack of interaction between HRM and knowledge management. For instance, one respondent of the survey articulated this frustration as follows:

The relationship between HR and KM has become a major burning issue that needed to be tackled. The two are more focused on human development, but yet in most cases there is a lack of synergy, which is quite a concern (Respondent #95, 2020).

Much of the qualitative data also pointed out that the role of HRM in building knowledge management capabilities is on the periphery at many of the SOEs. This is especially the case in state-owned companies that had not institutionalised knowledge management in their structures and processes.

The literature asserts that a lack of KM practices impact negatively on the firm's competitive advantage (Dzenopoljac et al. 2018; Arunprasad 2017). Knowledge management processes are directly influenced by HRM practices and strategies (Zaim et al. 2018; Donate & Guadamillas 2015) such as staff selection and recruitment, reward schemes, job design, training and development, staff retention practices and other HR related strategies. Similarly, knowledge management also impacts positively on HRM performance, according to the latest research (Khawaldeh 2020).

The research findings on this variable assert the strong link between resource-based view and knowledge-based view theories of the firm in that it is evident that the acquisition of firm-specific human resources and knowledge resources has always been the realm of HRM. Thus, the role of HRM in knowledge management cannot be overemphasised. The lack of synergy on human resource and knowledge management issues presented a serious challenge in the SOEs that participated in the study. The continuous loss of the firm-specific human resources and knowledge capital assets will negatively affect the national strategic and development mandate of the state-owned companies and their competitive advantage. Equally, HRM will continue to take the blame for these calamities. The role of HRM is often seen as only the last in the knowledge management process. For instance, the exit interview is only done only when employees leave. A number of studies (Sokolov & Zavyalova 2020; Arunprasad 2017; Figueiredo et al. 2016) suggest that HR should play a role in all related practices involving the acquisition, management and retention of the organisational knowledge assets (knowledge, skills and experience).

In support of the extant body of literature on the subject, the qualitative findings revealed recruitment, training and development, organisation design, talent management, culture management, compensation, retention and performance management as potential HR practices that can enhance knowledge management capabilities in the SOEs that participated in the study. These practices are at the core of human resource management system in organisations (Sokolov & Zavyalova 2020).



The next section examines the specific human resource management practices and their role in facilitating knowledge management activities and behaviours in the SOEs.

## **5.6 Knowledge-driven human resource management practices**

This section provides the interpretation of the research findings, specifically on the recruitment, training and staff retention practices. HRM practices that have positive effects on knowledge management practices are argued to be knowledge-driven in nature and play a critical role in KM (Gürlek 2020a; Jimenez-Jimenez & Sanz-Valle 2013). It is equally important to assert whether these practices HR are knowledge-driven or oriented in the manner that they support and facilitate knowledge management processes and behaviour in the state-owned companies that participated in the study. HRM practices that bear certain knowledge-driven characters or attributes that facilitate and support the knowledge management processes and behaviour, are labelled as knowledge-driven HRM practices (Kianto et al. 2017). According to Mihardjo, Jermittiparsert, Ahmed, Chankoson and Hussain (2020:5), human resource practices have an impact on and mediating role in employee commitment and organisational performance. Therefore, HRM practices that bear and support knowledge-based behaviour can assist state-owned companies to achieve superior performance levels and ensure sustainability.

The next sub-section explores whether recruitment practice in the state-owned companies displays these knowledge-based criteria.

### **5.6.1 Knowledge-driven human resource recruitment practices**

Traditionally, the acquisition of firm-specific knowledge and human resources to ensure the firm's sustainable competitive advantage (Jøranli 2018; Barney 1991) has always been the terrain of HR recruitment practices (Ishak et al. 2010). The qualitative research and quantitative data posited a common knowledge among all human resource managers and a majority of employees (respondents) that recruitment practices support their companies in the identification, selection and recruitment of potential employees who possess the required knowledge, experience and skills. Due to employee mobility, human resource recruitment practices are struggling to fill vacant positions in mission-critical areas of the business. The qualitative

interview results with HR managers demonstrated that it takes between six months to a year to fill a vacancy caused by turnover in a critical position and one year to two years in exceptional or worse case scenarios. The higher the labour mobility, the greater the challenges for the recruitment practices in the state-owned companies. Furthermore, the scarcer the skill is, the more expensive it becomes, because it comes at a premium and companies will pay high prices to obtain it. The situation is even worse in cases where there is no knowledge management strategies geared towards the retention of knowledge and human resources. To deal with these challenges, some studies propose that recruitment practices should be aligned to other HRM and KM functions of the firm by proactively dealing with firm-specific competence demands (Jøranli 2018; Jimenez-Jimenez & Sanz-Valle 2013).

A challenge that human resource management departments in the state-owned companies faced, was the recruitment and retention of employees with mission-critical skills. Whenever a valued employee left the employment of the organisation, either through resignation or retirement, it created challenges for the human resource managers in terms of both direct and indirect costs associated with such mobility developments. What complicated the problem even more, was that HR managers lacked mechanisms to quantify the impact of losing critical skills due to voluntary turnover.

In general, human resource practices supported companies in the identification and recruitment of potential employees with the required technical knowledge, skills and expertise. The execution of the recruitment strategy differed from one state-owned company to another. For instance, the qualitative data showed that in some companies the focus of recruitment was only on the technical competencies, whereas in other companies, the focus was on both technical and knowledge behavioural competencies. The articulation of specific knowledge management behaviour in the recruitment practice was a problem area in many of the state-owned companies. Many HR managers indicated that the focus on the specific knowledge behavioural competencies was a challenge. This finding is supported by the quantitative data because most of the respondents indicated that their recruitment practices did not focus on KM attributes such as coaching, mentoring, innovation, knowledge sharing and teamwork. Therefore, it can be deduced that the recruitment practice in this instance, did not exhibit knowledge-driven attributes. In three

cases (state-owned companies) out of nine, the recruitment of potential employees focused on these specific KM attributes. These three were only part of a few cases whose recruitment practices exhibit knowledge-driven attributes. However, this was not a common recruitment practice or strategy across all nine participating cases in the study. Furthermore, the qualitative evidence pointed out that the few state-owned companies whose recruitment practices emphasised KM attributes, were those whose KM strategies and processes were better formalised. It is apparent that the existence of formalised KM assisted the HR managers in those companies to understand the vocabulary and infusion of such behaviour in the recruitment strategy.

One of the key research findings about recruitment in the state-owned companies in the study, is the selection of employees based on their overall fit for the companies in terms of personality, values, norms, etc. There was consensus between most of the respondents on this variable pertaining to both the qualitative and quantitative research findings. A significant number of respondents in the quantitative study concurred with the HR managers that the selection of employees emphasised their overall fit for companies in terms of personality, values, norms, etc. The qualitative data revealed that SOEs pride themselves as learning and knowledge-based organisations. Similarly, most of the respondents also confirmed that the process of selecting employees, focussed on their potential to learn and grow in the organisation. That showed good intentions to develop employees and exhibit knowledge-driven behaviour in the recruitment practice.

Retaining employees, once they are appointed, remains a challenge (Singh & Gupta 2020; Mariano et al. 2020; Sumbal et al. 2018). Most of the HR managers who participated in the qualitative interview, lamented the fact that their state-owned companies were in a perpetual struggle to retain and replace critical skills. Most of the participants (in the qualitative interview) and respondents (in the quantitative survey) rated the recruitment practices in their SOEs effective in sourcing firm-specific human resources knowledge and skill attributes. Being very effective in recruiting human resources but not so effective in retaining them created a paradox for both the state-owned companies and their human capital and KM strategies. The results of the EFA, chi-square test, and logistic regression, point to recruitment processes along with KM

practices as important control factors in the formulation of a framework for knowledge loss reduction.

The next section provides the interpretation of the research findings regarding training and development practice in the cases of the study.

### **5.6.2 Knowledge-driven training and development practices**

Training and development opportunities offered to the employees, enhance their domain-specific knowledge, expertise and skills and facilitate knowledge acquisition (Papa et al. 2020; Kianto et al. 2017). The results of the exploratory factor analysis in the current study, in support of the qualitative research findings, characterised staff training as an important intervention factor in the development of the framework indicated in the objectives of the study.

Knowledge-driven training and development practices go a long way to enhance and build knowledge-based capabilities of state-owned companies. In so far as this study is concerned, training and development practices are knowledge-driven in nature and supportive of KM behaviour. Almost ninety of the respondents supported the qualitative view expressed by HR managers that SOEs offered many benefits to ensure that human resources continuously learn and acquire new knowledge. The review of the annual reports also revealed large investments in training and development interventions in the state-owned companies. What can be deduced from both the qualitative data (interviews and annual reports) and the quantitative data, is the fact that training and development strategies are knowledge-driven in the state-owned companies. The results of the annual reports, interview transcripts and survey data all indicated that state-owned companies placed a high premium on capacitating their knowledge workers. In other words, knowledge acquisition, application and development are very deliberate actions, and large investments in training and development or capacity development initiatives bear testimony to that. Training and development demonstrate investment in human resources (Matošková & Směšná 2017). It can also be argued that training and development practices in state-owned companies support the absorptive capacity because those practices expose staff to external sources of knowledge through training and conference attendance. Absorptive capacity refers to

the capability of companies to recognise, assimilate and apply external knowledge (Cohen & Levinthal 1990).

The qualitative research findings indicated that WSPs, PDPs, skills audit matrix, and competency-based modelling influenced the design and implementation of training and development strategies or practices. According to Papa et al. (2020:591-592), training makes knowledge acquisition and development possible by ensuring continuous learning in organisations. The qualitative research findings (all human resource managers) and quantitative research findings (65% of the respondents) point to the convergence of the views that training and development in the state-owned companies primarily focus on job-specific knowledge acquisition and application, and to a limited degree on sharing and retention. Such focus is largely technical in nature. As such, technical training serves to cement a tacit organisational knowledge base. An organisational knowledge base comprises ninety-five per cent tacit knowledge (Sandelin et al. 2019; Ståhle & Grönroos). Training and development opportunities serve to strengthen the organisational tacit knowledge base, which is rooted in business processes or in the job activities and behaviour.

One of the key challenges lies in the protection of tacit knowledge. It has been qualitatively and statistically proven that large investments are made in capacity development initiatives aimed at job-specific knowledge acquisition and development. However, a lack of retention strategies to deal with voluntary and involuntary turnovers continue to put much of the acquired organisational tacit knowledge base at risk. Exposing staff to external sources of knowledge through training interventions and conference attendance, but not being able to retain the staff, caused misery in many of the South African SOEs that participated in the current research study.

Training and development opportunities provides employees and firms with a capacity to absorb knowledge. Nevertheless, in as much as capacitating employees sounds well in theory when it concerns the acquisition and development of knowledge, this study highlighted that the absence of knowledge sharing and retention was a serious problem area in many state-owned companies. Therefore, the findings of the study indicated that some aspects of training and development were, to a certain extent, knowledge-driven, but were not knowledge-driven in the areas of

knowledge transfer, sharing and retention. In contrast, in the problem areas of knowledge sharing and retention, which can be attributed to a lack of retention strategy, loss of knowledge and turnover, this study deduced that state-owned companies suffered from protective capacity. In other words, they failed to protect their hard-earned firm-specific human and knowledge resources. Andersén (2012:441) defines protective capacity as the capacity of the firm to sustain or to decrease the speed of depreciation of its knowledge-based resources or assets. Therefore, this study argues that if employees leave after having being exposed to training and development investments or interventions, such developments impact negatively on the knowledge protective capacity of the SOEs.

The next section interprets the research findings on the human resource practices of the SOEs in the study.

### **5.6.3 Knowledge-driven human resource retention practices**

The extent to which SOEs are able to retain and enhance their knowledge protection capacity should be reflected in their compensation and reward system. The research outcomes of EFA, chi-square test for independence and logistic regression unearthed and proposed staff retention strategy (rewards and recognition systems) as an important intervention factor in the formulation of a framework for knowledge loss reduction. Existing studies on the link between KM and a compensation or reward system, indicated that companies need to offer incentives that reinforce the desired knowledge management behaviour (Mihardjo et al. 2020; Matošková & Směšná 2017; Foss et al. 2015; Pastor et al. 2010). Arunprasad (2020:766) asserts that retaining skilled and knowledgeable workers who are at the top of their performance, remains a serious challenge for human resource managers.

The qualitative and quantitative findings of the current study found many SOEs wanting when it concerns staff retention issues. The lack of a retention strategy was a serious problem area that was a concern for both HR managers and employees in the state-owned companies. Furthermore, the staffing retention paradox was compounded by a number of issues, and if left unattended it could create serious sustainability and performance risks. Such issues include the absence of job

rotation, job shadowing, of programmes for the retiring experts with critical skills, succession planning, incentives and reward systems aimed at staff and knowledge retention.

The qualitative data highlighted that a number of SOEs did not have policies and strategies in place. For instance, most of the employees in two of research and development SOEs were on fixed-term employment contracts. The resultant high turnover rate leads to massive organisational knowledge loss. A lack of human retention strategies and funding to deal with the conversion of fixed-term contracts into permanent appointments, complicated the situation of knowledge loss in those companies. Moreover, the qualitative data supported by quantitative data indicated that the following were problem areas: A lack of compensation policies on counter offers; uncompetitive remuneration; and the absence of exit interviews. A number of studies pointed out that compensation and reward systems (financial and non-financial rewards), if well-conceptualised, can build and bolster the desired knowledge management behaviour (Kianto 2017; Matošková & Směšná 2017; Denote & Guadamillas 2015, 2011). However, both the qualitative and quantitative research findings pointed to the opposite, in that much of the short-term incentives were not aimed at rewarding the desired KM behaviour, but rather the general staff performance in the state-owned companies.

A lack of systems to incentivise KM contributions, especially transfer and retention, affects the flow of knowledge and contribute to its stickiness. When knowledge cannot flow freely it becomes sticky (Von Hippel 1994; Szulanski 1996). Incentives and rewards can serve as both key enablers and barriers to effective knowledge management (Ramjeawon & Rowley 2020). Schuller (2014:61) infers that such barriers manifest themselves as personal and organisational factors acting as inhibitors in the knowledge transfer process.

Rewards aimed at incentivising knowledge management systems or practices should move beyond individuals to include teams and groups (Camelo-Ordaz et al 2011; Cabrera & Cabrera 2005). The current study argues that rewards and recognitions can serve as motivational benefits for employees in the state-owned companies to acquire, develop, share, retain or hoard knowledge. Nevertheless, most of the participants in the qualitative research and 65% of the survey respondents asserted that rewards and recognitions for KM contributions did not apply in

their organisations. Furthermore much of the reward systems were individually based and focused on general staff performance areas. It was also revealed that knowledge management activities were not included in those performance indicators. Therefore, it can be deduced that KM was not part of the performance management system. Furthermore, it will prove difficult to reward KM activities if it is not a KPI in the performance management system. Andreeva et al. (2017:211) posit that the appraisal of knowledge behaviour should include the evaluation of workers' engagement in knowledge management activities and behaviour. For this reason, the current study concludes that many of the performance management systems in the state-owned companies were not knowledge-driven because they did not exhibit and reward the desired knowledge behaviours such as acquisition, sharing, retention and application.

In an ideal situation, retention practices, through relevant policies and strategies, should aim at building and reinforcing the designed KM initiatives and behaviour. Such systems should take protective measures or build capacity against any potential knowledge loss. A lack of retention systems inevitably leads to much of the organisational knowledge loss in the cases in this study. Therefore, this study argues that a lack of staff and knowledge retention systems negatively affect the knowledge protective capacity. Moreover, a lack of these systems equally taints investments made in building knowledge absorptive capacity. Knowledge-based and learning organisations will need to sustain their knowledge assets and competitive advantage by building and investing in knowledge absorptive capacities and knowledge protective capacities (Cohen & Levinthal 1990; Andersén 2012).

Human resource retention practices have a role to play in building capacities aimed at knowledge protection. HR training and development in state-owned companies have made positive contributions in building knowledge absorptive capacity, as illustrated in the previous section. The current study asserts that retention practices, in contrast to training and development practices, did not develop and support knowledge protective or retentive capacity in many of the SOEs. Thus, they lacked a knowledge-driven supportive role. From a KBV theory of the firm, incentives and rewards for KM behaviour should aim at shaping and reinforcing certain knowledge behaviours by recognising and celebrating achievements in these behaviours and initiatives (Andreeva et al. 2017; Foss et al. 2015). Mihardjo et al. (2020:5) state that



compensation and rewards should help companies attain competitive advantage by enticing and retaining their experienced human resources and their much-valued experience-based knowledge. Many of the South African SOEs are struggling in this regard. The qualitative research findings revealed that only three out of nine SOEs (33%) had compensation practices in place that support KM processes and also had KPIs for knowledge management activities.

In brief, compensation strategies that support and reward KM contributions and behaviour were non-existent in 67% of the cases. Only three state-owned companies recognised senior knowledge workers who mentored younger employees through their performance appraisal system. The absence of short-term incentives hindered the required knowledge management behaviour and impacted negatively on knowledge protective capacity. This view was supported by the majority of the respondents in the quantitative phase.

The next section examines the effectiveness of human resource management practices in supporting knowledge management behaviour, processes and initiatives.

### **5.7 Overall effectiveness of knowledge-driven human resource practices**

The qualitative research findings regarding this variable varied in that the majority (40%) of participants (human resource managers) indicated the ineffectiveness of the HRM practices in facilitating the retention and management of organisational knowledge. A noticeable minority (30%) of the participants asserted that their practices were effective. However, there are gaps for further development. An equal minority (30%) of HR managers indicated that their practices were partially effective but not so effective in minimising involuntary turnover and knowledge loss. Briefly, those in the majority asserted that human resource management practices were not effective in many of the SOEs and indicated gaps and areas for further alignment and development of the practices.

The researcher of the current study contends that if human resource practices were indeed knowledge-driven and effective, knowledge loss due to voluntary and involuntary turnover would not have been an issue. Moreover, there would not have been a shortage of retention

strategies aimed at knowledge transfer and retention, which could build a knowledge protective capacity as well as a knowledge absorptive capacity.

A judgement on the effectiveness of the HRM practices could not be passed because knowledge management practices were not formalised in 67% of the state-owned companies. Organisations that invest in various knowledge management practices enjoy superior performance and effective management of organisational knowledge (Hussinki et al 2017a). According to Hussinki et al. (2017a:1601), human resource management practices that are knowledge-based are among the most influential practices for effective knowledge management in companies.

It was difficult to make sense of (or find a link between) their HR practices and knowledge management. The quantitative research findings also presented different responses: Of the respondents, 34% indicated that their HRM practices were effective, while 32% indicated that their HRM practices were not effective. What is even more disturbing is the fact that 34% of the respondents did not even know whether their practices were effective or not.

The outcomes of both the qualitative and quantitative phases showed the difficulty of branding the HRM practices as knowledge-driven or not. The respondents were equally divided about the overall effectiveness of the HRM practices, as 35% asserted that the practices were effective and 35% indicating they were not effective. This split of opinions, coupled with a noticeable share of respondents who were less informed of the effectiveness of HRM practices, indicate the complexities of HRM and knowledge management issues in the state-owned companies of South Africa. HRM practices that are not aligned to knowledge management efforts cannot be effective in helping organisations achieve better business processes and performance (Shafagatova & Van Looy 2021; Kianto et al. 2017; Hussinki et al. 2017a, 2017b).

The differing in opinions pertaining the effectiveness of HRM practices and their support to KM, not only exposes a lack of understanding of the two concepts but also a lack of synergy between these issues. Organisational knowledge is contingent on human resources. Such a link needs to be understood in context by stakeholders in the state-owned companies. Therefore, it was very difficult to separate HRM practices from knowledge management processes in the organisations.

The research findings also showed that the effectiveness of individual HRM practices differ in supporting knowledge management. Pertaining the effectiveness of recruitment practice in supporting knowledge management, 34% of the respondents indicated that the practice is effective. An equal number of respondents (34%) did not know whether the practice was effective, while 30% indicated that the practice was not effective.

Whilst there was a convergence of positive views on both the qualitative and quantitative research findings on the effectiveness of training and development practice in supporting knowledge management, the same cannot be said of retention practices. Both the qualitative and quantitative research findings indicated a convergence of views that point to retention practices as ineffective in supporting knowledge management. This finding aligns well with the findings expressed in the previous section that a lack of retention strategy and policies is a problem area in the HR systems of the SOEs.

Pertaining to the role of HR departments in driving organisational culture that is effective in supporting knowledge sharing, 38% of respondents indicated its effectiveness while almost the same percentage (37%) indicated the opposite. A lack of a culture of knowledge sharing hinders knowledge flow (Islam et al. 2020). HR has an important role to play shaping the desired organisational behaviour and knowledge-driven culture. A number of studies stress the importance of HR in building and shaping a knowledge-driven organisational culture (Gürlek 2020a, 2020b; Murali & Kumar 2014; Camelo-Ordaz et al. 2011).

The majority of participants (in the qualitative phase) and respondents (in the quantitative phase) asserted that HR was wanting in driving an organisational structure that is effective in supporting knowledge management. The judgement on the effectiveness of HR in driving knowledge-centred structures depends very much on the availability of KM functions. An organisational structure is an important variable and provides important soft infrastructure for effective management of knowledge (Mihardjo 2020; Ramjeawon & Rowley 2020; Sandelin 2019; Becerra-Fernandez 2004). Human resource practices can play an important role by designing and driving organisational structures and processes that are supportive of knowledge management. KM was structurally conceptualised in more than 67% of the state-owned companies. Both

qualitative and quantitative data pointed to a need to build KM in the organisational structures of the state-owned entities. In those companies, HR is the custodian of the organisational design process. In addition to the qualitative evidence, the results of both the EFA, and chi-square and logistic regression pointed out that organisational culture and other structural barriers were significant intervention factors in the development of a framework for knowledge loss reduction.

The next section examines how organisational culture and structural designs support knowledge management in the SOEs that took part in the study.

## **5.8 Organisational culture and structure**

This section discusses the research findings pertaining to whether organisational culture and structural designs support knowledge management, and the role of HRM in building knowledge-oriented culture and designs in the state-owned companies.

Organisational culture and organisational structure can both serve equally as barriers and enablers of knowledge management in companies (Islam et al. 2020; Ramjeawon & Rowley 2020; Gürlek 2020a; Sandelin et al. 2019). The next sub-section explores the research findings on the organisational cultures in the state-owned companies and the role of HR in facilitating and supporting a knowledge-driven culture.

### **5.8.1 Organisational culture and the role of HR in facilitating knowledge-driven culture**

Organisational culture and structure can impact positively or negatively on knowledge management. Organisational culture that drives, supports and shapes knowledge management behaviour is labelled as knowledge-driven or knowledge-centred organisational culture (Gürlek 2020a). According to Gürlek (2020:48), such culture should include the shaping and reinforcing of certain values, beliefs and systems that are the interests of knowledge management and learning. Organisational culture forms critical soft infrastructure for effective management of knowledge (Becerra-Fernandez 2004). Accordingly, knowledge-driven organisational culture will orientate employees in knowledge management behaviours, processes and activities. State-owned companies are knowledge-intensive and learning organisations. It is argued that different

types of organisational cultures in firms operating in a knowledge-based economy, must fit the conditions and the character of those knowledge-intensive companies (Gürlek 2020a; Sun & Anderson 2012). Knowledge-intensive firms possess certain knowledge-based characters and behaviours that enable them to advance and value knowledge resources as sources of competitive advantage. Therefore, the display and reinforcement of the desired behaviour geared towards facilitating knowledge management capacities and processes should be the hallmark of the state-owned companies. Such capacities should include, but must not be limited to knowledge acquisition capacity, knowledge absorptive capacity, knowledge protective or retentive capacity, and knowledge transfer or sharing capacity.

The culture within an organisation needs to be analysed to establish if it serves to advance and shape certain knowledge-related behaviour. The qualitative research findings pointed out the need for HRM practices to be at the focal point of facilitating the process of building organisational knowledge-centric culture. According to the researcher, organisational culture issues were problem areas in the state-owned companies. This research finding is supported both qualitatively and statistically. A number of HR managers posited that their organisational culture does not advance knowledge management activities because of a lack of KM structures, strategies and processes. Nevertheless, the current study found that organisations may display certain knowledge-related behaviours, even though KM is not formalised in the organisational structure. The majority of those who posited that their organisational culture support and facilitate KM, were from three state-owned companies with formalised KM structures. However, there were certain cases where, in principle, state-owned companies did support knowledge management, even though there were no KM systems, tools and processes to encourage it deliberately. Many of the knowledge-related activities of the SOEs happened without labelling it as KM. But that does not mean they did not exhibit knowledge-driven culture and behaviours. For instance, the companies invested in staff training and development opportunities for their employees to acquire, develop and learn new knowledge and skills. Therefore, it cannot be argued that they did not exhibit certain knowledge-driven cultures and behaviours.

In the qualitative phase, the participants who said that their organisational culture supports knowledge management, were in the majority. However, the quantitative research findings

presented a very different picture because majority of respondents asserted that organisational culture did not apply to or did not support knowledge management behaviours. Furthermore, organisational culture proved to be a significant barrier to effective KM, as affirmed by 83% of respondents in the quantitative research findings. In addition to that, organisational red tape was flagged as a barrier to effective KM by more than 82% of the respondents.

The research findings confirmed the results of a number of previous studies (Islam et al. 2020; Ramjeawon and Rowley 2020; Sandelin et al. 2019; Foss et al. 2015; Pham et al. 2015; Donate & Guadamillas 2011) that found organisational culture to be both a barrier to and enabler of effective management of knowledge. However, there is a need to intentionally shape and reinforce certain norms, values and behaviours to advance knowledge management processes in the state-owned companies. The researcher infers that HR has a critical role to play in shaping and reinforcing knowledge-driven organisational cultures.

The next subsection explores how organisational structures facilitate knowledge-driven behaviour.

### **5.8.2 Organisational structure and the role of human resources departments in facilitating knowledge-driven structures**

As with organisational culture (as discussed in the previous section), organisational structure can also serve to facilitate or limit knowledge-based behaviour. In so far as organisational structure is concerned, the researcher infers that HR departments have a critical role to play in the facilitation of knowledge-centric structures in their companies. Of the state-owned companies that participated in the qualitative research, 67% were found wanting in terms of structural design and support to KM. They did not have KM in their organisational structures, processes and systems. Therefore, an organisational structure that does not facilitate the desired knowledge-related behaviours, cannot claim to be a knowledge-driven organisational structure. Organisational structure affects the configuration of the structure, how employees frequently interact with one another and how they share knowledge (Kianto et al. 2017; Andreeva & Kianto 2012; Becerra-Fernandez et al. 2004; Tobin & Franze 2005). Gürlek and Tuna (2018:470)

propose that companies become involved in the creative destruction of the old structures and create the new ones that are knowledge-oriented. Through organisational design interventions, HRM departments can play an influential and facilitation role in the creation of new structures that are supportive of knowledge management.

Hussinki et al. (2017b:906) assert that an organisational structure is one of the critical success factors and knowledge-driven organisational factors for effective knowledge management in firms. The fact that KM structures are lacking in 67% of the state-owned companies showed that many of them had not embraced knowledge management as a concept. The absence of an organisational structure dedicated to facilitate KM was a serious limitation in a number of the state-owned companies. A study by Mueller (2014:192) found that organisational structures positively affect knowledge sharing processes. However, the current study argues that although the absence of dedicated structures affects the sharing of knowledge, it also affects the effective facilitation of knowledge management processes (from acquisition to retention), and behaviours and systems. Much of organisational knowledge creation, development, sharing, and retention happens within the context or space what Nonaka and Takeuchi (1995) labelled as 'ba'. Therefore, organisational culture and structure facilitated by HRM can play a meaningful role in the creation of knowledge-based context (ba).

Previous studies described the type of the organisational structures that they perceive to be knowledge-driven (Mueller 2014; Hislop 2013; Mahmoudsalehi et al. 2012). Mueller (2014:192) and Becerra-Fernandez et al. (2004:42) inferred that the hierarchical structure of the firm negatively affects the employees' interaction and sharing of knowledge. The qualitative research findings revealed hierarchical structures as exhibitors of knowledge sharing and retention in majority of the state-owned companies. A number of HR managers argued in favour of a more flexible matrix structure. Matošková and Směšná. (2017:622) concur that job design and organisational structure negatively affect knowledge sharing behaviours in the organisation. Some researchers are in favour of more flexible and matrix organisational structures as they enhance knowledge sharing and integration (Mueller 2014; Becerra-Fernandez 2004). The current study argues that although a flat or matrix structure provides an added advantage for the ease of flow and sharing of knowledge and information, the downside is that employees reach

the end of their career path in the organisation too soon. Reaching the end of their career path too soon, creates challenges in terms of opportunities for further career development. This may encourage employees to consider employment elsewhere. A flat structure may indirectly lead to staff turnover if employees take up employment elsewhere. Therefore, this study differs with previous studies in this regard and infers that it does not matter whether the structure is hierarchical or flat. What is important, is for the structure to exhibit the required knowledge-based behaviours that are dedicated to knowledge management. For instance, a company might have a structure that is hierarchical or divisional in its configuration but have dedicated KM champions in all divisions, in addition to the KM unit. Certainly, one cannot argue and say such a structure is not a knowledge-driven organisational structure.

The qualitative findings revealed that HR managers overwhelmingly concurred that they have a critical role to play in the facilitation and development of structures that are supportive of KM behaviours, processes and strategies. The researcher of the current study argues that such a role should not be limited by the type of organisational structure. The quantitative research findings support this view because a significant majority (65%) of respondents believed that HRM had a role to play in facilitating a structure that supports knowledge management behaviours.

### **5.8.3 Organisational barriers to effective knowledge management**

The qualitative and quantitative research findings of the current study revealed a number of issues or factors that were considered as barriers to effective management of knowledge management in the state-owned companies. The implementation of knowledge management in organisations often require changes in their cultures (Klepić & Madžar 2017; Becerra-Fernandez & Sabherwal 2015). Many of the barriers to effective knowledge management, therefore happens in the cultural context of the organisation.

The findings of the current study affirmed the findings of previous studies on critical success factors for ensuring successful knowledge management in organisations (Attar 2020; Sandelin et al. 2019; Ayatollah & Zeraatkar 2019; Dikotla 2019; Kolonari et al. 2019; Donate &



Guadamillas 2015; Phaladi 2011). The results of the study depicted the following as barriers to effective KM in the state-owned companies:

- a silo mentality
- organisational red tape
- knowledge as a source of power
- a lack of recognition and rewards systems
- a lack of awareness and education on KM
- HRM practices
- employment equity
- fixed-term employment contracts
- competing priorities for leadership
- a lack of leadership
- knowledge hoarding
- a lack of proper IT systems to support KM

These organisational barriers should be addressed because they affected the KM efforts of the SOEs that participated in this study. The results of the EFA in the quantitative phase confirmed the qualitative findings on these challenges and posited organisational barriers as a problem area for intervention in the state-owned enterprises. While the qualitative research findings revealed and labelled the barriers as such, the EFA, chi-square test for independence and logistic regression analyses went as far as indicating these organisational barriers as intervention factors in the formation of a framework for knowledge loss reduction. In a nutshell, organisational knowledge loss can never be reduced and managed without interventions aimed at addressing organisational barriers.

The quantitative research findings concurred with the qualitative research findings by asserting that organisational silos and red tape or bureaucracies in the state-owned companies impacted

negatively in the facilitation of knowledge-centric cultures. More than 80% of the respondents characterised silos and red tape as barriers for effective KM in the organisations. Silos, bureaucracy and red tape cause serious problems in South African state-owned companies (Phaladi 2011). There is a need for state-owned companies to invest in cultural and contextual issues affecting and contributing to knowledge loss.

The current study found that the reduction of knowledge will start with knowledge loss recognition or realisation. This will change the cultural environments to knowledge-driven organisational cultures. According to Klepić & Madžar (2017:259), a knowledge-driven culture is defined as a style of living certain behaviours in a company that enables and motivates human resources to create, transfer and use knowledge for the benefit of the organisation and for its permanent success. This assertion implies that an organisational culture of silo mentality and red tape cannot work and advance the interests of knowledge-based competition in knowledge-intensive industries like state-owned companies.

The removal of organisational barriers such as a lack of recognition and rewards systems, will serve to build and shape organisational culture towards knowledge-centric cultures in the state-owned companies. A number of studies on rewards for knowledge management, posit that rewards and recognitions are important variables in the management of organisational loss and retention efforts (Ramjeawon & Rowley 2020; Dikotla 2019). A lack of rewards aimed at incentivising and shaping the necessary KM behaviours is a barrier to effective knowledge transfer and retention efforts. A recent study by Sandelin et al. (2019) on public water utilities, postulates that tacit knowledge comprises 95% of all organisational knowledge. In other words, a lack of rewards to entice and retain knowledge workers in the SOEs mean that 95% of organisational tacit knowledge is at stake unless interventions are made to address rewards, recognition and retention systems. Chi-square test for independence and logistic regression analysis revealed reward schemes as significant independent variables in the intervention and reduction of knowledge loss. This statistical research finding aligns well with the qualitative findings that brought to the surface a lack of short-term incentive schemes to propel the required KM behaviours and initiatives.

A lack of awareness and education on KM contributes to organisational climate of mistrust. Knowledge sharing flourishes in an organisational climate of trust (Attar 2020; Khesal et al. 2013). People see power in knowledge that they possess. According to McNeish and Mann (2010:25), the view that knowledge is a source of power for individual employees and the only guarantee to maintain employment security, feeds the climate of mistrust between the employees and their employers (organisations). Klepić and Madžar (2017:260) add that since knowledge is interpreted as a source of competitive advantage for employees to advance their career, they see knowledge as a weapon of furthering success in their career. As such, it creates some elements of mistrust for employees to forsake their knowledge in the name of organisational knowledge management. For these reasons, there is a need to address barriers pertaining to a lack of awareness and education on the importance of knowledge to the organisation. This should go beyond the protection of individual interests of the employees; it should also include the protection of organisational knowledge interests. Employees will always leave the organisation for one reason or the other, but organisations will always remain. Strategies need to be put in place to ensure that the knowledge of employees is retained when they leave the organisation.

Employees need to develop positive attitudes towards knowledge and organisational efforts to protect it (Ayatollah & Zeraatkar 2019). In other words, it is important to create an awareness of KM issues and dealing with trust issues that drive undesired knowledge behaviour. Another important barrier as posited in both the qualitative and quantitative research findings, was a lack of knowledge-centred leadership. Thus, leadership is the discussion point in the next subsection.

#### **5.8.4 Leadership support to knowledge management**

Recent studies contend that companies that use knowledge-based competition also need to make use of knowledge-centred leadership (Gürlek & Çemberci 2020; Shamim et al. 2019; Naqshbandi & Jasimuddin 2018). The picture depicted by many of the research findings show mix feelings on the role of leadership in facilitating knowledge-driven organisational culture and knowledge-driven practices. The qualitative research findings of the current research showed that 67% of the participants indicated there was a lack of leadership and management support in the state-owned companies where KM was not institutionalised. Those at the top were lamented for

the lack of knowledge vision, knowledge management leadership and their buy-in. The KBV of the firm treats knowledge as strategic resource (Barney 2001; Grant 1996). Therefore, leadership in knowledge-intensive industries such as state-owned companies should display knowledge-centred support and behaviour by providing leadership and organisational structures to manage it. However, the research findings asserted that this was not the case in many of the SOEs. It is also important to emphasise that out of nine state-owned enterprises that participated in the qualitative phase, only three had knowledge management leadership institutionalised through relevant systems and processes.

The qualitative research findings deduced that leadership was a problem area in the SOE sector. However, the quantitative research found there was positive leadership support for KM. The majority of the respondents indicated that there was leadership support, whilst a small but noticeable share (24%) remained neutral, indicating they were less informed on this variable. The fact that a noticeable share (24%) of respondents was less informed about leadership support for KM, speak volumes. The fact that the quantitative research found the opposite, does not necessary mean all is well in SOEs regarding leadership support. If that was correct, then leadership would have translated into knowledge-based structures, strategies and processes, but the research found that KM was not institutionalised in 67% of the state-owned companies.

Knowledge-driven leadership invests in knowledge management capability by putting structures and processes in place. KM capability enhances organisational performance and thereby ensuring sustainability (Durst & Zieba 2020; Durst 2018; Naqshbandi & Jasimuddin 2018). The fact that 26% of the respondents indicated that there was a lack of leadership support, together with the 24% who were less informed, suggest that the leadership was not knowledge-driven in character and support. The qualitative research findings showed that 67% of the participants indicated that leadership in the SOEs was not visible and did not drive a knowledge management agenda. What can be deduced from the qualitative research findings is that top leadership did not have a proper KM vision. Knowledge-oriented leadership is a type of leadership style that depicts and promotes KM behaviour such as the creation, application, transfer (sharing) and retention of organisational knowledge (Naqshbandi & Jasimuddin 2018; Donate & de Pablo 2015). In a nutshell, knowledge-driven leadership should influence KM strategies and processes. According

to Naqshbandi and Jasimuddin (2018:703), knowledge-oriented leadership should build and support knowledge management capabilities. Therefore, based on the qualitative data, the researcher of the current study infers that leadership displayed in many of the SOEs was the complete opposite of what knowledge-oriented leadership stands for. As such, it adds to the list of organisational barriers calling for intervention in knowledge loss reduction.

The next section explores and identify gaps for aligning HRM practices in order to reduce organisational knowledge loss.

### **5.9 Alignment of HRM practices in managing organisational knowledge loss**

This section discusses the qualitative research findings on the alignment of HRM practices in the management of organisational knowledge loss. Existing studies state the importance of the interface between HRM practices and knowledge management (Gürlek 2020a, 2020b; Murali & Kumar 2014). Nevertheless, a lack of alignment and integration is a problem area regardless of whether KM roles and processes are in place or not. The researcher of the current research argue that HRM practices, if streamlined to support knowledge management, may enhance absorptive capacity, KM capability, and the retentive or protective capacity of knowledge. The current study found that HR recruitment practices and staff training practices played important roles in building organisational knowledge absorptive capacity. Furthermore, the study argues that if companies can invest in staff retention interventions such as retention strategies, rewards and recognition systems, and in other knowledge-based practices such as coaching and mentoring, job rotation and job shadowing, then knowledge protective capacity will be enhanced.

All twenty participants in the qualitative phase contended that there was a need for the integration of human resource management practices in knowledge management. Furthermore, the findings emphasised a dire need for HR managers to create a greater understanding of KM vocabulary and tools so that these tools and techniques can be better used in their practices. In those cases where KM functions, strategies, structures and resources were not in place, the study found that there was nothing to integrate at the time when the qualitative data were collected. However, for these companies to align their KM and HRM practices, the best starting point is to

develop an understanding of the science behind knowledge management, strategy, function, roles and resources. A lack of awareness and education on the philosophy behind KM is a serious challenge. Therefore, creating an awareness of what is lacking in terms of strategy and processes to close the gap, will assist the discourse. Because of this lack of awareness and education, the retention of critical skills and expertise will remain a challenge.

An overwhelming majority of participants in both the qualitative and quantitative phases concurred that the loss of organisational knowledge is the result of a lack of retention strategies. A lack of knowledge protective capacity will serve to decrease the survival chances of many SOEs. Recent studies demonstrated that a loss of expertise lead to knowledge risks that impact negatively on organisational performance (Durst & Zieba 2020; Rachid et al. 2019; Durst 2018).

The next section provides a summary of the research findings discussed in the chapter.

## **5.10 Summary of the chapter**

To recap, this chapter discussed and interpreted the key empirical research findings. The researcher infers that the realisation or recognition of knowledge loss is the genesis in the development of a framework for knowledge loss reduction. Furthermore, such a framework should include knowledge loss recognition as dependent variable. It should also include control factors such as recruitment processes and KM practices and intervention factors such as staff training, staff retention, organisational culture and organisational barriers.

In the management and reduction of organisational knowledge loss, state-owned companies should first start with the realisation or recognition of knowledge loss. Moreover, a lack of retention strategies were the main contributors of knowledge loss in the participating state-owned enterprises of the study. In as much as the study argues that recruitment processes play a part in sourcing the required human and knowledge resources to neutralise potential loss, state-owned companies also need to invest in appropriate knowledge management practices. The chi-square test for independence and logistic regression found HR recruitment and KM practices to be significant independent control factors in the formation of a framework for knowledge loss reduction. The study deduced that HR recruitment processes recognise knowledge loss twice as

much as other recruitment processes that do not support knowledge management. In addition, the recognition of knowledge loss is almost three times more for companies that do have knowledge management practices. These are control factors since they allow for recognition of knowledge loss. On the other hand, the recognition of knowledge loss is less observed in cases pertaining to training of employees, staff retention practices, effective organisational culture and organisational barriers. The study therefore argues that these are intervention factors because when applied, knowledge loss is less recognised.

The next chapter presents a summary of the findings, conclusions, recommendations and framework pertaining to how state-owned companies could address knowledge loss reduction by integrating HRM and KM practices and by addressing other organisational factors such as culture and barriers.

# **CHAPTER SIX**

## **RESEARCH FINDINGS, CONCLUSIONS, RECOMMENDATIONS AND KNOWLEDGE LOSS REDUCTION FRAMEWORK**

### **6.1 Introduction**

This chapter provides a concise summary of the research results of the entire thesis. It also presents the conclusions and recommendations based on the presentation, interpretation and discussion of research findings made in the previous two chapters. The chapter ends with a proposed framework for the reduction of knowledge loss.

The purpose of the chapter is to demonstrate to the scholarly community the researcher's understanding of the phenomenon of the study and how he provided answers to the research questions. In this chapter, the research findings are linked to the research objectives and questions of the study. In a nutshell, this chapter presents the scholarly exposition in a more concise and easily comprehensible form for the targeted community of the scholars. Moreover and most importantly, the chapter presents an empirically grounded framework for knowledge loss reduction with an emphasis on the integration points between human resource management practices and knowledge management practices. The researcher of the current study has a firm belief that such a framework will assist state-owned companies and similar organisations in transition to address the challenges associated with knowledge loss. Furthermore, in this chapter the researcher identifies the limitations and implications of the study for policy and practice in the interest of addressing the phenomenon of the study in the state-owned enterprises. In addition to the recommendations of the study, suggestions (based on the research findings) concerning possible future research, are also made for the scholarly community.

### **6.2 Summary of research findings**

The research findings of the study are summarised in this section according to the research objectives. The study established that the situation regarding knowledge loss in the state-owned companies is a complicated issue because a number of factors contributed to the phenomenon.



First, the study established that voluntary turnover in the form of resignations, was a serious problem that contributed to a large amount of knowledge loss. Secondly, retirement of the ageing workforce as a form of involuntary turnover was another challenge contributing to organisational knowledge loss. The ageing workforce caused havoc in the oldest state-owned enterprises as many of them were faced with older generations of knowledge workers who were retiring in large numbers. As a consequence, their expertise left with them. Thirdly, what was even more serious, was the lack of retention strategies for human and knowledge resources in many of the SOEs that participated in the study. Lastly, the study also established that the implementation of employment equity policies contributed to voluntary turnover and subsequent knowledge loss in some of the SOEs.

In as far as the causes of organisational tacit knowledge loss are concerned, the study found that in the absence of any strategies to contain the challenges, such loss leads to the shortfall of sustainable competitive advantage. Moreover, knowledge loss resulting from all these factors decreased the knowledge absorptive capacity in the state-owned enterprises. The study also revealed that for organisational strategies to succeed in managing organisational knowledge, such efforts should start with the realisation or recognition of knowledge loss as a key strategic issue in the state-owned enterprises.

When it comes to recognition and treatment of organisational knowledge loss, the study found that state-owned companies are resource-intensive and knowledge-intensive. Consequently, they rely on both tangible resources (human resources) and intangible resources (knowledge assets or resources) to deliver their developmental economic mandate. On a positive note, the study established that there was a recognition and treatment of staff (human resources) as important resources to drive their developmental mandate. In addition, organisational knowledge loss was recognised as a key strategic issue in the SOEs in the study. However, despite recognition of people as important resources, many SOEs continued to lose their firm-specific human resources due to the factors highlighted in the previous paragraph. Furthermore, many HR departments, as the custodians of human capital, failed to manage and take ownership of organisational knowledge loss. A lack of strategies to retain human resources as sources of organisational knowledge was testament to the failures. In addition, a lack of dedicated knowledge management

units, processes and practices in the structures of many state-owned enterprises, indicated that they were not serious about knowledge loss.

The HRM role in building and facilitating knowledge management capabilities was largely limited to recruitment processes, staff training and development practices. On a positive note, human resource managers in the state-owned enterprises acknowledged and saw their role as shaping behaviour towards knowledge management. They saw their role in shaping KM behaviours as one that include activities ranging from recruitment to the retention of the talent, as well as capacity development, workplace skills gap analysis, coaching and mentoring, succession planning, carrying out exit interviews, career development, KM awareness, driving human capital strategy, performance management and organisational culture and design. Nevertheless, when it came to human retention practices, the role of HR departments was limited in supporting knowledge management because they did not have retention plans.

The study also established that recruitment and training practices contributed to absorptive capacity for knowledge acquisition and development. The following activities were well-facilitated in the SOEs: Recruiting potential employees with the required knowledge and skill attributes, and then capacitating them with relevant knowledge-based training interventions and knowledge absorptive capacity. The fact that many of state-owned companies struggled with retention issues, means they were not helpful in building and sustaining knowledge protective capacity.

The study also found that the role of HRM was inseparable from knowledge management. Knowledge management is about knowledge in people. Human resource management is about people and the custodian of that people management practice.

The lack of knowledge management practices was a serious problem in many state-owned enterprises. The study established that SOEs were lacking in the following key knowledge management areas or practices: job rotation, job shadowing, expert forums, programmes for retiring knowledge experts, coaching and mentoring, knowledge harvesting and succession planning. Consequently, a lack in knowledge management practices only served to accelerate

organisational knowledge loss. Knowledge, as a fundamental resource, enables companies to achieve superior performance. Therefore, knowledge loss will impact negatively on their business performance and affect their level of competitiveness. In order to create value for the company, knowledge must get embedded and flow throughout all corners of the organisation. The study established that the absence of knowledge management strategies affected knowledge embedding and knowledge flows in the state-owned enterprises. The effectiveness of KM practices proved to be a challenge in many cases. KM practices that were effective, helped to facilitate and build knowledge management capabilities.

On the matter of knowledge-driven human resource management practices, it was revealed that many HRM practices did not bear certain knowledge-based characteristics or attributes that should facilitate and support knowledge management processes and behaviours. On a positive note, the study established that recruitment practices did bear certain knowledge-driven attributes because it supported companies in the acquisition of firm-specific knowledge and human resources required for strategy execution and ensured sustainable competitive advantage. Recruitment practices are knowledge-driven in nature because their aim is always to source the required knowledge, expertise and skill attributes. It is for this reason that that research findings identified recruitment processes as important control factors in the formation of a framework for knowledge loss reduction. The selection of staff was based on the overall fit to companies in terms of personality, values, norms and characters.

Another research finding in this regard was that staff training practices in the state-owned companies were also found to be knowledge-driven in capacitating and empowering human resources with knowledge-based training. The research findings established that state-owned enterprises were heavy investors in training and developing their staff as important resources to accomplish their mandate. Nevertheless, the study also established problem areas in the staff retention practices because compensation strategies, reward systems and performance management system were not knowledge-driven because the rewarding of KM contributions was non-existent in the majority of the state-owned enterprises. Performance management systems did not exhibit KPIs on knowledge-related behaviours and initiatives. The non-availability of

KPIs on knowledge management hindered the development of the required KM behaviours and that impacted negatively on knowledge protective capacity.

The study also established that there was a problem with the overall effectiveness of human resource practices in facilitating the retention and management of organisational knowledge. This research finding can be attributed to the fact that 67% of the participants indicated a lack of formalised KM processes and roles in the state-owned companies. The link between human resource management and knowledge management was not well understood. A lack of synergy and understanding of the relationship between the two management concepts contributed to the non-effectiveness of HRM practices and their support to knowledge management. The study further established that the level of effectiveness of individual HRM practices differed when it concerned supporting knowledge management. On a positive note, the overall recruitment, training and development practices were found to be knowledge-driven and effective. However, the same could not be said of the retention practices. A lack of dedicated retention strategies, rewards systems and policies for knowledge management in the HR systems of the state-owned companies, contributed to the ineffectiveness of the retention practices.

According to the researcher, the lack of a knowledge-driven organisational culture was a challenge for the SOEs in the study. The study found that organisational cultures in state-owned enterprises were not shaping and reinforcing the required knowledge management behaviours and activities. The research findings also revealed organisational culture and barriers as important intervention factors in the development of a framework for knowledge loss reduction. It appeared that organisational cultural issues were problem areas in many of the state-owned enterprises. For instance, a silo mentality, a lack of recognition and rewards, a lack of awareness and KM education, organisational red tape and a lack of knowledge leadership all impacted negatively on knowledge management. The widely held view that knowledge is a powerful source for competition does not help to promote a knowledge-driven culture and behaviour. Furthermore, organisational culture did not support knowledge management behaviour and initiatives in many of the state-owned companies. Their organisational culture did not exhibit a knowledge-driven culture and behaviour. The research findings of the study flagged organisational culture, silos and red tape as major barriers to effective knowledge management.

The study also established that a lack of knowledge vision and KM leadership did not help to advance the desired knowledge-driven organisational culture and behaviour in many of the SOEs. Knowledge-oriented leadership was missing in action pertaining to support for knowledge management capability.

The study established that organisational structures in many of the state-owned enterprises did not exhibit certain knowledge-driven cultures and behaviours. A lack of knowledge-centric structures remained a serious challenge. The majority of the state-owned companies that participated in the study did not have knowledge management in their organisational structures. Therefore, their organisational structures did not exhibit and support knowledge-related behaviour. Moreover, the lack of dedicated structures and roles to support knowledge management clearly indicated a general lack of interest in KM issues in the state-owned companies. No wonder there was so much organisational knowledge loss. A lack of dedicated structures to drive knowledge management, clearly showed that there was no knowledge-oriented leadership. The researcher of the study believes that knowledge-oriented leadership would translate in structures supporting knowledge management. This was found not be the case in many of the SOEs in the study.

In terms of the alignment and integration of HRM practices in managing organisational knowledge loss, the research findings clearly showed that there were gaps and a lack of alignment for further development and integration. A lack of alignment and integration remained a challenge regardless of whether KM roles and processes were in place or not. The study found that in many state-owned enterprises, HRM practices were not streamlined to support knowledge management. The researcher of the current study established that if their HRM practices had been streamlined, the alignment and integration would have resulted in a better knowledge management capacity and protective capacity of knowledge. The lack of alignment between and integration of HRM and KM practices in managing knowledge loss occurred at all the SOEs in the study. In a few SOEs, where there were clearly defined KM structures and roles, the alignment of retention strategies, rewards and recognition systems, job rotation, programs on retiring knowledge workers, job shadowing and succession were ineffective.

Of the respondents, more than 60% indicated that there was nothing to align and integrate in their SOEs since KM functions, strategy, structures and resources were not in place. On a positive note, the study revealed that there was general consensus among the participants on the need for the alignment and integration of human resource management practices and knowledge management practices. However, a lack of awareness of and education on knowledge management may blur areas of alignment and integration. Overall, the study established the importance of integrating human resource management practices and knowledge management practices for the reduction of organisational knowledge loss. The study also revealed that knowledge loss recognition, as key strategic issue, is important in the formation of a framework for the reduction of knowledge loss. Furthermore, both HR practices and KM practices should form important strategies in the reduction of knowledge loss.

### **6.3 Conclusions of the study**

The main purpose of the study was to develop a framework for integrating human resource management and knowledge management for the reduction of knowledge loss in South African state-owned enterprises. The underlying proposition was that such a framework will help state-owned companies to reduce knowledge loss by integrating HRM practices and KM practices. The proposed framework for knowledge loss reduction is presented and discussed later in this chapter.

It is evident from the study that if SOEs can realise or recognise knowledge loss as a key strategic organisational issue, and that if they apply and integrate HRM and KM practices in the management processes, knowledge loss will be significantly reduced. Knowledge managers and HR managers should therefore be at the forefront of influencing organisational knowledge management in their companies. The conclusions of the study are based on and guided by the following objectives:

- i. To identify causes of organisational tacit knowledge loss in selected South African state-owned enterprises.

- ii. To establish whether organisational knowledge and employees are recognised as sources of sustainable competitive advantage.
- iii. To establish whether organisational knowledge loss and its transfer is recognised and treated as knowledge management (KM) or human resources management (HRM) or an organisational issue in selected state-owned enterprises.
- iv. To establish the role of human resource management in building and facilitating knowledge management capabilities in the state-owned enterprises.
- v. To identify KM practices currently in place in the state-owned enterprises, and to identify their effectiveness in addressing the phenomenon of organisational tacit knowledge loss.
- vi. To determine knowledge-driven HRM practices, their role and effectiveness in reducing loss of organisational tacit knowledge.
- vii. To establish whether organisational culture and structure support knowledge management and the role of HRM in building a knowledge-driven culture and design in the state-owned enterprises.
- viii. To assess the overall impact of HRM practices in facilitating the management and reduction of organisational knowledge loss in the state-owned enterprises.
- ix. To identify gaps and areas for alignment and integration of HRM practices in managing impending organisational knowledge loss risks in the state-owned enterprises.

### **6.3.1 Conclusions pertaining to the causes of organisational tacit knowledge loss**

It is evident from the study that the situation of organisational tacit knowledge loss in the state-owned companies is a complicated issue caused by a number of factors. The researcher concludes that voluntary turnover, involuntary turnover and a lack of retention strategies were main attributes of organisational knowledge loss in the state-owned enterprises. State-owned enterprises experienced high turnover resulting from staff resignations and retirement of their

ageing workforce. A lack of retention strategies to deal with these turnover challenges complicated issues of knowledge loss.

The researcher also infers that in some cases the wrong application and implementation of the policy and legislation on employment equity might have indirectly fuelled voluntary turnover by closing employment opportunities for certain groups of employees. Employees were pressed to look for employment or promotion opportunities elsewhere, thus leading to knowledge loss.

### **6.3.2 Conclusions pertaining to the recognition and treatment of organisational knowledge loss**

On a positive note, the research findings of the study were clear that employees were seen as fundamental resources and as sources of organisational knowledge. Nevertheless, it is clear from the study that the adage ‘human resources and knowledge as important firm-specific resources’ did not hold water in many state-owned enterprises despite the fact that they were resource-intensive and knowledge-intensive companies. The researcher concludes that the adage does not translate in the retention of firm-specific human and knowledge resources because many state-owned companies had lost their valuable employees and their knowledge to other competitors.

The researcher infers that although state-owned companies valued and treated organisational knowledge loss as a key strategic issue, many of them were found wanting in so far as knowledge protection is concerned. A lack of investment in staff and knowledge retention strategies was a serious challenge for most of the state-owned companies. As employees leave state-owned enterprises, either through resignations or retirements, they leave with organisational knowledge, much of which is valuable, rare, imperfectly imitable and non-substitutable. The researcher infers that such a loss decreases the knowledge protective capacity of the state-owned enterprises.

The researcher also concludes that effective management of organisational knowledge starts with the realisation or recognition of knowledge loss as a key strategic issue.



### **6.3.3 Conclusions pertaining to the role of human resource management in knowledge management**

The researcher concludes that human resource management has a critical role to play in knowledge management. The research findings revealed an empirical evidence pertaining to the relationship and role of human resource management in building and shaping KM processes and behaviours. Because HR departments are the custodians of people management practices, HRM is involved in all management aspects of human resources, while much of KM is about the management of knowledge embedded in people. Consequently, knowledge depends on people. The researcher therefore concludes that KM and HRM are inseparable. It is clear that HRM played an important role in building knowledge management capability in those few state-owned companies where knowledge management was institutionalised. Even so, in most cases, the role of HRM was considered last in the knowledge management process. Likewise, the study revealed that in many SOEs, the role of HRM in building knowledge management was found to be on the periphery of activities. Much of the role that HR played in knowledge management, was limited due to a lack of understanding of the philosophy behind KM. Furthermore, the role of HRM was restricted by a lack of close relationships between the HRM and knowledge management functions.

### **6.3.4 Conclusions pertaining to knowledge management practices**

The results of the study showed that state-owned companies lack in a number of knowledge management practices. Knowledge management practices serve as important factors in the management of organisational knowledge. The researcher concludes that state-owned companies had a shortage of the following knowledge management practices or areas: job rotation, job shadowing, programmes for retiring experts, coaching and mentoring programmes, knowledge harvesting and succession planning.

A lack of knowledge management practices would make management and reduction of organisational knowledge loss a difficult process. The researcher infers that the continuous lack

of KM practices will threaten the state-owned companies and put their development agenda at risk, and as a result, will suffer from poor performance.

The research findings also showed that it took much longer to replace an employee in mission-critical areas of the business. So, the absence of knowledge management strategies served to exacerbate the knowledge challenges, given the staff turnover issues. Moreover, the researcher concludes that a lack of knowledge management practices will inevitably affect the business performance of the state-owned companies and will impact negatively on their sustainable competitive advantage.

### **6.3.5 Conclusions pertaining to knowledge-driven human resource management practices**

The purpose of this section is to provide conclusions about specific human resource practices and to establish if they are knowledge-oriented in shaping attitudes and behaviours in support of knowledge management activities in the SOEs. The study established that the following broad HR practices have the potential to enhance KM capabilities in the organisation: recruitment, training and development, and retention (compensation, performance management, rewards and recognition systems). Furthermore, the study also found that these HR practices have a role to play in organisational cultural and structural management. The conclusions about the latter are discussed in Section 6.3.7.

#### **6.3.5.1 Conclusions pertaining to knowledge-driven human resource recruitment practices**

With regard to the theory of absorptive capacity, the research findings revealed that, in the SOEs in this study, HR recruitment practices builds knowledge absorptive capacity. The recruitment practices are naturally knowledge driven in that they primarily play a critical role in the sourcing of employees with the required knowledge, skills and expertise. The results of the EFA indicated that recruitment practices and KM practices are important control factors in the framework for knowledge loss reduction. However, the articulation of specific KM behaviours in the recruitment process was found to be a problem area in many of the cases in this study. Furthermore, the researcher concludes that due to increased employee mobility and the complex nature of business processes in the SOE sector, recruitment practices experienced challenges to

fill mission-critical positions in their organisational structures. It took longer to fill vacancies in mission-critical positions caused by staff turnover. The study revealed that it is even worse when there are no KM strategies geared towards the retention of knowledge when employees leave. Whilst the role of HR recruitment in the acquisition of firm-specific knowledge and human resources was undisputed, the research findings also revealed that HR managers lacked mechanisms to quantify the impact of losing a critical skills due to voluntary turnover. On a positive note, the findings of the study also established that the acquisition of firm-specific human resources (employees) emphasised their overall fit in terms of personality, values and norms. The researcher of the current study concludes that emphasise on the overall fit of the potential employees could go a long way in cementing particular knowledge-driven cultures if it is well conceptualised in the recruitment regime.

#### **6.3.5.2 Conclusions pertaining to knowledge-driven human resource training and development practices**

The research findings revealed that SOEs invested heavily in staff training and development opportunities to enhance domain-specific knowledge and skills acquisition. For that reason, it can be deduced that training and development practices were knowledge-driven in SOEs. In support of the qualitative research findings, the results of the EFA revealed these practices as important intervention factors in the formation of a framework for knowledge loss reduction.

Workplace skills planning, PDPs, skills audit matrix and competency-based modelling were mechanisms in place to ensure that employees acquire domain-specific knowledge and skills. The researcher therefore concludes that training and development practices in the SOEs built knowledge absorptive capacity. Training and development opportunities offered to their employees served to strengthen the tacit knowledge base since the focus was on job-specific knowledge acquisition and development. However, the challenge was to protect and retain much-needed job-specific knowledge and skills. Therefore, heavy investment in job-specific training and development opportunities go to waste if SOEs lack strategies to retain capacitated and talented employees. The researcher also concludes that employees who leave their organisations, affect the knowledge protective capacity of those organisations. The researcher of the current

study argues: “What is the point of capacitating if you cannot retain?” and thereby emphasising the need for investment in retentive and protective capacities.

### **6.3.5.3 Conclusions pertaining to knowledge-driven human resource retention practices**

The research findings revealed that a lack of rewards and recognition systems for knowledge management contributions affected knowledge stickiness (see the discussion in the previous chapter). Without the necessary incentives, knowledge will remain sticky and therefore affects its flow or transfer in the SOEs. Human resource retention practices, among others, were important intervention factors in the development of knowledge reduction structures. The study revealed that a lack of retention strategy was a serious problem in state-owned enterprises. A lack of human resource retention strategies led to the loss of knowledge and expertise. The research findings revealed that the absence of job rotations, job shadowing, programmes for retiring experts, succession strategies, incentives and reward systems, contributed to knowledge stickiness in some of the cases in the study. Moreover, from a knowledge-based view the continuing high turnovers leading to organisational knowledge loss did not only affect knowledge stickiness but also the protective capacity of knowledge in the state-owned enterprises. In a nutshell, organisational knowledge loss affected knowledge protective capacity.

What complicated the issue of organisational knowledge loss in the SOEs sector even more, is that knowledge management was not included in the performance management systems of SOEs. Hence, it became increasingly difficult to incentivise it. A lack of compensation policies to counteroffer employees that were leaving, uncompetitive remunerations that were not market-related and a lack of exit interview strategies complicated retention and issues of knowledge loss. The researcher infers that all these issues are barriers to effective knowledge management in the state-owned enterprises.

### **6.3.6 Conclusions pertaining to the overall effectiveness of the knowledge-driven human resource practices**

In so far as the effectiveness of the HRM practices is concerned, the researcher infers that this was a problem area in many of the cases in this study. The study revealed that the ineffectiveness

of the practices effected the retention and management of organisational knowledge. If HRM practices were knowledge-driven in character and effective enough, loss of organisational knowledge due to voluntary and involuntary turnover would not have been an issue in the state-owned enterprises. The ineffectiveness of HR practices contributed to barriers of effective management of knowledge. For this reason, the researcher laments the fact that HR practices were not effective at building organisational knowledge protective capacity and reducing knowledge stickiness in the knowledge transfer and retention processes. Though, on a positive note, recruitment and staff training and development contributed positively to organisational knowledge absorptive capacity. Therefore, there is opportunity to make them effective in the management and reduction of organisational knowledge loss. The management of organisational knowledge loss is contingent on firm-specific human resources. Consequently, HRM departments needs to become an effective partner in the management of organisational knowledge loss. However, that role was non-existent in many of the cases in the study.

### **6.3.7 Conclusions pertaining to organisational culture and structure**

This section provides conclusions about the role of HR in shaping and facilitating knowledge-driven organisational culture and structures. The researcher concludes that as far as the cases in question, HRM departments and their practices have a role to play in culture management and organisational design to shape the desired knowledge-based activities, attitudes and behaviour.

#### **6.3.7.1 Conclusions pertaining to organisational culture and the role of HR in facilitating a knowledge-driven culture**

An organisational culture that does not drive, support and shape knowledge management, cannot claim to be a knowledge-driven culture. The study revealed that many of the organisational cultures in the state-owned enterprises did not support or helped to drive and support KM behaviours, processes and activities. On a positive note, HR managers acknowledged that they have a role to play in culture management and in shaping cultures in their organisations to influence and propel knowledge management initiatives and behaviours. As knowledge intensive companies, SOEs should ideally display and reinforce the desired behaviours towards the facilitation of knowledge management capacities. The study also established that in some SOEs,

knowledge-related activities happened even without labelling it as KM. Training and development opportunities offered to employees instil a certain culture in employees and companies because they are involved in seeking, acquiring, developing and learning new knowledge and skills. Consequently, the study could not, in the cases concerning study, conclude and label all HRM practices as not exhibiting certain knowledge-driven cultures and behaviours. However, the quantitative research findings revealed overwhelmingly that organisational culture was a major barrier to effective knowledge management. Furthermore, the research findings of both qualitative and quantitative studies, conclusively showed that organisational red tape and silo mentalities are barriers to effective KM. A lack of incentives and recognition systems did not help to build and reinforce the desired knowledge-centric cultures in the organisations concerned. HR managers did not play a role in driving and shaping KM behaviours. The researcher, therefore, concludes that organisational culture and red tape barriers are areas that require intervention in the formulation of a framework for knowledge loss reduction.

#### **6.3.7.2 Conclusions pertaining to organisational structure and the role of HR in facilitating knowledge-driven structures**

In the previous subsection, the researcher established that organisational cultures in the SOEs did not drive and shape the required knowledge behaviours. Similarly, an organisational structure that does not drive, support and shape knowledge management cannot claim to be a knowledge-driven structure. The study revealed that many of the organisational structures in many state-owned enterprises did not support or drive KM behaviours, processes and activities. The research findings revealed that 67% of the respondents did not have knowledge management units in the organisational structures, processes and systems of their SOEs. For that reason, the researcher concludes that their organisational structures did not exhibit and facilitate the desired knowledge management behaviours and roles. Moreover, it was also found that HR departments were the custodians of organisational structural designs in their organisations. Nevertheless, the HRM practices failed to advance the structures and systems in support of knowledge management activities and behaviours. A lack of KM configurations in the organisational structures indicates that knowledge management was not embraced as a management concept in the state-owned

companies. Conclusively, the absence of dedicated KM structures was a barrier to effective knowledge management in many of the South African state-owned enterprises.

### **6.3.7.3 Conclusions pertaining to organisational barriers to effective knowledge management**

The research findings conclusively revealed that several barriers existed in the state-owned enterprises that restricted effective KM system. These barriers were: a silo mentality, organisational red tape, knowledge as source of power, a lack of rewards and recognition systems, a lack of awareness and education on KM, HRM practices, employment equity, fixed-term employment contracts, competing priorities for leadership, a lack of leadership, knowledge hoarding, and a lack of proper systems to support KM.

A lack of knowledge-oriented leadership was evident because KM was not institutionalised in most of the state-owned enterprises. To counter the organisational barriers, some interventions were needed in the state-owned companies. Hence, the empirical results of chi-square for independence and logistic regression indicated that organisational barriers, in addition to organisational culture, should become intervention factors in the development of a framework for knowledge loss reduction. In other words, organisational knowledge loss will never be properly managed and reduced without interventions directed at addressing organisational barriers.

### **6.3.8 Conclusions pertaining to the alignment and integration of HRM practices in managing organisational knowledge loss**

The research findings revealed that there was a lack of alignment and integration of HRM practices in knowledge management. The researcher infers that HRM in KM had a strategic and operational role to play in the management of organisational knowledge and building knowledge capabilities in the state-owned companies. At the strategic level, their role was about aligning human capital strategy with the organisational strategy and at the operational level it was about the alignment of HR practices and knowledge management strategies. At the strategic level, there was some form of recognition of knowledge as key a strategic resource. However, at an

operational level, the study found not much that indicated alignment and integration of HR practices and knowledge management strategies in many of the state-owned companies since there were no KM function, strategy, structures and roles in place.

The study also revealed that there were gaps in the alignment of staff and knowledge retention interventions, for instance in terms of rewards and recognition, job rotation, job shadowing, retention strategies, coaching and mentoring, succession planning and programmes for the older generations of workers. The researcher concludes that although gaps existed, HR managers need to develop a greater understanding of KM vocabulary, strategies and tools so that they can better reflect on practices for alignment and integration.

## **6.4 Recommendations**

In order to integrate human resource management practices in (a) the management of organisational knowledge and (b) the management of the underlying organisational cultural issues and barriers, the following recommendations are advanced for the purpose of providing solutions for the identified problem areas in the study:

### **6.4.1 Causes of organisational tacit knowledge loss**

From the research findings, it is apparent that organisational knowledge loss in the state-owned enterprises was mainly caused by voluntary and involuntary turnover, mainly due to a lack of retention strategies. For the state-owned enterprises to mitigate problems relating to organisational tacit knowledge loss, the following recommendations are proposed:

State-owned enterprises should prioritise the development of employee retention strategies to mitigate the knowledge loss risks highlighted in the study. Such retention strategies should be directed to lessen the negative impact of employees leaving the organisations. There is a dire need for SOEs to create a highly committed cohort of knowledge workers, especially in core competence areas. That should begin with implementing effective staff retention strategies. The resource-based view puts firm-specific human resources at the centre of business strategies (Gürlek 2020a). A retention strategy cannot be a one-size-fit-all kind of approach, in that some



human resources are more important than the others. Keeping talented or knowledgeable and skilled workers in mission-critical areas of the business, should be at the heart of an employee retention system. State-owned companies need to value, nurture and keep their employees engaged to prevent them from leaving the company or to be enticed by competitors.

It is inevitable that employees will always leave for a better pay and benefits in the job market. Most of the HR managers lamented the fact that their companies did not provide market-related salaries and benefits. For that reason, the SOEs need to foster a positive and enticing work culture by offering competitive market-related pay and benefits and a healthy work-life balance for their employees.

There is a need to develop a knowledge-oriented compensation management regime that should recognise the value of personal knowledge and skills that employees can offer. Voluntary turnover was mostly attributed to a lack of competitive remuneration strategies. To contain this problem, state-owned companies should make their remuneration policies more flexible. This should include the ability to provide counter offers or a salary increases to retain the cream of their mission-critical workers. Recruitment of new employees to replace employees who have left the organisation, has proven to be costly for many SOEs in the study. To deal with this, the companies need to offer fair salaries to their most valuable and deserving employees. When employees are offered competitive market-related salaries, they tend to stay longer and much of their valuable knowledge and expertise will be retained in the system.

To deal with the challenges of organisational tacit knowledge loss resulting from the ageing workers in the competence areas of the business, it is equally important that companies devise strategies to retain their much-needed knowledge, expertise and skills. Potential successors need to be identified well in advance to ensure a smooth transfer of knowledge in the transition period. Knowledge transfer and retention should start five years prior to their leaving, To this end, employees should be contracted and be rewarded for their knowledge transfer and retention efforts. KPIs on knowledge transfer and retention should be unambiguous for all relevant stakeholders involved in the performance review process. This strategy will go a long way in minimising costs associated with offering them post-retirement contracts. Post retirement

contracting can only be considered in exceptional cases. Even if that is the case, employees should also be contracted to share their expertise and knowledge through mentoring the younger generation of workers.

In addition to the problems of turnover and lack of retention strategies, employment equity was found to be directly responsible for employees to look for growth opportunities outside their organisational boundaries. The researcher asserts that there is a need to scrutinise employment equity policies as contributors to voluntary turnover and subsequent knowledge loss in certain instances. Employment equity was a very emotive issue for some participants in the qualitative research phase. There is therefore a need to put employment equity as a labour compliance issue into context, together with its implications and application in the workplace. In exceptional cases, some trade-offs should be considered for the application of the policy and legislation. The misconceptions that exist in the application of the policy need some clearing. Employment equity does not force you to say “let me get rid of employees so that I can create spaces for other people to come”.

#### **6.4.2 Recognition and treatment of organisational knowledge loss**

Human resource managers and those at the top echelons of state-owned enterprises need to be made aware that effective management of organisational knowledge loss must start with the realisation or recognition that knowledge loss as a key strategic issue. If knowledge loss is not recognised as a key strategy issue, then all efforts aimed at addressing it will be futile. The recognition of knowledge loss as a key strategic issue will serve to advance and prioritise firm-specific knowledge and human resources at the centre of the business strategy. State-owned enterprises should do more than just use slogans such as “staff as importance resources” littered in their annual reports. They have to invest more into the retention strategies, as discussed in the previous section. However, retention strategies will only be effective if there is a recognition of firm-specific knowledge resources as key strategic resources. There is a need to raise an awareness and understanding in SOEs of the important and inseparable link between staff attrition and knowledge loss. For that reason, human resource managers need to take ownership of the management of tacit knowledge loss in their respective SOEs to ensure that organisational

knowledge depends on human resources. As the custodians of human resources, HR strategists should provide much-needed, knowledge-based leadership and expertise in this regard.

### **6.4.3 Knowledge management practices**

The research findings made it clear that state-owned enterprises need to invest in practices or strategies aimed at reducing knowledge loss and building knowledge management capabilities. Investment in such practices will help SOEs to sustain their competitive advantage. To deal with the challenges of employee turnover and knowledge loss, as highlighted in the previous section, knowledge management practices can act as important control factors for effective management of organisational knowledge loss. As a result, the following recommendations are made:

- i. Conduct knowledge loss audits to establish knowledge risk areas and develop strategies to mitigate the risks identified.
- ii. Develop strategies to ensure intergenerational knowledge transfer.
- iii. Develop strategies both monetary and non-monetary to incentivise the desired knowledge-driven behaviour and culture.
- iv. Implement succession plans to effect intergenerational learning and knowledge transfer.
- v. Implement job shadowing activities.
- vi. Develop programmes for retiring knowledge workers to ensure that their knowledge, expertise and skills are retained.
- vii. Introduce expert forums whereby experts are encouraged to take the lead in knowledge sharing activities in their expertise domain.
- viii. Develop coaching programmes to ensure effective sharing of knowledge.
- ix. Develop mentoring programmes as a way of managing knowledge loss that will provide opportunities for employees to learn from their mentors and develop. Thus, connecting senior and younger generation of workers will cement intergenerational knowledge sharing and learning.
- x. Use job rotations for employees to gain experience across business processes. This will ensure that tacit knowledge is spread, rooted and integrated across business process units.
- xi. Implement knowledge harvesting activities in core business processes.

- xii. Establish and resource communities of practice in core competence areas to ensure effective knowledge transfer and retention.
- xiii. Invest in relevant information and communication technologies and systems to ensure effective collaborations and knowledge management processes.
- xiv. Conduct exit interviews by dedicated KM personnel in collaboration with HR personnel. This will ensure that potential knowledge gaps are identified and strategies are developed to address them.

Investment in these knowledge management practices will assist state-owned enterprises to reduce knowledge loss risks. However, these practices cannot happen and become effective on their own. For that reason, there is a need to implement structures, roles and resources to drive the strategies. Moreover, the top leadership and management should provide much-needed structural support to actualise dedicated KM functions and roles. Furthermore, many of the proposed practices require cross-pollination efforts from human resource management departments. It is in this context that the researcher calls for a strategic partnership between HRM and KM for the effective management and reduction of organisational knowledge loss.

#### **6.4.4 The role of human resource management in building knowledge management capacity**

This study provided empirical evidence on the relationship and role of HRM in knowledge management. From the research findings, it is clear that HRM in state-owned enterprises has a role to play in building and shaping knowledge management processes and behaviour. This role cannot be overemphasised. By building, shaping and reinforcing the desired KM behaviours, human resource management will be able to enhance knowledge management capabilities in their organisations. Synergy should be created between human resource management and KM in state-owned enterprises. HRM should not come last in the knowledge management process during exit interviews. The study recommends that knowledge retention should start at the very beginning of the process of sourcing talented employees to fill the identified knowledge and skills gaps, and continue right through employee engagement to the retention of those knowledge workers. It is for that reason, that the researcher proposes that recruitment, training and

development, organisational design, organisational culture management, compensation, retention, career management and performance management as HRM practices and the overall HRM environment in the organisation should incorporate a knowledge-based character and approach. In a nutshell, the researcher recommends that HRM practices in South African state-owned enterprises should be knowledge-orientated and build a support capacity for effective knowledge management.

#### **6.4.5 Knowledge-driven human resource management**

From the results of the study, it is clear that those HRM practices that had positive effects on KM practices, were also knowledge-driven because they played a critical role in knowledge management. This concurred with research by Gürlek (2020a), Mihardjo et al. (2020) and Kianto et al. (2017). This section makes recommendations on how HR practices could be made more knowledge-centric in facilitating knowledge management in the SOEs in the study.

##### **6.4.5.1 Knowledge-driven human recruitment practices**

For a recruitment practice to be more effective as a control factor in the knowledge reduction framework and in building a knowledge and skills base, it should be more proactive in the sourcing of required knowledge and skills. Being proactive, means going beyond just the recruitment of employees with mission-critical skills to building a brand of loyalty and be known as recruiting only the best talented employees in the market sector. In that way, HRM staff will not struggle to fill positions in mission-critical areas of their business. This also mean that they should pay the best competitive salaries and benefits in the market sector. A competitive recruitment regime should include competitive benefits and perks that will keep employees happy, engaged and cared-for. Communicating a competitive recruitment system to potential candidates, will emphasise the value of their knowledge and skills to the company and will help build and bring confidence and integrity into the system.

Branding state-owned enterprises as learning and knowledge-based organisations would serve to entice potential candidates that associate themselves with similar organisations. This will create a

positive impression that the organisation values learning and knowledge where everybody can learn and grow.

Recruitment practices should focus on the knowledge management attributes of potential candidates. Such attributes should include knowledge sharing, teamwork, innovation, ability to develop, coach and mentor others, networking and collaborative behaviours. The articulation of these knowledge management behaviours in the recruitment practice will demonstrate knowledge-driven attributes and behaviours. It is also a good strategy to encourage required knowledge attributes by promoting existing staff. This will help workers to feel valued and that their knowledge is critical to the company's success. It will also increase employee value proposition.

#### **6.4.5.2 Knowledge-driven human training and development practices**

Knowledge-driven training and development practices should offer employees opportunities to continuously update their skills and knowledge base. It is through training and developing of employees that new knowledge is acquired, assimilated and created. Training and development practices, therefore, contribute to knowledge creation. As such, these practices will continue to build and increase knowledge absorptive capacity in the state-owned enterprises. Therefore, the study recommends that HR departments in the state-owned companies should develop measures to ensure return on investment on the training and development opportunities. Otherwise, it will prove extremely difficult to justify the effectiveness or impact of the training and development initiatives.

Eight out of the nine state-owned enterprises did not have a mechanism in place to ensure ROI is derived from their training and development initiatives. Only one company, in the DFI sector, had a mechanism in place for ensuring ROI. This measurement was based on the Brinkerhoff model. Benchmarking best practices will assist other state-owned companies to learn from the best. By having a mechanism for return on investment could assist HR practitioners to demonstrate the worth of their training and development investments. Moreover, it would demonstrate the value of the contribution of their training practices by developing a knowledge base for their organisations. In addition, the state-owned enterprises should not just train for the

sake of training. They should train to have an impact. Such impact should be demonstrated in terms of their organisational knowledge base and their knowledge management capacity.

#### **6.4.5.3 Knowledge-driven human retention practices**

From the research findings, it became clear that retention practices were problem areas contributing to knowledge stickiness and knowledge protective capacity issues in the state-owned enterprises. There is a need to invest in the development of compensation strategies and policies aimed at reducing and managing organisational knowledge loss. Both financial and non-financial rewards are critical for ensuring that factors contributing to knowledge stickiness, are minimised:

- First, a funding strategy need to be developed in some state-owned companies to deal with the conversion of fixed-term contracts to permanent appointments. Such an approach will assist in the retention of firm-specific human and knowledge resources.
- Secondly, a retention strategy should be built on sound and solid competitive remuneration systems. Since the costs of staff turnover are much higher than the employee's salary – depending on the criticality and scarcity of the skill – it would make sense that the state-owned companies invest in retention practices, rather than suffer the consequences of losing employees. According Florentine (2019), the costs of staff turnover could even be more than 2.5 times higher than an employee's salary.
- Thirdly, knowledge-based rewards systems should focus on group incentives rather than only on individual performance as that will stimulate interest in knowledge management activities at an organisational level. Short-term incentive schemes that stress the importance of the group above individual performance have proven to encourage social network capital cohesion (El-Farr & Hosseingholizadeh 2019).
- Fourthly, there should be some degree of flexibility in the compensation regime to provide counter offers for targeted staff and knowledge retention in critical areas of the business.

- Lastly, investment in a compensation system that is effective in the retention of human resources and their knowledge, will inevitably buffer knowledge protective capacity in the state-owned companies.

Furthermore, state-owned companies should develop knowledge-based performance management systems. The HR department should commit line managers across the company to include performance indicators related to knowledge management processes and behaviours. This will assist them to enhance knowledge management processes and build required KM capacity. Moreover, having KPIs on knowledge management processes such as creation, applications, acquisition, sharing, storage, and retention will cement the institutionalisation of KM in state-owned companies.

Moreover, the onus is on HR departments to build better employee loyalty support programmes aimed at increasing retention rates. Higher retention rates will result in the increased retention of the company's specific knowledge resources, thereby increasing the knowledge protective capacity as well as the knowledge base of the companies.

The retention management regime in state-owned companies should also be extended to address the risks of knowledge loss in the ageing workforce. Knowledge-driven career management that focuses on employee mobility in organisations, should also be included in the retention system.

#### **6.4.6 Organisational culture and structure**

This section presents recommendations on how organisational cultural and structural issues that were identified in the study can be addressed. The study recommends that the HRM departments of the SOEs that participated in the study, deal with the identified issues related to organisational culture management, structures and organisational barriers and that they drive the required knowledge-driven cultures, structures and behaviours.

#### **6.4.7 Organisational culture and the role of HR in facilitating knowledge-driven culture**

From the findings of the study, it is apparent that the role of HR in facilitating a knowledge-driven culture cannot be overemphasised. Human resource management practices could shape,



drive and reinforce organisational values, norms and behaviours towards an organisational knowledge-driven culture. Organisational culture could provide a critical, non-physical infrastructure for effective knowledge management if it is aligned to knowledge-driven HRM practices and knowledge-oriented leadership. As a result, such level of alignment will drive the required knowledge-related behaviours and initiatives. All practices should be conceptualised within the context of knowledge management to instil the required knowledge behaviours.

State-owned companies, as learning and knowledge-based organisations, should display and reinforce the desired behaviours aimed at facilitating KM capacities and processes. Knowledge creation, application, sharing and retention behaviours should become the hallmark of state-owned companies. Furthermore, HR departments should be at the forefront of such initiatives. This can be achieved as follows:

- First, by (a) sourcing the required knowledge and skills, (b) capacitating employees with job-specific and knowledge-based training and development interventions, (c) driving performance contracting on KM, (d) conceptualising KM in structures, and (e) establishing knowledge driven compensation and rewards systems. A positive knowledge-centric culture is more likely to be born out of that holistic approach.
- Secondly, once the whole or parts of the system is in place, HR could play a crucial role through staff engagement and communicating the knowledge culture visions of their organisation.
- Thirdly, the HR practices should ensure that human resource management initiatives are aligned to the knowledge management vision of the organisation.
- Fourthly, by making knowledge management a key strategic pillar of the overall human resource or capital strategy.
- Fifthly, serving as champions for knowledge management initiatives and processes.
- Lastly, HRM departments could carry out organisational culture assessments and employee engagement surveys to assess the state of readiness for embedding the required knowledge-related behaviours and cultures. Based on the outcomes of such assessments,

HR departments could orientate employees towards the desired knowledge-centric organisational culture.

In a nutshell, HRM departments in the state-owned enterprises are in a good position to make a meaningful contribution in so far as creating a knowledge-centric organisational culture is concerned.

#### **6.4.8 Organisational structure and the role of HR in facilitating knowledge-driven structure**

Many SOEs did not provide for knowledge management roles or functions in their structures. Based on the research findings, it is recommended that HR managers should play a role in the conceptualisation of the relevant knowledge management structures and roles, and the development of job profiles and assessment of the roles. There is a need to implement systems, structures, processes and responsibilities dedicated to institutionalising knowledge management. HR departments are the custodians of organisational structure, job design and related activities. For that reason, HR departments need to be seen as walking the knowledge management talk by incorporating KM structures and roles in the structures of their organisations. The need is there, irrespective of whether their organisations have a hierarchical or matrix structure. Furthermore, KM champions in different divisions of the organisation will assist in putting knowledge management on the agenda across the entire organisation.

#### **6.4.9 Organisational barriers pertaining to effective knowledge management**

State-owned enterprises should put to rest all organisational barriers if they are serious about inculcating a knowledge-driven organisational culture and structure. Many of the organisational barriers identified in this study can be traced back to a lack of human resource management strategies to deal with such issues. In order to deal with barriers that impact negatively on effective knowledge management, HR managers and other key stakeholders need to play their part in addressing these issues. This can be achieved as follows:

- There is a need to stop organisational silo mentality.

- Organisational red tape should be addressed.
- A greater level of awareness of and education in KM should be undertaken to expose the myth that ‘knowledge is a source of power’, largely because that contributes to knowledge stickiness because employees see that as a ‘weapon’ to protect and hoard their knowledge. All possible barriers to effective knowledge sharing must be contained.
- There is a need to remove organisational barriers such as a lack of recognition and reward systems. The development and implementation of knowledge-driven rewards and recognition systems will assist to address the challenge. Rewards should assist to incentivise and shape the required KM behaviours.
- Organisationally, there is a need for knowledge-oriented leadership in the state-owned enterprises. Knowledge-oriented leadership should reflect and translate in real organisational structures, processes and strategies supporting knowledge management as the default management process to deal with knowledge loss reduction. In addition, knowledge-driven leadership should assist in the overall eradication of all organisational barriers to ensure that effective knowledge management practices are implemented.

#### **6.4.10 Alignment and integration of HRM practices in the management of organisational knowledge loss**

Based on the research findings, it is clear that there is a need to address the gaps to ensure a better alignment and integration of HRM practices in the management of knowledge loss. State-owned companies that do not have a KM strategy, should urgently develop such a strategy. The strategy should then be followed by structure. In the process, HRM practices need to be streamlined to KM processes that will boost knowledge creation capacity, knowledge absorptive capacity, and knowledge protective capacity and reduce knowledge stickiness.

To address the gaps, HR managers and leadership should create a better understanding of KM vocabulary, strategies and tools. Similarly, knowledge managers in the state-owned enterprises should make a concerted effort to learn and understand human resource management practices as they have a direct impact on the success of their strategies. Understanding the science behind the

two management disciplines will go long way at ensuring their success in managing organisational knowledge loss.

Knowledge management practices on their own cannot make a meaningful impact if they are not aligned to and supported by HRM practices. Leadership and management structures, together with HRM practitioners and knowledge management practitioners should establish strategic and operational partnerships. HR and KM practitioners should also raise an awareness of the important relationship between their practices, as the success of these practices hinges on this partnership and their joint collaborative efforts. The removal of existing silos between KM and HRM practitioners should be given urgent attention.

There is a need for a more integrated approach where everything pertaining management and retention is centrally coordinated and supported by human resource management practices. HR managers should map out their roles in all knowledge management processes. From the research findings, it became clear that knowledge management practices could be better managed if knowledge management is structurally infused or located within HR organisational structures. State-owned enterprises should make KM part of their organisational culture with HR leading practices to ensure it is embedded in the organisational culture and structures. On the whole, HR managers need to reflect on their practices in the context of organisational knowledge loss. Knowledge managers should do the same. Lastly, in order to effectively manage knowledge risks associated with the loss of firm-specific human and knowledge resources, knowledge management practitioners should collaborate with human resource managers. Both human resource managers and knowledge management practitioners should become strategic partners in the management of organisational knowledge to avoid its loss. Such strategic partnerships would require regular interactions and reporting on key knowledge management issues for the benefit of their organisations.

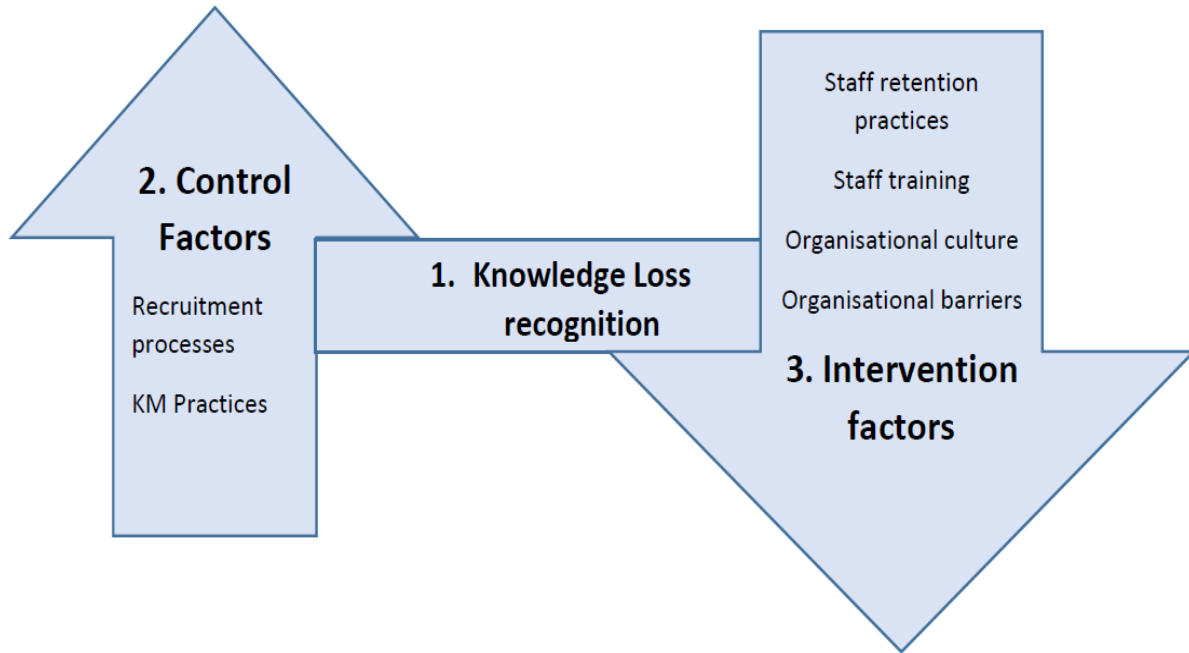
## **6.5 Proposed framework**

The main purpose of the study was to develop a framework for the reduction of knowledge loss by integrating HRM and KM practices. The study determined that knowledge loss was mainly caused by voluntary turnover in the form of resignations, and involuntary turnover in the form of the retirements resulting from an ageing workforce and a lack of retention strategies. The study revealed that 67% (6) of the state-owned enterprises lack dedicated KM structures, strategy and roles. A smaller number of the state-owned enterprises had KM institutionalised in their organisational structures and culture, but many of their HR practices were not mapped to support knowledge management systems. In addition, the study revealed that in the majority of state-owned enterprises, several knowledge management practices were absent. These practices were: coaching and mentoring practices, programmes for retiring knowledge workers, succession planning, knowledge harvesting, job rotations, and job shadowing.

The study also revealed that HRM practices played a crucial facilitation and supportive role in knowledge management. In general, in most of the state-owned enterprises HRM practices were found to be ineffective in supporting KM. Recruitment, and training and development practices were found to be knowledge-centric and positively contributing to knowledge absorptive capacity and knowledge creation capacity, whereas a lack of retention strategies was negatively affecting knowledge protective capacity and knowledge management capacity. A lack of knowledge-driven reward and recognition systems and other KM practices contributed to knowledge stickiness.

The study also revealed that in the state-owned companies an organisational culture of silos and red tape were barriers for effective knowledge management. The proposed framework for knowledge loss reduction (see Figure 30 below) is not intended to be dictatorial but the intention is to help state-owned enterprises to integrate human resource management and knowledge management practices.

Note: The unbalanced sizes of the arrows have no significance, the arrows were sized to accommodate the content.



**Figure 30: Knowledge loss reduction framework**

The derived framework for knowledge loss reduction has three key factors. The findings of the chi-square for independence and logistic regression revealed the realisation or recognition of knowledge loss as key strategic issue, and together with control factors and intervention factors, it formed the three key elements of the framework. The arrows of the control and intervention factors indicate the direction of influence. Where control factors increase recognition or realisation of issues associated with knowledge loss and intervention factors reduce knowledge loss issues. The difference between the control and intervention factors is guided by the stages at which they feature on the framework. The control factors feature at the face/initial stage of the framework and they ensure that the required knowledge is recruited to the organisation. The intervention factors are aimed at ensuring the recruited knowledge does not leave the organisation.

### **1. Recognition of knowledge loss as a key strategic issue**

Reduction of knowledge loss is only possible if state-owned companies recognise knowledge loss as a strategic issue. The framework for integrating human resource management and knowledge management practices for the reduction of knowledge loss indicates that recognition of knowledge loss (as key organisational issue) should be at the heart of any integration effort. It is for this reason that state-owned companies should prioritise their firm-specific knowledge and human resources in their business strategy as sources of sustainable competitive advantage. For that to happen, the loss of organisational knowledge should be treated as a key organisational issue. Once there is such level of recognition, the framework proposes that the control factors can be applied to control the loss of knowledge.

### **2. Control factors**

The control factors increase the realisation of the issue associated with knowledge loss and are applied to control it. In this case, recruitment processes that put an emphasis on the overall fit, in terms of personality, values and norms, increase recognition of knowledge loss at the entry stage by 2.2 times. In other words, the results indicated that companies that have recruitment processes that support knowledge management activities, recognise knowledge loss twice as much compared to companies with recruitment processes that do not support knowledge management. In addition, the recognition of knowledge loss is almost three times more for companies that do have knowledge management practices. These are control factors, since they allow for the recognition of knowledge loss. It should be noted that even if the control factors are applied effectively, there will be unforeseen circumstances that will lead to knowledge loss. It is therefore also crucial for state-owned companies to include intervention factors in their knowledge loss framework.

### **3. Intervention factors**

After the realisation or recognition of knowledge loss and control of knowledge loss causes, intervention factors are applied to reduce knowledge loss. Staff retention practices, staff training and development practices, organisational culture and organisational barriers as intervention factors need to be addressed and applied to reduce knowledge loss. In other words, state-owned

companies should invest in these intervention factors in order to reduce knowledge loss. The study established that retention practices are problem areas that require attention. There is a need to implement knowledge-driven compensation and rewards systems for the retention of firm-specific human and knowledge resources. That will go long way in facilitating knowledge protection capacity and reducing knowledge stickiness.

The state-owned enterprises should continue investing in knowledge-driven training and development practices and should offer employees opportunities to regularly update their skills and knowledge. It is through training and developing employees that new knowledge is acquired, assimilated and created. Training and development practices, therefore, contribute to knowledge creation and increase knowledge absorptive capacity in the state-owned enterprises.

Moreover, organisational culture need some intervention. The role of HRM practices in facilitating organisational knowledge-driven culture cannot be overemphasised. Human resource management practices could shape, drive and reinforce organisational values, norms and behaviours towards organisational knowledge-driven culture. Knowledge-driven culture is about embedding organisational values, attitudes and behaviours that promote knowledge creation, application, sharing and retention. Organisational culture could provide a critical, but non-physical infrastructure for effective knowledge management if it is aligned and if it drives the required knowledge-related behaviours and initiatives.

Organisational barriers such as knowledge hoarding, silo mentality, bureaucracy and red tape, and lack of knowledge leadership affect knowledge stickiness, thus hindering knowledge flows in organisations. To address this in the intervention stage, the state-owned companies should break down organisational barriers associated with a silo mentality, knowledge hoarding, lack of KM processes, roles and systems, and red tape. Furthermore, all organisational barriers impacting on the effective management and reduction of knowledge loss should be addressed.

## **6.6 Implications for theory, policy and practice**

The research findings of this study may go a long way in influencing policies and strategies on human resource management and knowledge management praxis. If the recommendations of the



current study are taken into consideration, they could assist South African SOEs in reducing knowledge loss risks. The focus of the study was on HRM practices and KM practices in the knowledge loss reduction structure and may provide a basis for the better alignment and integration of these practices in practice. Both HRM and KM practitioners may need to refine their strategies, roles and policies. By using several theoretical and conceptual lenses, mainly associated with resourced-based and knowledge-based theories, several theoretical and contextual questions have been posed and answered, up to a point where organisational knowledge loss could be better managed. A framework for knowledge loss reduction that integrates HRM practices into knowledge management has been proposed. It is therefore expected that such a framework will assist state-owned enterprises in South Africa to reduce knowledge loss. Therefore, South African state-owned enterprises are encouraged to implement strategies and recommendations presented in the knowledge loss reduction framework.

## **6.7 Limitations and suggestions for future research**

Like in any other research activity, the current study has several limitations. The researcher acknowledges that the findings should be interpreted and used cautiously.

The limitations are outlined below:

a) The study was a cross-section study undertaken in South African state-owned enterprises. Therefore, the research findings of the study should be applied with caution in other types of organisations. Moreover, future research in this area of study could include a longitudinal type of research involving similar state-owned companies and in other sectors of the economy.

b) The study was restricted to state-owned companies listed in Schedule 2 (major public entities), 3A (national public entities) & 3B (national government enterprises) of the Public Finance Management Act (PFMA) (National Treasury, 2015). Consequently, the research findings should be interpreted cautiously by the state-owned companies operating in local and provincial governments. On that note, future research involving Schedule 1 state-owned companies and provincial state-owned companies is recommended.

c) As previously mentioned, the research data were gathered only in state-owned companies in specific South African economic sectors. The research was done in a South African context. Therefore, the research findings should not be generalised to other contexts, for instance to other countries and their sector-specific contexts. Readers should be careful when generalising the findings of any country-specific research to different national contexts. However, it is possible to generalise the research results to other state-owned companies in similar sectors. Similar future research may be conducted in other countries and in their industrial contexts.

d) The study involved nine state-owned companies in the qualitative phase and only three entities in the quantitative phase. The SOEs were selected from the developmental financial institutions sector, the service-oriented sector, the regulatory and compliance sector, the research and development (research councils) sector, and the water utility sector. Therefore, the researcher posits that the findings of the current study should be interpreted with caution by state-owned entities operating in other sectors such as the transportation sector, the energy sector, the information technology sector and the aviation sector, since these sectors were not part of the study.

e) The state capture phenomenon and the investigations of the state capture commission contributed to the limitations of the study, because many SOEs were reluctant to participate in the study due to a level of uncertainty and media attention. For that reason, more studies should be conducted in future to include state-owned companies from sectors that were not included in the current study.

f) The survey used in the study was restricted to only three state-owned companies. Therefore, the findings of the survey should also be interpreted cautiously. The sample size in the survey phase was relatively small because not all nine state-owned companies that participated in the first qualitative phase were willing to let their employees participate in the survey. The total number of respondents (employees and KM practitioners) in the survey phase was 145.

g) The national lockdown and regulations due to Covid-19 affected access to and much-needed follow-up interviews with the research participants. The prevailing circumstances at the time of

the quantitative data collection had proven difficult for the researcher to have follow-up discussions with participants. Thus, these limitations will be addressed in future studies with larger samples.

h) This study did not determine the relationship between the factors for knowledge loss reduction. The focus was on how these factors influence knowledge loss reduction. It is therefore for this reason that a future study is proposed to determine such relationship between the factors for knowledge loss reduction.

In summary, the researcher recommends that the proposed knowledge loss reduction framework be tested in other state-owned enterprises in order to establish causal relationships of variables with greater precision. The testing of the framework will also serve to validate or invalidate the relationship explained in the study.

## **6.8 Final conclusion**

This chapter provides the conclusions of the research findings. In the final conclusion, several recommendations were made to address the research findings of the study. To deal with the main causes of organisational knowledge loss such as voluntary turnover, involuntary turnover and lack of retention strategies, the researcher recommends that state-owned enterprises should prioritise the development of an employee retention strategy to mitigate knowledge loss risks. It is also recommended that state-owned enterprises should do more than just using the slogan “staff as importance resources” and invest more into retention strategies. The researcher concludes that such retention strategies will work only if there is a recognition of firm-specific human and knowledge resources as key strategic resources. Moreover, the researcher proposes that human resource management practices should be more knowledge-centric in facilitating knowledge management and the reduction of knowledge loss in the state-owned enterprises. In addition, the researcher recommends that knowledge-driven recruitment practices should be more proactive in sourcing the required knowledge and skills. These practices should do more to increase knowledge absorptive capacity. Similarly, on training and development practices, the researcher proposes investment in capacity-development opportunities with organisational

intentions to boost knowledge creation and knowledge absorptive capacity. Regarding retention practices, the researcher recommends that state-owned companies should develop employees' retention strategies that would facilitate retention of firm-specific knowledge resources. In that way, the retention strategies would serve to build and strengthen knowledge protective or retentive capacity.

When it comes to the challenges pertaining organisational culture, structure and barriers that affects effective knowledge management in the state-owned companies, the researcher proposes that HRM practices should play a crucial role in addressing all these contextual factors. Human resource management practices could shape, drive and reinforce organisational values, norms and behaviours towards organisational knowledge-driven culture. For that reason, the researcher recommends that HRM practitioners should carry out organisational culture assessments and employee engagement surveys to assess the state of readiness for embedding the required knowledge-related behaviours and cultures. To address the structural issues pertaining knowledge management, HR managers should lead the process of conceptualising knowledge management function, roles, and the development and assessment of job profiles. Knowledge-oriented leadership is needed to drive these structural issues from the top. Furthermore, all organisational cultural issues and contextual barriers should be addressed to ensure that knowledge sharing take place and knowledge stickiness is reduced. More investment in the area of knowledge management practices is needed to minimise the risks of knowledge loss. The consequences of the challenges highlighted in the study are dire; to such an extent that they threaten the performance and sustainability of the state-owned enterprises if they are not addressed. State-owned companies may not be able to deliver on their developmental mandate, if they allow a situation wherein firm-specific human and knowledge resources are not properly managed. It is for that reason that a framework is proposed as a baseline to assist them to integrate their human resource management and knowledge management practices to reduce the dire risks associated with losing much-needed, firm-specific human and knowledge resources.

## LIST OF REFERENCES

- Adams, G.L., & Lamont, B.T. 2003. Knowledge management systems and developing sustainable competitive advantage. *Journal of Knowledge Management*, 7(2):142-154. doi:10.1108/13673270310477342
- Afiouni, F. 2007. Human resource management and knowledge management: a road map toward improving organizational performance. *Journal of American Academy of Business*, 11(2):124-130.
- Akio, T. 2005. The critical assessment of the resource-based view of strategic management: the source of heterogeneity. *Ritsumeikan International Affairs Journal*, 3:125-150.
- Alawamleh, H.S., & Kloub, M.H. 2013. Impact of organizational structure on knowledge management in the Jordanian insurance companies: from the perspective of the supervisory leadership. *International Journal of Business and Social Science*, 4(11):82-95.
- Al-Ali, N. 2003. *Comprehensive intellectual capital management*. New York: John Wiley & Sons, Inc.
- Aliyu, A.A., Bello, M.U., Kasim, R., & Martin, D. 2014. Positivist and non-positivist paradigm in social science research: conflicting paradigms or perfect partners. *Journal of Management and Sustainability*, 4(3):79-95. doi:10.5539/jms.v4n3p79
- Alshanbri, N., Khalfan, M., Noor, M.A., Dutta, D., Zhang, K., & Maqsood, T. 2015. Employees' turnover, knowledge management and human resource management: a case of Nitaqat program. *International Journal of Social Science and Humanity*, 5(8):701-706. doi:10.7763/ijssh.2015.v5.543
- Alvi, M., & Tiwana, A. 2002. Knowledge integration in virtual teams: the potential role of kms. *Journal of the American Society for Information Science and Technology*, 52(12):1029-1037.
- Andersén, J. 2012. Protective capacity and absorptive capacity: managing the balance between retention and creation of knowledge-based resources. *The Learning Organization*, 19(5):440-452. doi:10.1108/09696471211239730

- Andersén, J. 2015. The absorptive capacity of family firms: how familiness affects potential and realised absorptive capacity. *Journal of Family Business Management*, 5(1):73-89. doi:10.1108/jfbm-05-2014-0012
- Andreeva, T., Vanhala, M., Sergeeva, A., Ritala, P., & Kianto, A. 2017. When the fit between HR practices backfires: exploring the interaction effects between rewards for and appraisal of knowledge behaviours on innovation. *Human Resource Management Journal*, 27(2):209-227. doi:10.1111/1748-8583.12133
- Andreeva, T., & Kianto, A. 2012. Does knowledge management really matter? linking knowledge management practices, competitiveness and economic performance. *Journal of Knowledge Management*, 16(4):617-636. doi:10.1108/13673271211246185
- Antonelli, C., Amidei, F.B., & Fassio, C. 2014. The mechanisms of knowledge governance: State-owned enterprises and Italian economic growth, 1950-1994. *Structural Change and Economic Dynamics*, 31:43-63. doi:10.1016/j.strueco.2014.08.004
- Appelbaum, S.H., Gunkel, H., Benyo, C., Ramadan, S., Sakkal, F., & Wolff, D. 2012. Transferring corporate knowledge via succession planning: analysis and Solutions - part 1. *Industrial & Commercial Training*, 44(5):281-289. doi:10.1108/00197851211245031
- Argote, L. & Ingram. 2000. Knowledge transfer: a basis for competitive advantage in firms. *Organizational Behaviour and Human Decision Processes*, 82(1):150-169. doi:10.1006/obhd.2000.2893
- Armstrong, M. 2009. *Armstrong's handbook of human resource management practice*. London: Kogan Page.
- Armstrong, M. 2006. *A handbook of human resource management practice*. 10<sup>th</sup> ed. London: Kogan Page
- Arunprasad, P. 2017. Inevitable knowledge strategy: a paradigm shift in strategic HRM practices to augment firm's performance. *Employee Relations*, 39(5):753-774. doi:10.1108/er-01-2016-0006
- Ashworth, M.J. 2006. Preserving knowledge legacies: workforce aging, turnover and human resource issues in the US electric power industry. *International Journal of Human Resource Management*, 17(9):1659-1688. doi:10.1080/09585190600878600

- Attar, M.M. 2020. Organisational culture, knowledge sharing, and intellectual capital: directions for future research. *International Journal of Business and Economic Research*, 9(1):11-20. doi:10.11648/j.ijber.20200901.12
- Aziri, B., Veseli, N., & Ibraimi, S. 2013. Human resources and knowledge management. *Management, Knowledge and Learning International Conference*, 19-21 June: 1037-1043.
- Ayatollah, H., & Zeraatkar, H. 2019. Factors influencing the success of knowledge management process in health care organisations: a literature review. *Health Information & Libraries Journal*, 37:98-117. doi:10.1111/hir.12285
- Babbie, E., & Mouton, J. 2001. *The practice of social research*. Cape Town: Oxford University Press.
- Barney, J. 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17(1):99-120.
- Barney, J. 2001. Is the resource-based view a useful perspective for strategic management research? yes. *Academy of Management Review*, 26(1):41-56.
- Barney, J., Wright, M., & Ketchen, D.J. 2001. The resource-based view of the firm: ten years after 1991. *Journal of Management*, 27:625-641. doi:10.1177/014920630102700601
- Batchelor, J.A., & Briggs, C.M. 1994. Subject, project or self? thoughts on ethical dilemmas for social and medical researchers. *Social Science & Medicine*, 39(7):949-954.
- Baxter, P., & Jack, S. 2008. Qualitative case study methodology: study design and implementation for novice researchers. *The Qualitative Report*, 13(4):544-559.
- Becerra-Fernandez, I. 2010. *Knowledge management: systems and processes*. Armonk: M.E. Sharpe.
- Becerra-Fernandez, I., Gonzalez, A., & Sabherwal, R. 2004. *Knowledge management: challenges, solutions and technologies*. Upper Saddle River: Pearson Prentice Hall.
- Becerra-Fernandez, I., & Sabherwal, R. 2015. *Knowledge management: systems and processes*, 2<sup>nd</sup> ed. New York: Routledge.
- Bedeian, A.G. & Armenakis, A.A. 1998. The cesspool syndrome: how dreck floats to the top of declining organisations. *Academy of Management Executive*, 12(1):58-63.
- Bell, Y. 2005. *Doing your research project*. New York: Open University Press.

- Belle, S.M. 2020. Reflections: mentoring in knowledge management for development. *Knowledge Management for Development Journal* 15(1):109-115.
- Benassi, M., & Landoni, M. 2017. State-owned enterprises as knowledge explorer agents. *Industry and Innovation*, 26(2):218-241. doi:10.1080/13662716.2018.1529554
- Bender, S., & Fish, A. 2000. The transfer of knowledge and the retention of expertise: the continuing need for global assignments. *Journal of Knowledge Management*, 4(2): 125-137.
- Bergman, M.M. 2008. 5 methodological issues in conducting mixed methods research designs, in Bergman, M.M. (ed). *Advances in mixed methods research: theories and applications*. Thousand Oaks, CA: Sage. 66-84.
- Bernard, H.R. 2013. *Social research methods: qualitative and quantitative approaches*. 2<sup>nd</sup> ed. London: Sage Publications Ltd.
- Biesta, G. 2010. Pragmatism and the philosophical foundations of mixed methods, in Tashakkori A., & Teddlie, C. *Mixed methods in social and behavioural research*, 2<sup>nd</sup> ed. Thousand Oaks, CA: Sage. 95-117.
- Blacker, F. 1995. Knowledge, knowledge work and organizations: an overview and interpretation. *Organization Studies*, 16(6):1021-1046.
- Blankley, K.M., Maharajh, W., Pogue, R., Reddy, T.E., Cele, V., & Du Toit, M. 2004. *Flight of the flamingos: a study on the mobility of R&D workers*. Cape Town: HRSC.
- Blaxter, L.; Hughes, C., & Tight, M. 2002. *How to research*. 2<sup>nd</sup> ed. New Delhi: Viva Books Private Limited.
- Bless, C. & Higson-Smith, C. 1995. *Fundamentals of social research methods: an African perspective*. 2nd ed. Cape Town: Juta and Co. Ltd.
- Blomqvist, K. & Kianto, A. 2015. Knowledge-based view of the firm – theoretical notions and implications for management. Available at <https://www.lut.fi/documents/10633/109602/tijo-valintakoeartikkeli-2015.pdf>. (Accessed 15 December 2017).
- Bloomberg, L.D., & Volpe, M. 2008. *Completing your qualitative dissertation: a roadmap from the beginning to end*. Los Angeles: SAGE Publications.
- Bordeianu, O., & Buta, S. 2015. Linking human resources strategy with knowledge



- management strategy to drive measurable results. *The USV Annals of Economics and Public Administration*, 15(1):169-175.
- Bordeianu, O. 2015. The role of knowledge management and knowledge management strategies within learning organizations. *Ecoforum*, 4(1):147-154.
- Boisot, M. 1999. *Knowledge assets – securing competitive advantage in the information economy*. Oxford: Oxford University Press.
- Bousa, R., & Venkitachalam, K. 2013. Aligning strategies and processes in knowledge management: a framework. *Journal of Knowledge Management*, 17(3):331-346.  
doi:10.1108/jkm-10-2012-0323
- Boxal, P., & Purcel, J. 2008. *Strategy and human resource management*. New York: Palgrave Macmillan.
- Braun, V., & Clarke, V. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2):77-101.
- Brown, J.S., & Duguid, P. 2001. Knowledge and organization: a social-practice perspective. *Organization Science*, 12(2):198-213.
- Bryman, A. 2012. *Social research methods*. 4<sup>th</sup> ed. New York: Oxford University Press.
- Bryman, A. 2008a. Quality criteria for quantitative, qualitative and mixed methods research: a view from social policy. *International Journal of Social Research Methodology*, 11(4):261-276.
- Bryman, A. 2008b. Why do researchers integrate/combine/mesh/blend/mix/merge/fuse quantitative and qualitative research, in Bergman, M.M. *Advances in Mixed Methods Research*. London: Sage Publications Ltd. 86-100.
- Bryman, A. 2007. Barriers to integrating quantitative and qualitative research. *Journal of Mixed Methods Research*, 1:8-22.
- Bryman, A. 2006. Paradigm peace and the implications for quality. *International Journal of Social Research Methodology*, 9:111-126.
- Burton, N., Brundrett, M., & Jones, M. 2008. *Doing your education research project*. Los Angeles: Sage.
- Buta, S. 2015. Human capital theory and human resource management: implications in development of knowledge management strategies. *ECOFORUM*, 4(1):155-162.

- Brewerton, P., & Millward, L. 2001. *Organisational research methods: a guide for students and researchers*. London: Sage.
- Cabrera, E.F., & Cabrera, A. 2005. Fostering knowledge sharing through people management practices. *International Journal of Human Resource Management*, 16(5):720-735.
- Carlin, A.P. 2003. Disciplinary debates and bases of interdisciplinary studies: the place of research ethics in library and information science. *Library & Information Science Research*, 25:3-18.
- Calo, T.J. 2008. Talent management in the era of the aging workforce: the critical role of knowledge transfer. *Public Personnel Management*, 37(4):403-416.
- Camelo-Ordaz, C., Garcia-Cruz, J., Sousa-Ginel, E., & Valle-Cabrera, R. 2011. The influence of human resource management on knowledge sharing and innovation in Spain: the mediating role of affective commitment. *International Journal of Human Resource Management*, 22(7):1442-1463.
- Carter, C., & Scarbrough, H. 2001. Towards a second generation KM? the people management challenge. *Education + Training*, 43(4/5):215-224.
- Caruth, G.D. 2013. Demystifying mixed methods research: a review of the literature. *Mevlana International Journal of Education*, 3(2):112-122.
- Cascio, W. F. 1993. Downsizing: What do we know? what have we learned? *Academy of Management Executive*, 7(1): 95-104.
- Castleberry, A., & Nolen, A. 2018. Thematic analysis of qualitative research data: is it as easy as it sounds? *Currents in Pharmacy Teaching and Learning*, 10:807-815. doi:10.1016/j.cptl.2018.03.019
- Chadwick, C., Hunter, L.W.; & Walston, S. L. 2004. Effects of downsizing practices on the performance of hospitals. *Strategic Management Journal*, 25(5):405-427.
- Chaita, M.V., & Sibanda, W. 2021. The role of knowledge in enhancing SMME innovation: the case of Knowsley – Northwest Region of England. *International Journal of Knowledge Management*, 17(1):93-112. doi:10.4018/ijkm.2021010106
- Chang, C.L., & Lin, T. 2015. The role of organisational culture in the knowledge management process. *Journal of Knowledge Management*, 19(3):433-455. doi:10.1108/jkm-08-2014-0353

- Chang, Y., & Smale, A. 2013. Expatriate characteristics and the stickiness of HRM knowledge transfers. *The International Journal of Human Resource Management*, 24(12):2394-2410. doi:10.1080/09585192.2013.781436
- Chang, Y.C, & Polachek, S.W. 2004. Conflict and trade: the relationship between distance and international interactions. *Journal of Socio-Economics*, 33:491-509.
- Charmaz, K. 2002. Qualitative interviewing and grounded theory analysis, in Gubrium, J.F. and Holstein, J.A (eds.). *Handbook of interview research: context and method*. London: Sage Press. 675-676.
- Chaterera, F. 2017. *A framework for access and use of documentary heritage at the National Archives of Zimbabwe*. Doctoral thesis: University of South Africa.
- Chen, Y.Y., & Young, M.N. 2010. Cross-border mergers and acquisitions by Chinese listed companies: a principal-principal perspective. *Asia Pacific Journal of Management*, 27(3):523-539.
- Chmiliar, L. 2010. Multiple-case designs, in Mills, A.J., Durepos, G., & Wiebe, E. *Encyclopedia of case study research*. Thousand Oaks: Sage Publications, Inc. 583-584.
- Chilisa, B., & Kawulich, B. 2012. Selecting a research approach: paradigm, methodology and methods, in Wagner, C., Kawulich, B., & Gartner, M. *Doing social research: a global context*. New York: McGraw-Hill.
- Chisholm, A.M., & Nielsen, K. 2009. Social capital and the resource-based view of the firm. *International Studies of Management & Organization*, 39(2): Unlocking Social Capital (Summer):7-32.
- Chuang, C., Jackson, S.E., & Jiang, Y. 2016. Can knowledge-intensive teamwork be managed? examining the roles of HRM systems, leadership, and tacit knowledge. *Journal of Management*, 42(2):524-554. doi:10.1177/0149206313478189
- Chugh R. 2015. Do Australian universities encourage tacit knowledge transfer? *Proceedings of the 7th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management*, 128-135.
- Cohen, W.M., & Levinthal, D.A. 1990. Absorptive capacity: a new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1):128-152.

- Collins, K.M.T. 2010. Advanced sampling designs in mixed research: current practices and emerging trends in social and behavioural sciences, in Tashakkori A., & Teddlie, C. *Mixed methods in social and behavioural research*. 2<sup>nd</sup> ed. Thousand Oaks, CA: Sage, 353-377.
- Columbia Electronic Encyclopedia. 6<sup>th</sup> ed. 2011. Utility, public, p1-2. Available at [http://www.columbia.edu/~daviss/work/files/archive/ce\\_orig.html](http://www.columbia.edu/~daviss/work/files/archive/ce_orig.html) (Accessed 02 May 2019)
- Conner, K., & Prahalad, C. 2002. A resource-based theory of the firm, in Choo and Bontis (eds). *The strategic management of intellectual capital and organizational knowledge*. New York: Oxford University Press. 103-131.
- Creswell, J.W. 2015. *A concise Introduction to mixed methods research*. Los Angeles: Sage.
- Creswell, J.W. 2014. *Research design: qualitative, quantitative and mixed methods approaches*. 4th ed. Los Angeles: Sage.
- Creswell, J.W. 2013. *Qualitative inquiry and research design: choosing among five approaches*. Thousand Oaks, CA: Sage.
- Creswell, J.W. 2012. *Educational research: planning, conducting, and evaluating quantitative and qualitative research*. 4th ed. Boston: Pearson.
- Creswell, J.W. 2010. Mapping the developing landscape of mixed methods research, in Tashakkori A., & Teddlie, C. *Mixed methods in social and behavioural research*, 2nd ed. Thousand Oaks, CA: Sage. 45-68.
- Creswell, J.W. 2009. *Research design: qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage Publications.
- Creswell, J.W. 2008. *Educational research: planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Pearson Education.
- Creswell, J.W., & Creswell, J.D. 2018. *Research design: qualitative, quantitative & mixed methods approaches*. 5th ed. Los Angeles: Sage.
- Creswell, J.W., & Garrett, A. L. 2008a. The “movement” of mixed methods research and the role of educators. *South African Journal of Education*, 28:321-333.
- Creswell, J.W., & Plano Clark, V.L. 2018. *Designing and conducting mixed methods research*. 3rd ed. Los Angeles: Sage.

- Creswell, J.W., & Plano Clark, V.L. 2011. *Designing and conducting mixed methods research*. 2nd ed. Thousand Oaks, CA: Sage.
- Creswell, J.W., & Plano Clark, V.L. 2007. *Designing and conducting mixed methods research*. Thousand Oaks, California: SAGE Publications.
- Creswell, J.W., Plano Clark, V.L., & Garrett, A.L. 2008b. Methodological issues in conducting mixed methods research designs, in Bergman, M.M. (ed), *Advances in mixed methods research: theories and applications*. Thousand Oaks, CA: Sage, 66-83.
- Cronholm, S., & Hjalmarsson, A. 2011. Experiences from sequential use of mixed methods. *The Electronic Journal of Business Research Methods*, 9(2):87-95.
- Crouch, M., & McKenzie. 2006. The logic of small samples in interview-based qualitative research. *Social Science Information*, 45(4):483-499.
- Crowe, S., Creswell, K., Robertson, A., Huby, G., Avery, A., & Sheik, A. 2011. The case study approach. *BMC Medical Research Methodology*, 1-9.
- Curado, C. 2006. *The knowledge based-view of the firm: from theoretical origins to future implications*. Working Paper Series.
- Curado, C., & Bontis, N. 2006. The knowledge-based view of the firm and its theoretical precursor. *International Journal of Learning and Intellectual Capital*, 3(4):367-381.
- Currie, G., & Kerrin, M. 2003. Human resource management and knowledge management: enhancing knowledge sharing in a pharmaceutical company. *International Journal of Human Resource Management*, 14(6):1027-1045.
- Daghfous, A., Belkhdja, O., & Angell, L.C. 2013. Understanding and managing knowledge loss. *Journal of Knowledge Management*, 17(5):639-660.
- Dalkir, K. 2020. The role of human resources (HR) in tacit knowledge sharing. in Information Resources Management Association. *Information Diffusion Management and Knowledge Sharing: Breakthroughs in Research and Practice*. United States: IGI Global. 490-512. doi:10.4018/978-1-7998-0417-8.ch024
- Davenport, T., & Prusak, L. 1998. *Working knowledge*. Cambridge: Harvard Business School Press.
- Davenport, T. H., Salvatore, P., & Cross, R. 2006. Strategies for preventing a knowledge loss crisis. *MIT Sloan Management Review*, 47(4):31-38.

- Davis, J. 2018. Knowledge loss: turnover means losing more than employees. HR Management & Compliance. Available at <https://hrdailyadvisor.blr.com/2018/07/18/knowledge-loss-turnover-means-losing-employees/>. (Accessed 30 September 2020).
- de Almeida, F.C., Lesca, H., & Canton, A.W.P. 2016. Intrinsic motivation for knowledge sharing – competitive intelligence process in a telecom company. *Journal of Knowledge Management*, 20(6):1282-1301. doi:10.1108/jkm-02-2016-0083
- Delery, J.E., & Roumpi, D. 2017. Strategic human resource management, human capital and competitive advantage: is the field going in circles. *Human Resource Management Journal*, 27(1):1-21. doi:10.1111/1748-8583.12137
- DeLong, D. 2004. *Lost knowledge: confronting the threat of an aging workforce*. Oxford: Oxford University Press.
- DeLong, D., & Fahey, L. 2000. Diagnosing cultural barriers to knowledge management. *Academy of Management Executive*, 14(4):113-127.
- DeNisi, A., Hitt, M., & Jackson, S. 2003. The knowledge-based approach to sustainable competitive advantage, in Jackson, S. Hitt, M., & DeNisi. *Managing knowledge for sustained competitive advantage*. San Francisco: Jossey-Bass, 3-33.
- Denzin, N. K. 2012. Traingulation 2.0. *Journal of Mixed Methods Research*, 6(2):80-88.
- Denzin, N.K., & Lincoln, Y.S. 2011. *The Sage handbook of qualitative research*. 4<sup>th</sup> ed. Thousand Oaks, California: Sage Publications, Inc.
- Denzin, N.K., & Lincoln Y.S. 2005. *The Sage handbook of qualitative research*. 3<sup>rd</sup> ed. Thousand Oaks, California: Sage Publications, Inc.
- Dessler, G. 2015. *Human resource management*, 4<sup>th</sup> edition. Boston: Pearson.
- Desouza, K.C., & Paquette, S. 2011. *Knowledge management: an introduction*. London: Facet Publishing.
- De Vos, A.S., Strydom, H., Fouche, C.B., & Delpont. 2002. *Research as grassroots: for the social science and human service professions*. Pretoria: Van Schaik Publishers.
- Dikotla, M.A. 2019. Knowledge sharing in selected municipalities of Limpopo Province, South Africa. *SA Jnl Libs & Info Sci*, 85(1):1-11. doi:10.7553/85-1-1808

- DNA Economics. 2020. *The 2020 List of Occupations in High Demand: A Technical Report. Produced for the Department of Higher Education and Training (DHET) as part of its Labour Market Intelligence (LMI) research programme.* Available at <https://www.dhet.gov.za/SiteAssets/Latest%20News/November%202020/The%202020%20List%20of%20Occupations%20in%20High%20Demand-%20A%20Technical%20Report.pdf> (Accessed 18 May 2021)
- Donate, M.J., & Guadamillas, F. 2011. Organisational factors to support knowledge management and innovation. *Journal of Knowledge Management*, 15(6):890-914.  
doi:10.1108/13673271111179271
- Donate, M.J., & Guadamillas, F. 2015. An empirical study on the relationships between knowledge management, knowledge-oriented human resources practices and innovation. *Knowledge Management Research & Practice*, 13(2):134-148.  
doi:10.1057/kmrp.2013.36
- Donate, M.J., & de Pablo, J.D.S. 2015. The role of knowledge-oriented leadership in knowledge management practices and innovation. *Journal of Business Research*, 68:360–370.  
doi:10.1016/j.jbusres.2014.06.022
- Dörhöfer, S. 2012. Knowledge-based HRM: an integrative approach. *European Journal of Social Sciences*, 28(4):473-488.
- Drucker, P.F. 1993. *The practice of management*. New York: Harper & Brothers.
- Durst, S., & Zieba, M. 2020. Knowledge risks inherent in business sustainability. *Journal of Cleaner Production*, 251:1-10. doi:10.1016/j.jclepro.2019.119670
- Durst, S., Lindvall, B., & Bruns, G. 2020. Knowledge risk management in the public sector: insights into a Swedish municipality. *Journal of Knowledge Management*, 24(4):717-735.  
doi:10.1108/jkm-12-2017-0558
- Durst, S. 2019. How far have we come with the study of knowledge risks? *VINE Journal of Information and Knowledge Management Systems*, 49(1):21-34. doi:10.1108/vjikms-10-2018-0087
- Durst, S. 2018. Knowledge risks in the sharing economy, in Vătămănescu EM., Pînzaru F. (eds) *Knowledge Management in the Sharing Economy*. Cham: Springer. 258-270.  
doi:10.1007/978-3-319-66890-1\_13

- Durst, S., Brun, G., & Henschel, T. 2018. The management of knowledge risks: what do we really know? in Information Resources Management Association. *Global business expansion: concepts, methodologies, tools, and applications*. USA: IGI Global.  
doi:10.4018/978-1-5225-5481-3.ch013
- Durst, S., Hinteregger, C., & Zieba, M. 2019. The linkage between knowledge risk management and organizational performance. *Journal of Business Research*, 105:1–10.  
doi:10.1016/j.jbusres.2019.08.002
- Durst, S., Mention, A.L., & Poutanen, P. 2015. Service innovation and its impact: what do we know about? *Economía de la Empresa*, 21(2): 65-72. doi:10.1016/j.iedee.2014.07.003
- Durst, S., & Zieba, M. 2019. Mapping knowledge risks: towards a better understanding of knowledge management. *Knowledge Management Research & Practice*, 17(1):1–13.  
doi:10.1080/14778238.2018.1538603
- Durst, S., & Zieba, M. 2018. Mapping knowledge risks: towards a better understanding of knowledge management. *Knowledge Management Research and Practice*, 17(1-13).  
doi:10.1080/14778238.2018.1538603
- Durst, S., & Ferenhof, H.A. 2014. Knowledge leakages and ways to reduce them in small and medium-sized enterprises (SMEs). *Information*, 5:440-450. doi:10.3390/info5030440
- Durst, S., & Wilhelm, S. 2012. Knowledge management and succession planning in SMEs. *Journal of Knowledge Management*, 16(4):637-649. doi:10.1108/13673271211246194
- Durst, S., & Wilhelm, S. 2011. Knowledge management in practice: insights into a medium-sized enterprise's exposure to knowledge loss. *Prometheus*, 29(1):23-38. doi:10.1080/08109028.2011.565693
- Dychtwald, K., Erickson, T. J., & Morison, R.2006. *Workforce crisis: how to beat the coming shortage of skills and talent*. Boston: Harvard Business School Press.
- Dzenopoljac, V., Alasadi, R., Zaim, H., & Bontis, N. 2018. Impact of knowledge management processes on business performance: evidence from Kuwait. *Knowledge Process Management*, 25:77-87. doi:10.1002/kpm.1562
- Eckardt, R., Skaggs, B.C., & Youndt, M. 2014. Turnover and knowledge loss: an examination of differential impact of production manager and worker turnover in service and



- manufacturing firms. *Journal of Management Studies*, 51(7):1025-1057. doi:10.1111/joms.12096
- Edvardson, I.R. 2008. HRM and knowledge management. *Employee Relations*, 30(5):553-561.
- Eisenhardt, K.M., & Santos, F.M. 2002. Knowledge-based view: a new theory of strategy, in Pettigrew, A., Thomas, H., & Whittington, R. *Handbook of Strategy and Management*. London: Sage Publications Ltd, 139-164.
- El-Farr, H., & Hosseingholizadeh, R. 2019. Aligning human resource management with knowledge management for better organizational performance: how human resource practices support knowledge management strategies?, in *Current Issues in Knowledge Management*. Available at: <https://www.intechopen.com/books/current-issues-in-knowledge-management/aligning-human-resource-management-with-knowledge-management-for-better-organizational-performance-h> (Accessed 08 August 2020).
- Elfring, T., & De Man, A. 1998. Theories of the firm, competitive advantage and government policy. *Technology Analysis & Strategic Management*, 10(3):283-293.
- Ensslin, L., Mussi, C.C., Ensslin, S.R., Dutra, A., & Fontana, L.P.B. 2020. Organizational knowledge retention using a constructivist multi-criteria model. *Journal of Knowledge Management*, 24(5):985-1004. doi:10.1108/jkm-12-2019-0689
- Erasmus, J., & Breier, M. 2008. *Skills and shortages in South Africa*. Pretoria: HSRC Press.
- Figueiredo, E., Pais, L., Monteiro, S., & Mónico, S. 2016. Human resource management impact on knowledge management: Evidence from the Portuguese banking sector. *Journal of Service Theory and Practice*, 26(4):497-528. doi:10.1108/jstp-12-2014-0269
- Fisher, S.R., & White, M. A. 2000. Downsizing in a learning organisation: are there hidden costs? *Academy of Management Review*, 25(1):244-251.
- Florentine, S. 2019. Employee retention: 8 strategies for retaining top talent. Available at: <https://www.cio.com/article/2868419/how-to-improve-employee-retention.html> (Accessed 16 December 2020).
- Fong, C., Ooi, K., Tan, B., Lee, V., & Chong, A. Y. 2011. HRM practices and knowledge sharing: an empirical study. *International Journal of Manpower*, 32(5/6):704-723.

- Foss, N.J., Pedersen, T., Reinholt Fosgaard, M., & Stea, D. 2015. Why complementary HRM practices impact on performance: the case of rewards, job design, and work climate in a knowledge-sharing context. *Human Resource Management*, 54(6):955-976. doi:10.1002/hrm.21649
- Foss, N.J., & Knudsen, T. 2003. The resource-based tangle: towards a sustainable explanation of competitive advantage. *Managerial and Decision Economics*, 24: 291-307.
- Fourie, D. 2014. The role of public sector enterprises in the South African economy. *African Journal of Public Affairs*, 7(1):30-40.
- Fraser, K. 2014. Defeating the ‘paradigm wars’ in accounting: a mixed-methods approach is needed in the education of PhD scholars. *International Journal of Multiple Research Approaches*, 8(1):49-62. doi:10.5172/mra.2014.8.1.49
- Friese, S., Soratto, J., & Pires, D. 2018. Carrying out a computer-aided thematic content analysis with ATLAS.ti. *MMG Working Paper* 18-02. Available at [www.mpg.de/workingpapers](http://www.mpg.de/workingpapers) Accessed 22 September 2020.
- Friese, S. 2019. *Qualitative Data Analysis with ATLAS.ti*. 3. ed. London: Sage.
- Friese, S. 2014. *Qualitative Data Analysis with ATLAS.ti*. 2. ed. London: Sage.
- Gagne, M. 2009. A model of knowledge-sharing motivation. *Human Resource Management*, 48(4):571-589. doi:10.1002/hrm.20298
- Galabova, L., & Ahonen, G. 2011. Is intellectual capita-based strategy market-based or resource-based? on sustainable strategy in a knowledge-based economy. *Journal of Human Resource Costing & Accounting*, 15(4):313-327. doi:10.1108/14013381111197243
- Goffin, K., & Koners, U. 2011. Tacit Knowledge, lessons learnt and new product development. *Journal of Product Innovation Management*, 28(2):300–318.
- Gope, S., Elia, G., & Passiante, G. 2018. The effect of HM practices on knowledge management capacity: a comparative study in Indian IT industry. *Journal of Knowledge Management*, 22(3):649-677. doi:10.1108/jkm-10-2017-0453
- Goh, S.C. 2002. Managing effective knowledge transfer: an integrative framework and some practice implications. *Journal of Knowledge Management*, 6(1): 23-30. doi:10.1108/13673270210417664

- Grant, R.M. 1996. Towards a knowledge-based theory of the firm. *Strategic Management Journal*, 17(Winter special issue):109-122.
- Grant, R.M. 1997. The Knowledge-based view of the firm: implications for management practice. *Long Range Planning*, 30(3):450-454.
- Gray, D.E. 2009. *Doing research in the real world*. London: Sage.
- Green, H. 2014. Use of theoretical and conceptual frameworks in qualitative research. *Nurse Researcher*, 21(6):34-38. doi:10.7748/nr.21.6.34.e1252
- Greene, J.C. 2008. Is mixed methods social inquiry a distinctive methodology? *Journal of Mixed Methods Research*, 2(1):7-22.
- Greene, J.C. 2007. *Mixing methods in social inquiry*. San Francisco: Jossey-Bass.
- Greene, J.C.; Caracelli, V. J. & Graham, W. F. 1989. Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis*, 11:255-274.
- Grimshaw, D., & Miozzo, M. 2009. New human resource management practices in knowledge-intensive business service firms: The case of outsourcing with staff transfer. *Human Relations*, 62(10):1521-1550. doi:10.1177/0018726709336498
- Grinnell, R.M. (1997). *Social work research and evaluation; quantitative and qualitative approaches*. Ithaca: Peacock.
- Guba, E.G., & Lincoln, Y.S. 1994. Competing paradigms in qualitative research, in Denzin, N., & Lincoln, Y.S. (eds). *Handbook of qualitative research*. Thousand Oaks: CA: Sage. 112-133.
- Guest, G. 2012. Describing mixed methods research: an alternative to typologies. *Journal of Mixed Methods Research*, 7(2): 141–151.
- Guestzkow, J., Lamont, M., & Mallard, G. 2004. What is originality in the humanities and the social sciences? *American Sociological Review*, 69:190-212.
- Gumede, W., Govender, M., & Motshidi, K. 2011. The role of South Africa's state-owned development finance institutions (DFIs) in building a democratic developmental state. *Policy Brief*, 3:1-8.
- Gupta, A., & Govindarajan, V. 2000. Knowledge management's social dimensions: lessons from Nucor Steel. *MIT Sloan Management Review*, 42(1):71-80.

- Gustafsson, J. 2017. *Single case studies vs. multiple case studies: a comparative analysis*. Available at <http://www.diva-portal.org/smash/get/diva2:1064378/FULLTEXT01.pdf> (Accessed 21 August 2018).
- Gürlek, M. 2020a. *Tech development through hrm*. UK: Emerald Publishing Limited.
- Gürlek, M. 2020b. Effects of high-performance work systems (HPWSs) on intellectual capital, organizational ambidexterity and knowledge absorptive capacity: evidence from the hotel industry. *Journal of Hospitality Marketing & Management*, 30(1):38-70. doi:10.1080/19368623.2020.1774029
- Gürlek, M., & Çemberci, M. 2020. Understanding the relationships among knowledge-oriented leadership, knowledge management capacity, innovation performance and organizational performance. *Kybernetes*, 49(11):2819-2846. doi:10.1108/k-09-2019-0632
- Gürlek, M., & Uygur, A. 2020. Service-oriented high-performance human resource practices and employee service performance: a test of serial mediation and moderation models. *Journal of Management & Organization*, 2020:1-37. doi:10.1017/jmo.2020.8
- Gürlek, M., & Tuna, M. 2018. Reinforcing competitive advantage through green organisational culture and green innovation. *The Service Industries Journal*, 38(7/8):467-491. doi:10.1080/02642069.2017.1402889
- Guthrie, J.P., & Datta, D. K. 2008. Dumb and dumber: the impact of downsizing on firm performance as moderated by industry conditions. *Organization Science*, 19(1):108-123.
- Haesli, A., & Boxal, P. 2005. When knowledge management meets hr strategy: an exploration of personalization-retention and codification-recruitment configurations. *International Journal of Human Resource Management*, 16(11):1955-1975.
- Hair, J.F., Black, W.C., Babin, B.J.B., & Anderson, R.E. 2014. *Multivariate data analysis*, 7<sup>th</sup> ed. England: Pearson Education Limited.
- Halawi, L.A., Aronson, J.E., & McCarthy, R.V. 2005. Resource-based view of knowledge management for competitive advantage. *The Electronic Journal of Knowledge Management*, 3(2): 75-86.
- Hamel, G., & Prahalad, C.K. 1994. *Competing for the future*. Boston: Harvard Business School Press.

- Handa, P., Pagani, J., & Bedford, D. 2019. *Knowledge assets and knowledge audits: working methods for knowledge management*. UK: Emerald Publishing Limited.
- Hanson, W., Creswell, J.W., Plano Clark, V.L., Petska, K.S., & Creswell, J.D. 2005. Mixed methods designs in counselling psychology. *Journal of Counselling Psychology*, 52(2):224-235.
- Hislop, D. 2003. Linking human resource management and knowledge management via commitment: a review and research agenda. *Employee Relations*, 25(2):182-202.
- Hislop, D. 2013. *Knowledge management in organisations: a critical introduction*, 3<sup>rd</sup>. Oxford: Oxford University Press.
- Hopkin, C.R., Hoyle, R.H., & Gottfredson, N.C. 2015. Maximizing the yield of small samples in prevention research: a review of general strategies and best practices. *Prevention Science*, 16:950–955. doi:10.1007/s11121-014-0542-7
- Hoskisson, R.E., Hitt, M.A., Wan, W.P., & Yiu, D. 1999. Theory and research in strategic management: swings of a pendulum. *Journal of Management*, 25(3):417-456.
- Hoyle, R.H. 1999. *Statistical strategies for small sample research*. Thousand Oaks: Sage Publications.
- Huang, Q., Davison, R., Liu, H., & Gu, J. 2008. The impact of leadership style on knowledge-sharing intentions in China. *Journal of Global Information Management*, 16:67-91.
- Huselid, M.A. 1995. The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*, 38(3):635-872.
- Hussinki, H., Kianto, A., Vanhala, M., & Ritala, P. 2017a. Assessing the universality of knowledge management practices. *Journal of Knowledge Management*, 21(6):1596-1621 doi:10.1108/jkm-09-2016-0394
- Hussinki, H., Ritala, P., Vanhala, M., & Kianto, A. 2017b. Intellectual capital, knowledge management practices and firm performance. *Journal of Intellectual Capital*, 18(4):904-922. doi:10.1108/jic-11-2016-0116
- Hyett, N., Kenny, A., & Dickson-Swift, V. 2014. Methodology or method? a critical review of qualitative case study reports. *International Journal of Qualitative Studies on Health and Well-being*, 9(1):1-12. doi:10.3402/qhw.v9.23606

- Illegems, V., & Verbeke, A. 2004. Telework: what does it mean for management? *Long Range Planning*, 37(4):319-334.
- Intan-Soraya, R., & Chew, K. 2010. A framework for human resource management in the knowledge economy: building intellectual capital and innovative capability. *International Journal of Business and Management Science*, 3(2):251-273.
- Ishak, N.B., Eze, U.C., & Ling, L.S. 2010. Integrating Knowledge Management and Human Resource Management for Sustainable Performance. *Journal of Organizational Knowledge Management*, 2010:1-13. doi:10.5171/2010.322246
- Islam, M.N., Islam, M.S., & Razzak, A. 2020. Problems of knowledge management practices in libraries and information centres of Bangladesh. *International Federation of Library Associations and Institutions*, 46(1):34–51. doi:10.1177/0340035219894359
- Islam, M.Z., Jasimuddin, S.M., & Hasan, I. 2015. Organizational culture, structure, technology infrastructure and knowledge sharing: empirical evidence from MNCs based in Malaysia. *VINE*, 45(1):67-88. doi:10.1108/vine-05-2014-0037
- Ivankova, N.V. 2015. *Mixed methods applications in action research: from methods to community action*. Los Angeles: Sage.
- Ivankova, N.V., Creswell, J.W., & Plano Clark, V.L. 2016. Foundations and approaches to mixed methods research, in Maree, K. *First steps in research*. 2nd ed. Pretoria: Van Schaik Publishers. 305-336.
- Jackson, S.E., Hitt, M.A., & DeNisi, A.S. 2003. Managing human resources for knowledge-based competition: new research directions. In, Jackson, S.E., Hitt, M.A., & DeNisi, A.S. *Managing knowledge for sustained competitive advantage: designing strategies for effective human resource management*. San Francisco: Jossey-Bass.
- Jennex, M.E., & Durcikova, A. 2013. Assessing knowledge loss risk. *46<sup>th</sup> Hawaii International Conference on System Sciences*, 3478-3487.
- Jennex, M.E. 2009. Assessing knowledge loss risk. *Proceedings of the Fifteenth Americas Conference on Information Systems*, San Francisco, California, August 6<sup>th</sup> – 9<sup>th</sup>.
- Jiang, K., Lepak, D.P., Hu, J., & Baer, J.C. 2012. How does human resource management influence organisational outcomes? a meta-analytic investigation of mediating mechanisms. *Academy of Management Journal*, 55(6):1264-1294.

- Jimenez-Jimenez, D., & Sanz-Valle, R. 2013. Studying the effect of hrn practices on knowledge management process. *Personnel Review*, 42(1): 28-49. doi:10.1108/00483481311285219
- Johnson, R.B., Onwuegbuzie, A.J., & Turner, L.A. 2007. Towards a definition of mixed methods research. *Journal of Mixed Methods Research*, 1(2):112-133.
- Johnson, R.B., & Onwuegbuzie, A. 2004. Mixed methods research: a research paradigm whose time has come. *Educational Researcher*, 33(7):14-26.
- Johnson, R. B., & Turner, L. A. 2003. Data collection strategies in mixed methods research, in Tashakkori, A., & Teddlie, C. (eds.). *Handbook of mixed methods in social and behavioral research*. Thousand Oaks, CA: Sage. 297-319.
- Jones, G., George, J., & Hill, W. 2000. *Contemporary management*. USA: Irwin McGraw-Hill.
- Jøranli, I. 2018. Managing organisational knowledge through recruitment: searching and selecting embodied competencies. *Journal of Knowledge Management*, 22(1): 183-200. doi:10.1108/jkm-12-2016-0541
- Kanhanhalli, A., Tan, B., & Wei, K. 2005. Contributing to knowledge to electronic knowledge repositories. an empirical investigation. *MIS Quarterly*, 29:113-143.
- Kaplan, B. 2010. *Losing your minds: capturing, retaining and leveraging organisational knowledge*. London: Ark Group.
- Kaše, R., Paauwe, J., & Zupan, M. 2009. HR practices, interpersonal relations, and intrafirm knowledge transfer in knowledge intensive firms: a social network perspective. *Human Resource Management*, 48(4):615-639. doi:10.1002/hrm.20301
- Kathiravelu, S.G., Mansor, N.N.A, Ramayah, T., & Idris, N. 2013. Why organisational culture drives knowledge sharing. *International Conference on Innovation, Management and Technology Research*, 22-23 September: 119-126. doi:10.1016/j.sbspro.2014.03.656
- Khawaldeh, G.A. 2020. Impact of knowledge management (KM) on human resource management (HRM) performance based on the achieve model in selected Banks of Amman – Jordan. *International Journal of Business and Management*; 5(3):1-13. doi:10.5539/ijbm.v15n3p1
- Khesal, S.M, Samadi, B., Musram, H.A.M., & Zohoori, M. 2013. The impact of trust on knowledge sharing. *Interdisciplinary Journal of Contemporary Research in Business*, 5(2):495-501.

- Kianto, A., Shujahat, M., Hussain, S., Nawaz, F., & Ali, M. 2019. The impact of knowledge management on knowledge worker productivity. *Baltic Journal of Management*, 14(1): 178-197. doi:10.1108/bjm-12-2017-0404
- Kianto, A., Sáenz, J., & Aramburu, N. 2017. Knowledge-based human resource management practices, intellectual capital and innovation. *Journal of Business Research*, 81:11-20. doi:10.1016/j.jbusres.2017.07.018
- Kitchel, T., & Ball, A.L. 2014. Quantitative theoretical and conceptual framework use in agricultural education research. *Journal of Agricultural Education*, 55(1):186-1999. doi:10.5032/jae.2014.01186
- Kitchenham, A.D. 2010. Mixed methods in case study research, in Mills, A.J., Durepos, G., & Wiebe, E. *Encyclopedia of case study research*. Thousand Oaks: Sage Publications, Inc. 562-564.
- KMSA. 2020. Knowledge Management South Africa professional designations policy. Available at [https://www.kmsa.org.za/KMSA\\_Professional\\_Designation\\_Policy\\_03Nov2020\\_V1.pdf](https://www.kmsa.org.za/KMSA_Professional_Designation_Policy_03Nov2020_V1.pdf) (Accessed 17 May 2021)
- KMSA. 2018. Knowledge Management South Africa. Available at <http://kmsa.org.za/> (Accessed 06 September 2018).
- Klepić, Z., & Madžar, D. 2017. The impact of organizational culture on knowledge management in small and medium enterprises. *Tourism in Southern and Eastern Europe*, 4:259-266. doi:10.20867/tosee.04.48
- Knecht, M. 2014. *Diversification, industry dynamism, and economic performance: the impact of dynamic-related diversification on the multi-business firm*. Fachmedien Wiesbaden: Springer Gabler.
- Knowledge Board. 2002. *KM and human resources management*. Available at <http://www.knowledgeboard.com/cgi-bin/item.cgi?id=860> (Accessed on 11 September 2016).
- Kogut, B., & Zander, U. 1992. Knowledge of the firm, combinative capabilities, and the replication of technology. *Organisational Science*, 3(3):383-397.



- Koloniari, M., Vraimaki, E., & Fassoulis, K. 2019. Factors affecting knowledge creation in academic libraries. *Journal of Librarianship and Information Science*, 51(1):20-33. doi:10.1177/0961000616668958
- Kraak, A. 2005. Human resource development and the skills crisis in South Africa: the need for a multi-pronged strategy. *Journal of Education and Work*, 18(1):57-83.
- Kraak, A., & Press, K. 2008. *Human resources development review 2008: education, employment and skills in South Africa*. Cape Town: HSRC Press.
- Kraaijenbrink, J., & Spender, J.C. 2010. The resource-based view: a review and assessment of its critiques. *Journal of Management*, 36(1):349-371. doi:10.1177/0149206309350775
- Kumasi, K.D., Charbonneau, D.H., & Walster, D. 2013. Theory talk in the library science scholarly literature: an exploratory analysis. *Library & Information Science Research*, 35(3):175-180. doi:10.1016/j.lisr.2013.02.004
- Kumar, A.A. 2016. Role of knowledge management in human resource management. *National seminar on modern management practices – paradigm shift, Osmania University Proceedings*, January 26-17: 1-9.
- Kumar, R. 2014. *Research methodology: a step-by-step guide to beginners*. 4<sup>th</sup> ed. Los Angeles: Sage.
- Kvale, S. 1996. *Interviews: An introduction to qualitative research interviewing*. CA: Sage.
- Kyburtz-Graber, R. 2004. Does case-study methodology lack rigour? the need for quality criteria for sound case-study research, as illustrated by a recent case in secondary and higher education. *Environmental Educational Research*, 10(1):53-65.
- Lado, A.A., & Wilson, M.C. 1994. Human resource systems and sustained competitive advantage: competency-based perspective. *Academy of Management Review*, 19(4): 699-727.
- Leedy, P.D., & Ormrod, J.E. 2015. *Practical research: planning and design*. 11<sup>th</sup> ed. Boston: Pearson.
- Leedy, P.D., & Ormrod, J.E. 2013. *Practical research: planning and design*. 10<sup>th</sup> ed. Boston, MA: Pearson
- Lengnick-Hall, M.L., & Andrade, L.S. 2008. Talent staffing systems for effective knowledge

- Management, in Vaiman, V & Vance, C.M. *Smart talent management: building knowledge assets for competitive advantage*. UK: Edward Elgar Publishing Limited. 41-58.
- Lengnick-Hall, M.L., & Lengnick-Hall. 2002. *Human resource management in the knowledge economy: new challenges, new roles, new capabilities*. San Francisco: Berrett-Koehler Publishers.
- Levy, M. 2011. Knowledge retention: minimizing organizational business loss. *Journal of Knowledge Management*, 15(4): 582-600. doi:10.1108/13673271111151974
- Liebowitz, J. 2008. *Knowledge Retention: Strategies and Solutions*. London: CRC Press.
- Lin, T., Chang, C.L., & Tsai, W. 2016. The influences of knowledge loss and knowledge retention mechanisms on the absorptive capacity and performance of a MIS department. *Management Decision*, 54(7):1757-1787. doi:10.1108/md-02-2016-0117
- Lin, H. 2007. Effects of extrinsic and intrinsic motivation on employee knowledge sharing intentions. *Journal of Information Science*, 33(2):135-149.
- Liophanich, C. 2017. Critical factors for knowledge management implementation in state-owned enterprises. *STOU Education Journal*, 10(2):136-151.
- Liophanich, C. 2014. An investigation of knowledge management implementation: multiple case study in mobile telecommunication industry. *Journal of Industrial and Intelligent Information*, 2(2):159-163. doi:10.12720/jiii.2.2.159-163
- Lochhead, C. & Stephens, A. 2004. *Employee retention, labour turnover and knowledge transfer: case studies from the Canadian plastics sector*. Canada: Canadian Labour and Business Centre.
- MacMillan, A. 2015. *Do you understand your company's knowledge assets?* Available at <https://www.weforum.org/agenda/2015/04/do-you-understand-your-companysknowledge-assets/> (Accessed 18 May 2021)
- Mahmoudsalehi, M., Moradkhannejad, R., & Safari, K. 2012. How knowledge management is affected by organizational structure. *The Learning Organization*, 19(6):518-528. doi:10.1108/09696471211266974
- Mahoney, J., & Goertz, G. 2006. A tale of two cultures: contrasting quantitative and qualitative research. *Political Analysis*, 14:227-249.

- Mason, D., & Pauleen, D.J. 2003. Perceptions of knowledge management: a qualitative analysis. *Journal of Knowledge Management*, 7(4):38-48.
- Maree, K. 2016. Planning a research proposal, in Maree, K. *First steps in research*. 2<sup>nd</sup> ed. Pretoria: Van Schaik Publishers. 25-47.
- Maree, K., & Pietersen, J. 2016. Surveys and the use of questionnaires, in Maree, K. *First steps in research*. 2<sup>nd</sup> ed. Pretoria: Van Schaik Publishers. 173-190.
- Mark, M.M., & Shotland, R.L. 1987. Alternative models for the use of multiple methods, in Mark, M. M. & Shotland, R. L. (eds.). *Multiple methods in program evaluation: New Directions for Program Evaluation 35*. San Francisco: Jossey-Bass, pp95-100.
- Martin-de Castro, G., Lopez-Saez, P., & Delgado-Verde, M. 2011. Towards a knowledge-based view of firm innovation. theory and empirical research. *Journal of Knowledge Management*, 15(6):871-874. doi:10.1108/13673271111179253
- Martinez-Sanchez, A., Vicente-Oliva, S., & Perez-Perez, M. 2020. The strategy of human resource flexibility versus absorptive capacity of knowledge: an integrative framework in industrial firms. *European Journal of Innovation Management*, 26(2):315-337. doi:10.1108/ejim-10-2019-0314
- Martins, E.C., & Meyer, H.W.J. 2012. Organisational and behavioural factors that influence knowledge retention. *Journal of Knowledge Management*, 16(1):77-96. doi:10.1108/13673271211198954
- Martins, E.C. 2010. *Identifying organisational and behavioural factors that influence knowledge retention*. Unpublished doctoral thesis: University of South Africa.
- Martins, E.C., & Martins, N.2011. The role of organisational factors in combating tacit knowledge in organisations. *South African Business Review*, 15(1):49-69.
- Masterson, S.S., Lewis, K., Goldman, B.M., & Taylor, M.S. 2000. Integrating justice and social exchange: the differing effects of fair procedures and treatment on work relationships. *Academy of Management Journal*, 43(4):738-748. doi:10.2307/1556364
- Massingham, P.R. 2018. Measuring the impact of knowledge loss: a longitudinal study. *Journal of Knowledge Management*. 22(4):721-758. doi:10.1108/jkm-08-2016-0338

- Massingham, P.R. 2008. Measuring and managing the impact of knowledge loss: more than ripples on a pond. *Management Learning*, 39(5):541-560. doi:10.1177/1350507608096040
- Masue, O.S., Swai, I.L., & Anasel, M.G. 2013. The qualitative-quantitative disparities in social science research: what does qualitative comparative analysis (QCA) brings in to bridge the gap? *Asia Social Science*, 9(10):211-221. doi:10.5539/ass.v9n10p211
- Mariano, S., Casey, A., & Olivera. 2020. Organisational forgetting Part 1: a review of the literature and future research directions. *The Learning Organization*, 27(3):185-209. doi:10.1108/tlo-12-2019-0182
- Matošková, J., & Směšná, P. 2017. Human resources management practices stimulating knowledge sharing. *Management & Marketing. Challenges for Knowledge Society*, 12(4):614-632. doi:10.1515/mmcks-2017-0036
- Matošková, J. 2012. How to support knowledge management through human resource management activities. *Journal of International Business Studies*, 45(1):52-62.
- McElroy, M.W. 2002. *The new knowledge management: complexity, learning and innovation*. New York: Butterworth-Heinemann.
- McFarlane, D.A. 2008. Effectively managing the 21<sup>st</sup> century knowledge worker. *Journal of Knowledge Management Practice*, 9(1):1-6.
- McGregor, L. n.d. Can South African state-owned companies succeed? Available at <http://www.usb.ac.za/Shared%20Documents/Can%20State%20Owned%20Companies%20succeed.pdf> (Accessed on 01 February 2017).
- McInerney, C.R., & Koenig, M.E.D. 2011. *Knowledge management (km) processes in organisations: theoretical foundations and practice*. New York: Morgan & Claypool Publishers.
- McKim, C. 2017. The value of mixed methods research: a mixed methods study. *Journal of Mixed Methods Research*, 11(2):202-222. doi:10.1177/1558689815607096
- McNeish, J., & Mann, I.J.S. 2010. Knowledge sharing and trust in organizations, *The IUP Journal of Knowledge Management*, 8 (1/2):18-38.
- McQuade, E., Sjoer, E., Fabian, P., Nascimento, J.C., & Schroeder, S. 2007. Will you miss me

- when i'm gone? a study of the potential loss of company knowledge and expertise as employees retire. *Journal of European Industrial Training*, 31(9):758-768.
- Mhlongo, M.A. 2018. *Integration of indigenous knowledge into the services of public libraries in South Africa*. Doctoral thesis: University of South Africa
- Micić, R. 2015. Leadership role in certain phases of knowledge management processes. *Ekonomika*, 61(4):47-55. doi:10.5937/ekonomika1504047m
- Mihardjo, L.W.W., Jermisittiparsert, K., Ahmed, U., Chankoson, T., & Hussain, H.I. 2020. Impact of key HR practices (human capital, training and rewards) on service recovery performance with mediating role of employee commitment of the Takaful industry of the Southeast Asian region. *Education + Training*, 63(1):1-21. doi:10.1108/et-08-2019-0188
- Minbaeva, D.B. 2005. HRM practices and mnc knowledge transfer. *Personnel Review*, 34(1):125-144.
- Monte, J. 2020. *Knowledge management 101: preventing a knowledge loss crisis in 6 steps*. Available at:  
<https://www.edsisolutions.com/blog/knowledge-management-101-preventing-a-knowledge-loss-crisis-in-6-steps> (Accessed on 10 August 2020).
- Morgan, D.L. 2018. Living within blurry boundaries: the value of distinguishing between qualitative and quantitative research. *Journal of Mixed Methods Research*, 12(3):268-279. doi:10.1177/1558689816686433
- Morgan, D.L. 2014. Pragmatism as a paradigm for social research. *Qualitative Inquiry*, 14(1045-1053). doi:10.1177/1077800413513733
- Morgan, D.L. 2013. *Integrating qualitative and quantitative methods*. Thousand Oaks, CA: Sage.
- Morgan, D.L. 2008. Paradigms lost and pragmatism regained: methodological implications of combining qualitative and quantitative methods, in Plano Clark, V.L., & Creswell, J.W. *The mixed methods reader*. Los Angeles: Sage Publications.
- Morgan, D.L. 2007. Paradigms lost and pragmatism regained: methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research*, 1(1):48-76.

- Mørk, B., Hoholm, T., Ellingsen, G., Edwin, B., & Aanestad, M. 2012. Changing practices through boundary organizing: a case from medical R&D. *Human Relations*, 62(2):263-288. doi:10.1177/0018726711429192
- Morse, J. M. 1991. Approaches to qualitative-quantitative methodological triangulation. *Nursing Research*, 40:120-123.
- Mouton, J. 2001. *How to succeed in your master's and doctoral studies: a South African guide and research book*. Pretoria: Van Schaik Publishers.
- Mouton, J., & Marais, H.C. 1990. *Basic concepts in the methodology of the social sciences*. Pretoria: HSRC.
- Mueller, J. 2014. A specific knowledge culture: cultural antecedents for knowledge sharing between project teams. *European Management Journal*, 32:190–202. doi:10.1016/j.emj.2013.05.006
- Murali, A., & Kumar, S.K. 2014. Knowledge management and human resource management (HRM): importance of integration. *FIIB Business Review*, 3(1):3-10.
- Naqshbandi, M.M., & Jasimuddin, S.M. 2018. Knowledge-oriented leadership and open innovation: the role of knowledge management capability in France-based multinationals. *International Business Review*, 27(3):701-713. doi:10.1016/j.ibusrev.2017.12.001
- Narasimha, S. 2000. Organizational knowledge, human resource management, and sustained competitive advantage. *Competitiveness Review: An International Business Journal incorporating Journal of Global Competitiveness*, 10:123-135.
- National Planning Commission. 2013. *State-owned enterprises: challenge and opportunity*. Available at <https://www.nationalplanningcommission.org.za/assets/Documents/NPC%20Position%20Paper%20on%20The%20Contribution%20of%20SOEs%20to%20Vision%202030.pdf> (Accessed on 18 May 2021)
- National Treasury. 2015. *Public institutions listed in PFMA schedule 1, 2, 3A, 3B, 3C and 3D*. Republic of South Africa. National Treasury.
- Neuman, W.L. 2014. *Social research methods: qualitative and quantitative approaches*. International 7<sup>th</sup> ed. England: Pearson Education Limited.

- Neuman, W.L. 2011. *Social research methods: qualitative and quantitative approaches*. 7<sup>th</sup> ed. Boston: Pearson
- Ngoepe, M.S. 2012. *Fostering a framework to embed the records management function into the auditing process in the South African public sector*. Doctoral thesis: University of South Africa.
- Ngulube, P. 2020. Mixed methods research in knowledge management studies (2009-2014): a content analysis of journal articles. *Journal of Information & Knowledge Management*, 19(3):1-23. doi:10.1142/s0219649220500161
- Ngulube, P. 2019. Mapping methodological issues in knowledge management research, 2009-2014. *International Journal of Knowledge Management*, 15(1): January-March. doi:10.4018/ijkm.2019010106
- Ngulube, P. 2018. Overcoming the difficulties associated with using conceptual and theoretical frameworks in heritage studies, in Ngulube, P. *Handbook of research on heritage management and preservation*. Hershey, PA: IGI Global. 1-23. doi:10.4018/978-1-5225-3137-1.ch001
- Ngulube, P. 2015a. Mixed methods research in the South African journal of economic and management sciences: an investigation of trends in the literature. *South African Journal of Economic and Management Sciences*, 18(1):1-13.
- Ngulube, P. 2015b. Trends in research methodology procedures used in knowledge management studies. *African Journal of Library, Archives and Information Science*, 25(2):125-143.
- Ngulube, P. 2013. Blending qualitative and quantitative research methods in library and information science in Sub-Saharan Africa. *ESARBICA Journal*, 32:10-23.
- Ngulube, P. 2012. Mapping mixed methods research in library and information science journals in Sub-Saharan Africa 2004–2008. *African Journal of Library, Archives and Information Science*, 22 (2):117-132.
- Ngulube, P. 2010. Mapping mixed methods research in library and information science journals in Sub-Saharan Africa 2004-2008. *The International Information & Library Review*, 42: 252-261.
- Ngulube, P. 2005. Research procedures used by master of information studies students at the University of Natal in the period 1982 – 2002 with special reference to their sampling

- Techniques and survey response rates: a methodological discourse. *The International Information & Library Review*, 37(2):127-143.
- Ngulube, P., Mathipa, E.R., & Gumbo, M.T. 2015. Theoretical and conceptual framework in the social sciences, in Mathipa, E.R., & Gumbo, M.T. (eds). *Addressing research challenges: making headway for developing researchers*. Noordwyk: Mosala-Masedi. 43-66.
- Nguyen, Q.T.N., Neck, P.A., & Nguyen, T.H. 2009. The critical role of knowledge management in achieving and sustaining organisational competitive advantage. *International Business Research*, 2(3):3-15.
- Nieswiadomy, R.M. 2012. *Foundations of nursing research*. 6<sup>th</sup> ed. Boston: Pearson Education.
- Nieuwenhuis, J. 2016a. Introducing qualitative research, in Maree, K. *First steps in research*. 2<sup>nd</sup> ed. Pretoria: Van Schaik Publishers. 49-70.
- Nieuwenhuis, J. 2016b. Qualitative research designs and data-gathering techniques, in Maree, K. *First steps in research*. 2<sup>nd</sup> ed. Pretoria: Van Schaik Publishers. 71-102.
- Nieuwenhuis, J. 2016c. Analysing qualitative data, in Maree, K. *First steps in research*. 2<sup>nd</sup> ed. Pretoria: Van Schaik Publishers. 103-131.
- Nonaka, I. 1991. The Knowledge-creating company. *Harvard Business Review*, November-December: 96-104.
- Nonaka, I. 2007. The Knowledge-creating company. *Harvard Business Review*, July-August, 162-171.
- Nonaka, I. & Konno, N. 1998. The Concept of “ba”: building a foundation for knowledge creation. *California Management Review*, 40(3):40-54.
- Nonaka, I. 1994. A dynamic theory of organizational knowledge creation. *Organization Science*, 5(1):14-37.
- Nonaka, I., & Takeuchi, H. 1995. *The knowledge-creating company*. New York: Oxford University Press
- Nonaka, I., & Toyama, R. 2003. The knowledge-creating theory revisited: knowledge creation as a synthesizing process. *Knowledge Management Research & Practices*, 1:1-10.
- Nonaka, I., & Toyama, R. 2002. A firm as a dialectical being: towards a dynamic theory of the firm. *Industrial and Corporate Change*, 11(5): 995-1009.



- Nonaka, I., Toyama, R., & Nagata, A. 2000. A firm as a knowledge-creating entity: a new perspective on the theory of the firm. *Industrial and Corporate Change*, 9(1):1-20.
- Nonaka, I., von Krogh, G., & Voelpel, S. 2006. Organizational knowledge creation theory: evolutionary paths and future advances. *Organization Studies*, 27(8):1179-1207.
- Nonaka, I., Byosiere, P., Borucki, C.C., & Konno, N. 1994. Organisational knowledge creation theory: a first comprehensive test. *International Business Review*, 3(4):337-351.
- Odendahl, T. 2002. Interviewing elites, in Gubrium, J. F. and Holstein, J. A. *Handbook of Interview Research: Context and Method*. London: Sage Press, 299-301.
- OECD. 2015. *State-owned enterprises in the development process*. Paris: OECD Publishing.
- Olivera, F. 2000. Memory systems in organizations: an empirical investigation of mechanisms for knowledge collection, storage, and access. *Journal of Management Studies*, 37(6):811-832.
- Ologbo, A.C., Nor, K.M., & Okyere-Kwakye, E. 2015. The influence of knowledge sharing on employee innovation capabilities. *International Journal of Human Resource Studies*, 5(3):102-110. doi:10.5296/ijhrs.v5i3.8210
- Oltra, V. 2005. Knowledge management effectiveness factors: the role of HRM. *Journal of Knowledge Management*, 9(4):70-86.
- Omerzel, D.G., & Gulev, R.E. 2011. Knowledge resources and competitive advantage. *Managing Global Transitions*, 9(4):335-354.
- Omotayo, F.O. 2015. Knowledge management as an important tool in organisational management: a review of literature. *Library Philosophy and Practice*, Spring 1-22.
- Onwuegbuzie, A.J., & Leech, N.L. 2005. On becoming a pragmatic researcher: the importance of combining quantitative and qualitative research methodologies. *International Journal of Social Research Methodology*, 8(5):375-387.
- Orb, A., Eisenhauer, L., & Wynaden, D. 2001. Ethics in qualitative research. *Journal of Nursing Scholarship*, 33(1):93-96.
- Papa, A., Dezi, L., Gregori, G.L., Mueller, J., & Miglietta, N. 2020. Improving innovation performance through knowledge acquisition: the moderating role of employee and human resource management practices. *Journal of Knowledge Management*, 24(3):589-605. doi:10.1108/jkm-09-2017-0391

- Parise, S., Cross R., & Davenport. 2006. Strategies for preventing a knowledge loss crisis. *MIT Sloan Management Review*, 47(4):30-38.
- Pastor, I., Santana, M., & Sierra, C. 2010. Managing knowledge through human resource practices: empirical examination of the Spanish automotive industry. *The International Journal of Human Resource Management*, 21(13):2552-2467. doi:10.1080/09585192.2010.516596
- Paulsen, J.M., & Hjertø, K.B. 2014. Exploring individual-level and group-level levers for inter-organisational knowledge transfer. *The Learning Organization*, 21(4):274-287. doi:10.1108/tlo-09-2013-0044
- Pe'er, A.A. 2016. Human resource-based competitive advantage: the case of motivational rents. *Journal of Entrepreneurship & Organization Management*, 5(1):1-8. doi:10.4172/2169-026x.1000162
- Penrose, E.T. *The theory of growth of the firm*. Oxford: Blackwell.
- Peteraf, M.A. 1993. The cornerstones of competitive advantage: a resource-based view. *Strategic Management Journal*, 14:179-191.
- Peteraf, M.A., & Barney, J. 2003. Unravelling the resource-based tangle. *Managerial and Decision Economics*, 24:309-323.
- Phaladi, M.P. 2011. *Knowledge transfer and retention: the case of a public water utility in South Africa*. Masters Thesis: University of Stellenbosch.
- Pham, A.T., Nguyen, N.T., & Nguyen, D.M. 2015. Influence of organizational and technological aspects on the knowledge sharing behaviour in the Vietnam's university context. *Asian Social Science*, 11(10):139-152. doi:10.5539/ass.v11n10p139
- Philips, E.M. & Pugh, D.S. 1999. *How to get a PhD: a handbook for students and their supervisors*. New Delhi: Viva Books Private Limited.
- Philips, E.M. 1992. The PhD – Assessing quality at different stages of its development, in Zuber-Skerritt (ed.) *Starting research – supervision and training*. University of Queensland: Tertiary Education Institute.
- Pietersen, J., & Maree, K. 2016. Standardisation of a questionnaire, in Maree, K. *First steps in research*. 2<sup>nd</sup> ed. Pretoria: Van Schaik Publishers. 237-247.

- Plano Clark, V.L., Huddleston-Casas, C.A., Churchill, S.L., Green, D.O., & Garrett, A.L. 2008. Mixed methods approaches in family science research. *Journal of Family Issues*, 29(11):1543-1566.
- Plano Clark, V.L., & Ivankova, N.V. 2016. *Mixed methods research: a guide to the field*. Los Angeles: Sage.
- Polanyi, M. 1958. *Personal knowledge: towards a post-critical philosophy*. London: Routledge & Kegan Paul.
- Poole, D., & Sheehan, T. 2006. Strategies for managing the global brain drain. *Knowledge Management Review*, 9(2):22-25.
- Porter, M.E. 1980. *Competitive strategy: techniques for analysing industries and competitors*. New York: Free Press.
- Porter, M.E. 1985. *Competitive advantage*. New York: Free Press.
- Porter, M.E. 1996. What is strategy? *Harvard Business Review*, 74(6):61-78.
- Postolache, A. 2019. What is a knowledge management (KM) specialist and how to become one. Available at <https://www.quandora.com/what-is-a-knowledge-management-specialist-how-to-become-one/> (Accessed 18 May 2021).
- Prahalad, C.K., & Hamel, G. 1990. The core competence of the corporation. *Harvard Business Review*, May-June: 79-91.
- Priem, R.I., & Butler, J.E. 2001. Is the resource-based view a useful perspective for strategic management research? *Academy of Management Review*, 26:22-40.
- Prusak, L., & Davenport, T.H. 2013. Knowledge after the knowledge creating company: a practitioner perspective, in von Krogh, G., Takeuchi, H., Kaje, K., & Canton, C.G. *Towards organisational knowledge*. Houndmills: Palgrave Macmillan, 255-262.
- Punch, K.F. 2014. *Introduction to social research: quantitative and qualitative approaches*. Los Angeles: Sage.
- PWC. 2015. *State-owned enterprises: catalysts for public value creation*. Available at [www.psrc.pwc.com](http://www.psrc.pwc.com) (Accessed 01 June 2019).
- Rambe, P., & Mbeo, M.A. 2017. Technology-enhanced knowledge management framework for retaining research knowledge among university academics. *Journal of Economics and Behavioral Studies*, 9(1): 189-206.

- Rashid, M., Clarke, P.M., & O'Connor, R.V. 2019a. A systematic examination of knowledge loss in open source software projects. *International Journal of Information Management*, 46:104–123. doi:10.1016/j.ijinfomgt.2018.11.015
- Rashid, M., Clarke, P.M., & O'Connor, R.V. 2020. A mechanism to explore proactive knowledge retention in open source software communities. *Journal of Software: Evolution and Process*, 32:1-10. doi:10.1002/smr.2198
- Rahimli, A. 2012. Knowledge Management and Competitive Advantage. *Information and Knowledge Management*, 2(7):37-43.
- Rahman, M.S., Osman-Gani, A.M., Momen, M.A., & Islam, N. 2016. Testing knowledge sharing effectiveness: trust, motivation, leadership style, workplace spirituality and social network embedded model. *Management & Marketing*, 10(4):284-303. doi:10.1515/mmcks-2015-0019
- Ramjeawon, P.V., & Rowley, J. 2020. Enablers and barriers to knowledge management in universities: perspectives from South Africa and Mauritius. *Aslib Journal of Information Management*, 72 (5):745-764. doi:10.1108/ajim-12-2019-0362
- Rasool, F. & Botha, C.J. 2011. The nature, extent and effect of skills shortages on skills migration in South Africa. *SA Journal of Human Resource Management*, 9(1):1-12.
- Remler, D.K., & Van Ryzin, G.G. 2015. *Research methods in practice: strategies for description and causation*. 2<sup>nd</sup> ed. Los Angeles: Sage.
- Rezaei, M., Jafari-Sadeghi, V., & Bresciani, S. 2020. What drives the process of knowledge management in a cross-cultural setting: the impact of social capital. *European Business Review*, 32(3):485-511. doi:10.1108/eb-06-2019-0127
- Roome, E. 2012. *Hiring by knowledge-intensive firms in China*. PhD thesis: Manchester Business School.
- Rowley, J. 2002. Using case studies in research. *Management Review News*, 25(1):16-27.
- Rumelt, R. 1984. Toward a strategic theory of the firm, in Lamb, R. *Competitive strategic management*. Englewood Cliffs, NJ: Prentice Hall, 556-570.
- Rutten, W., Blaas-Franken, J., & Martin, H. 2016. The impact of (low) trust on knowledge sharing. *Journal of Knowledge Management*, 20(2):199-214. doi:10.1108/jkm-10-2015-0391

- Saifi, S.A. 2015. Positioning organisational culture in knowledge management research. *Journal of Knowledge Management*, 19(2):164-189.
- Samaduzzaman, M, Mou, M., & Rezwan, F. 2013. Critical analysis of organizational knowledge theory. *IOSR Journal of Business and Management*, 13(3):58-60.
- Sandelin, S.K., Hukka, J.J., & Katko, T.S. 2019. Importance of knowledge management at water utilities. *Public Works Management & Policy*, 00(0):1-17. doi: 10.1177/1087724x19870813
- Sandborn, P., & Williams, M.K. 2017. Critical skills – the effect of the disappearance of non-replaceable workforce, in Antoniou, A.S., Burke, R.J., & Cooper S.C.L. *The aging workforce handbook: individual, organizational, and societal challenges*, 269-298. doi:10.1108/978-1-78635-448-820161011
- Sandelowski, M. 2014. Unmixing mixed-methods research. *Research in Nursing and Health*, 37:3-8. doi:10.1002/nur.21570
- Sarantakos, S. 2013. *Social research*. 4<sup>th</sup> ed. Basingstoke, Hampshire: Palgrave Macmillan.
- Sayyadi, M. 2019. How effective leadership of knowledge management impacts organizational performance. *Business Information Review*, 36(1):30-38. doi:10.1177/0266382119829643
- Saunders, M., Lewis, P., & Thornhill, A. 2016. *Research methods for business students*. 7<sup>th</sup> ed. Munich: Pearson.
- Saunders, M., Lewis, P., & Thornhill, A. 2012. *Research methods for business students*. 6<sup>th</sup> ed. London: Pearson.
- Scarbrough, H. 2003. Knowledge management, HRM and the innovation process. *International Journal of Manpower*, 24(5):501-516.
- Scarbrough, H., & Carter, C. 2000. *Investigating knowledge management*. London: CIPD.
- Scaringella, L. 2016. Knowledge, knowledge dynamics, and innovation. *European Journal of Innovation Management*, 19(3):337-361. doi:10.1108/ejim-05-2015-0031
- Scalzo, N. J. 2006. Memory loss? corporate knowledge and radical change. *Journal of Business Strategy*, 27(4):60-69.
- Schmitt, A., Borzillo, S., & Probst, G. 2011. Don't let knowledge walk away: knowledge

- retention during employee downsizing. *Management Learning*, 43(1):53-74.  
doi:10.1177/1350507611411630
- Schuller, M. 2014. Stickiness in knowledge transfer, in Hasan, H. *Being practical with theory: a window into business research*. Wollongong, Australia: THEORI, 61-63.
- Sengottuvel, M., & Aktharsha, U.S. 2016. HRM practices, knowledge sharing, innovation capacity and firm performance in hospitals. *IORS Journal of Business and Management*, 18(9):35-43.
- Shafagatova, A., & Van Looy, A. 2021. Alignment patterns for process oriented appraisals and rewards: using HRM for BPM capability building. *Business Process Management Journal*, preprint. 27(3):951-964. doi:10.1108/bpmj-03-2020-0101
- Shamim, S., Cang, S., & Yu, H. 2019. Impact of knowledge-oriented leadership on knowledge management behaviour through employee work attitudes. *The International Journal of Human Resource Management*, 30(16):2387-2417. doi:10.1080/09585192.2017.1323772
- Shariq, S. Mukhtar, U, & Anwar, S. 2019. Mediating and moderating impact of goal orientation and emotional intelligence on the relationship of knowledge-oriented leadership and knowledge sharing. *Journal of Knowledge Management*, 23(2):332-350. doi:10.1108/jkm-01-2018-0033
- Shaw, J. D., Delery, J. E., Jenkins, G. D., & Gupta, N. 1998. An organisation-level analysis of voluntary and involuntary turnover. *The Academy of Management Journal*, 41(5):511-525.
- Simpson, S.N.Y. 2014. Boards and governance of state-owned enterprises. *Corporate Governance*, 14(2):238-251. doi:10.1108/cg-08-2012-0063
- Singh, M.K., & Gupta, V. 2020. Critical types of knowledge loss in military organisations. *VINE Journal of Information and Knowledge Management Systems*, (pre-print): 1-18. doi 10.1108/vjikms-09-2019-0152
- Singh, R., & Jain, N. 2014. To study the effectiveness of HRM practices in textile industries in Madhya Pradesh. India. *Global Journal of Human Resource Management*, 2(3):59-72.
- Singh, S.K. 2008. Role of leadership in knowledge management: a study. *Journal of Knowledge Management*, 12(4):3-15. doi:10.1108/13673270810884219

- Slagter, F. 2007. Knowledge management among the older workforce. *Journal of Knowledge Management*, 11(4): 82-96. doi:10.1108/13673270710762738
- Smale, A. 2008. Global HRM integration: a knowledge transfer perspective. *Personnel Review*, 37(2):145-164. doi:10.1108/00483480810850515
- Smith, H., & Schurink, W. 2005. The interface between knowledge management and human resources: a qualitative study. *SA Journal of Human Resource Management*, 3(1):6-13.
- Sokolov, D., & Zavyalova, E. 2020. Human resource management systems and intellectual capital: is the relation universal in knowledge-intensive firms? *International Journal of Manpower*, September: (pre-print):1-19. doi:10.1108/ijm-11-2018-0372
- Soliman, F., & Spooner, K. 2000. Strategies for implementing knowledge management: role of human resources management. *Journal of Knowledge Management*, 4(4):337-345. doi:10.1108/13673270010379894
- Spender, J.C. 2013. Nonaka and KM's past, present and future, in von Krogh, G., Takeuchi, H., Kaje, K., & Canton, C.G. *Towards organisational knowledge*. Houndmills: Palgrave Macmillan, 24-59.
- Spender, J.C. 1996. Making knowledge the basis of a dynamic theory of the firm. *Strategic Management Journal*, 17(Winter Special Issue): 45-62.
- Spender, J.C., & Grant, R.M. 1996. Knowledge and the firm: overview. *Strategic Management Journal*, 17(Winter Special Issue): 5-9.
- Srinivasan, S., Moser, R., Willis, G., Riley, W., Alexander, M., Berrigan, D., & Kobrin, S. 2015. Small is essential: importance of subpopulation research in cancer control. *American Journal of Public Health*, 105(3): 371-373. doi:10.2105/ajph.2014.302267
- Ståhle, P., & Grönroos, M. 2000. *Dynamic intellectual capital tm: knowledge management in theory and practise*. Helsinki, Finland: Werner Söderström Corporation.
- Stam, C.D. 2009. Knowledge and the ageing employee: a research agenda, in Stam, C.D (ed). *Knowledge and the ageing employee: a research agenda*, European Conference on Intellectual Capital, Haarlem, 28-29 April. Available at <http://www.scienceguide.nl/pdf/Stam200906.pdf> (accessed 16 January 2017).

- Starke, F.A., Dyck, B., & Mauws, M.K. 2003. Coping with the sudden loss of an indispensable employee: an exploratory case study. *The Journal of Applied Behavioral Science*, 39(2): 208-229.
- Storchevoi, M.A. 2015. The theory of the firm and strategic management. *Problems of Economics Transition*, 57(9): 1-9. doi:10.1080/10611991.2014.1088357
- Storey, J. 2007. *Human resource management: a critical text*. 3<sup>rd</sup> ed. UK: Thomson.
- Storey, J., & Quintas, P. 2001. Knowledge management and HRM, in Storey, J. (ed.) *Human resource management: a critical text*. London: Thompson Learning. 339-363.
- Stovel, M., & Bontis, N. 2002. Voluntary turnover: knowledge management – friend or foe? *Journal of Intellectual Capital*, 3(3): 303-322.
- Strack, R., Baier, J., & Fahlander, A. 2008. Managing demographic risk. *Harvard Business Review*, 86(2): 119-128.
- Straits, B.C., & Singleton, R.A. 2018. *Social research: approaches and fundamentals*. 6<sup>th</sup> ed. New York: Oxford University Press.
- Streb, C.K., Voelpel, S.C., & Leibold, M. 2008. Managing the aging workforce: status quo and implications for the development of theory and practice. *European Management Journal*, 26, 1-10.
- Su, T., Bai, Q., Sindakis, S., Zhang, X., & Yang, T. 2021. Vulnerability of multinational corporation knowledge network facing resource loss: a super-network perspective. *Management Decision*, 59(1): 84-103. doi:10.1108/md-02-2019-0227
- Suddaby, R. 2015. Editor's comments: why theory? *Academy of Management Review*, 40(1):1-5. doi:10.5465/amr.2014.0252
- Suddaby, R. 2006. From the editors: what grounded theory is not. *Academy of Management Journal*, 49(4):633-642.
- Sultan Balbuena, S. 2014. State-owned enterprises in Southern Africa: a stocktaking of reforms and challenges. *OECD Corporate Governance Working Paper*, No.13:1-52.
- Sumbal, M.S., Tsui, E., Durst, S., Shujahat, M., Irfan, I., & Ali, S.M. 2020. A framework to retain the knowledge of departing knowledge workers in the manufacturing industry. *VINE Journal of Information and Knowledge Management Systems*, 50(4):631-651. doi:10.1108/vjikms-06-2019-0086



- Sumbal, M.S., Tsui, E., Cheong, R., & See-to, E.W.K. 2018. Critical areas of knowledge loss when employees leave in the oil and gas industry. *Journal of Knowledge Management*, 21(1):180-196. doi:10.1108/jkm-08-2017-0373
- Sumbal, M.S., Tsui, E., See-to, E., & Barendrecht, A. 2017. Knowledge retention and aging workforce in the oil and gas industry: a multi perspective study. *Journal of Knowledge Management*, 21(4):907-924. doi:10.1108/jkm-07-2016-0281
- Sun, P.Y., & Anderson, M.H. 2012. The combined influence of top and middle management leadership styles on absorptive capacity. *Management Learning*, 43(1): 25-51. doi:10.1177/1350507611405116
- Susanty, A.I., & Salwa, M. 2017. Knowledge management practices and organizational learning have positive impacts on organizational performance of state-owned enterprises in Indonesia. *Mediterranean Journal of Social Sciences*, 8(3):281-292. doi:10.5901/mjss.2017.v8n3p281
- Sutherland, M., & Jordaan, W. 2004. Factors affecting the retention of knowledge workers. *SA Journal of Human Resource Management*, 2(2):55-64.
- Sveiby, K. 2001. A knowledge-based theory of the firm to guide in strategy formulation. *Journal of Intellectual Capital*, 2(4):344-358. doi:10.1108/14691930110409651
- Sveiby, K.E. 1997. *The new organisational wealth: managing and measuring knowledge-based assets*. San Francisco, CA: Berrett-Koehler.
- Sveiby, K.E. 1994. *Towards a knowledge perspective on organisation*. PhD dissertation: University of Stockholm.
- Swart, J., & Kinnie, N. 2010. Organisational learning, knowledge assets and HR practices in professional service firms. *Human Resource Management Journal*, 20(1):64-78. doi:10.1111/j.1748-8583.2009.00115.x
- Sykes, B.L., Verma, A., & Hancock, B.H. 2017. Aligning sampling and case selection in quantitative-qualitative research designs: establishing generalizability limits in mixed-method studies. *Ethnography*, 0(00):1-27. doi:10.1177/1466138117725341
- Szulanski, G., Ringov, D., & Jensen, R.J. 2016. Overcoming stickiness: how the timing of knowledge transfer methods affects transfer difficulty. *Organization Science*, 27(2):304-322. doi:10.1287/orsc.2016.1049

- Szulanski, G. 1995. Unpacking stickiness: An empirical investigation of the barriers to transfer best practice inside the firm. *Academy of Management Journal*, 17: 437-441.
- Szulanski, G. 1996. Exploring internal stickiness: impediments to the transfer of best practice within the firm. *Strategic Management Journal*, 17: 27-43.
- Szulanski, G. 2000. The process of knowledge transfer: a diachronic analysis of stickiness. *Organizational Behaviour and Human Decision Processes*, 82(1): 9-27. doi:10.1006/obhd.2000.2884
- Szulanski, G. 2003. *Sticky knowledge: barriers to knowing in the firm*. London: Sage.
- Szulanski, G., & Jensen, R.J. 2004. Overcoming stickiness: an empirical investigation of the role of the template in the replication of organisational routines. *Managerial and Decision Economics*, 25(6-7):347-363. doi:10.1002/mde.1195
- Takeuchi, H. 2013. Knowledge-based view of strategy. *Universia Business Review*, Cuarto Trimestre: 68-79.
- Takeuchi, H. 2006. The new dynamism of the knowledge-creating company, in Takeuchi, H., & Shibata, T. *Japan moving toward a more advanced knowledge economy: advanced knowledge-creating companies*. Washington, D.C: World Bank Institute. 1-9.
- Talaja, A. 2012. Testing VRIN framework: resource value and rareness as sources of competitive advantage and average performance. *Management*, 17(2):51-64.
- Tan, C.L., & Nasurdin, A.M. 2011. Human resource management practices and organisational innovation: assessing the mediating role of knowledge management effectiveness. *The Electronic Journal of Knowledge Management*, 9(2): 155-167.
- Tashakkori, A., & Creswell, J.W. 2007. Editorial: the new era of mixed methods. *Journal of Mixed Methods Research*, 1(1):1-5.
- Tashakkori, A., & Teddlie, C. 2010a. Overview of contemporary issues in mixed methods research, in Tashakkori A., & Teddlie, C. *Mixed methods in social and behavioural research*. 2<sup>nd</sup> ed. Thousand Oaks, CA: Sage. 1-41.
- Tashakkori, A., & Teddlie, C. 2010b. Epilogue: current developments and emerging trends in integrated research methodology, in Tashakkori A., & Teddlie, C. *Mixed methods in social and behavioural research*. 2<sup>nd</sup> ed. Thousand Oaks, CA: Sage. 803-826.

- Tashakkori, A., & Teddlie, C. 2003. *Handbook of mixed methods in social and behavioural research*. Thousand Oaks, CA: Sage.
- Teddlie, C., & Tashakkori, A. 2009. *Foundations of mixed methods research: integrating quantitative and qualitative approaches in the social and behavioural sciences*. Thousand Oaks, CA: Sage
- Teddlie, C., & Tashakkori, A. 2012. Common “core” characteristics of mixed methods research: a review of critical issues and call for greater convergence. *American Behavioural Scientist*, 56(6):774-788. doi:10.1177/0002764211433795
- Teece, D.J. 2013. Nonaka’s contribution to the understanding of knowledge creation, codification and change, in von Krogh, G., Takeuchi, H., Kaje, K., & Canton, C.G. *Towards organisational knowledge*. Houndmills: Palgrave Macmillan.
- Teece, D.J., Pisano, G., & Shuen. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal*, 18:509-533. doi:10.1142/9789812796929\_0003
- Teixeira, E.K., Oliveira, M., & Curado, C.M. 2019. Pursuing innovation through knowledge sharing: Brazil and Portugal. *International Journal of Knowledge Management*, 15(1): 69-84. doi:10.4018/IJKM.2019010105
- Teo, J.T.C., Nishant, R., Goh, M., & Agarwal, S. 2011. Leveraging collaborative technologies to build a knowledge sharing culture at HP analytics. *MIS Quarterly Executive*, 10(1):1-8.
- Theriou, N.G., Aggelidis, V., & Theriou, G. 2009. A theoretical framework contrasting the resource-based perspective and the knowledge-based view. *European Research Studies*, XII(3):177-190.
- Thompson, M., & Heron, M. 2005. The difference a manager can make: organisational justice and knowledge worker commitment. *International Journal of Human Resource Management*, 16: 383-404. doi:10.1080/0958519042000339561
- Tobin, P.J., & Franze M. 2005. *Organisational structure and knowledge*. Available at: [https://repository.up.ac.za/bitstream/handle/2263/4472/Tobin\\_Organisational%282005%29.pdf?sequence=1&isAllowed=y](https://repository.up.ac.za/bitstream/handle/2263/4472/Tobin_Organisational%282005%29.pdf?sequence=1&isAllowed=y). Accessed 12 April 2018.
- Tsheola, J., Ledwaba, M., & Nembambula, P. 2013. State-owned enterprises on the global business stage: whither the South African owner-publics. *Politeia* 32(2): 20-36.
- Tsoukas, H., & Vladimirou, E. 2001. What is organizational knowledge? *Journal of*

- Management Studies*, 38(7):973-993. doi:10.1111/1467-6486.00268
- Trees, L. 2016. Knowledge transfer mentoring—Part 1 why your km strategy should include mentoring. Available at: [Knowledge transfer mentoring—Part 1 Why your KM strategy should include mentoring \(kmworld.com\)](#) (Accessed 01 November 2020).
- Trochim, W.M.K., & Donnelly, J. 2007. *The research methods knowledge base*. 3<sup>rd</sup> ed. Mason, OH: Thomson Custom Publishing.
- Turvani, M. 2001. Microfoundations of knowledge dynamics within the firm. *Industry and Innovation*, 8(3): 309-323. doi:10.1080/13662710120104600
- Tzortzaki, A.M., & Mihiotis, A. 2014. A review of knowledge management theory and future directions. *Knowledge and Process Management*, 21(1):29-41. doi:10.1002/kpm.1429
- University of South Africa. 2007. *Policy on research ethics*. Pretoria: UNISA
- Urbancova, H., & Linbartiva, L. 2011. Staff turnover as a possible threat to knowledge loss. *Journal of Competitiveness*, (3):84-98.
- Vaiman, V., & Vance, C.M. 2008. *Smart talent management: building knowledge assets for competitive advantage*. UK: Edward Elgar Publishing Limited.
- Venkatesh, V., Brown, S.A., & Bala, H. 2013. Bridging the qualitative-quantitative divide: guidelines for conducting mixed methods research in information systems. *MIS Quarterly*, 37(1):21-54.
- Vlasov, M., & Panikarova, S. 2015. Knowledge creation in state-owned enterprises. *Mediterranean Journal of Social Sciences*, 6(4):475-480.  
doi:10.5901/mjss.2015.v6n4p475
- van den Berg, H.A. 2013. Three shapes of organizational knowledge. *Journal of Knowledge Management*, 17(6):873-901. doi:10.1108/13673271311315141
- Von Hippel, E. 1994. Sticky Information and the locus of problem solving: implications for innovation. *Management Science*, 40(4):429-439.
- von Krogh, G., Nonaka, I., & Rechsteiner, L. 2012. Leadership in organisational knowledge creation: a review and framework. *Journal of Management Studies*, 49(1): 240-277.  
doi:10.1111/j.1467-6486.2010.00978.x
- von Krogh, G., & Grand, S. 2002. From economic theory towards a knowledge-based theory

- of the firm: conceptual building blocks, in Choo, C.W., & Bontis, N. *Strategic management of intellectual capital and organizational management*. Oxford: Oxford University Press. 163-183.
- von Krogh, G., & Wallin, M.W. 2011. The firm, human capital, and knowledge creation, in Burton-Jones, A., & Spender, J.C. *The oxford handbook of human capital*. Oxford: Oxford University Press. 261-286.
- Wamundila, S., & Ngulube, P. 2011. Enhancing knowledge retention in higher education: a case of the University of Zambia. *South African Journal of Information Management*, 13(1): 1-9. doi:10.4102/sajim.v13i1.439
- Wang, H. 2014. Theories for competitive advantage, in Hasan, H. *Being practical with theory: a window into business research*. Wollongong, Australia: THEORI, 33-43. Available at [http://eurekaconnection.files.wordpress.com/2014/02/p-33-43-theoriesof-competitive-advantage-theori-ebook\\_finaljan2014-v3.pdf](http://eurekaconnection.files.wordpress.com/2014/02/p-33-43-theoriesof-competitive-advantage-theori-ebook_finaljan2014-v3.pdf) (Accessed 14 May 2017)
- Walsh, J.P. & Ungson, G.R. 1991. Organizational memory. *Academy of Management Review*, 16(10):57-91.
- Wendy Ovens & Associates. 2013. *The role and significance of state-owned enterprises, public entities in the promotion of urban growth and development in South Africa*. Available at <http://www.cogta.gov.za/cgta-2016/wp-content/uploads/2016/05/IUDF-STATE-OWNED-ENTERPRISES.pdf> (Accessed 01 February 2017).
- Wernerfelt, B. 1984. A resource-based view of the firm. *Strategic Management Journal*, 5:171-180.
- Whelan, E., & Carcary, M. 2011. Integrating talent and knowledge management: where are the benefits. *Journal of Knowledge Management*, 15(4): 675-687. doi:10.1108/13673271111152018
- Wright, P.M., Dunford, B.B., & Snell, S.A. 2001. Human resources and the resource-based view of the firm. *Journal of Management*, 27:701-721.
- Wright, P.M., McMahan, G.C., & McWilliams, A. 1994. Human resources and sustainable competitive advantage: a resource-based perspective. *International Journal of Human Resource Management*, 5(2): 301-326.

- Wright, P.M., Smart, D.L., & McMahan, G.C. 1995. Matches between human resources and strategy among NCAA basket teams. *Academy of Management Journal*, 38(4): 1052-1074.
- Yin, R. 2014. *Case study research: design and methods*. 5<sup>th</sup> ed. London: Sage.
- Yin, R. 2012. *Applications of case study research*. Thousand Oaks: Sage Publications, Inc.
- Yin, R. 2011. *Qualitative research from start to finish*. New York: The Guilford Press.
- Yin, R. K. 2009. *Case study research: design and methods*. 4<sup>th</sup> ed. London: Sage.
- Yin, R. K. 1994. *Case study research: design and methods*. Thousand Oaks: Sage.
- Zaim, H., Keceli, Y., Jaradat, A., & Kastrati, S. 2018. The effects of knowledge management processes on human resource management: moderating role of knowledge utilization. *Journal of Science and Technology Policy Management*, 9(3):310-328. doi:10.1108/jstpm-02-2018-0011
- Zieba, M. 2016. Knowledge safety in small and medium-sized service companies: case study analysis. *Proceedings of the European Conference on Knowledge Management (ECKM)*, Belfast: 984-991.
- Zieba M., & Durst S. 2018. Knowledge Risks in the Sharing Economy, in Vătămănescu EM., Pînzaru F. (eds) *Knowledge management in the sharing economy. knowledge management and organizational learning*, Vol 6. Cham: Springer. 253-270.
- Ziesmer, T. 2013. A knowledge-based view of the porter hypothesis. *Environmental Policy and Governance*, 23:193-208. doi:10.1002/eet.1609

**Appendix A: Interview protocol for collecting data from HR managers in the SOEs**

**Section A: Attributes and treatment of organisational knowledge loss**

1. Does the organisation recognise knowledge loss as a key strategic issue?

.....  
.....  
.....  
.....

2. If yes, how well has the human resource management (HRM) taken the ownership and management of organisational knowledge loss?

.....  
.....  
.....  
.....

3. In your own view, what contribute to the landscape of organisational knowledge loss in your company?

.....  
.....  
.....  
.....

4. In order of priority, which ones from above are considered the key attributes of organisational knowledge loss in the company?

.....  
.....  
.....

.....  
5. Does the firm put knowledge and human resources at the centre of the business strategy? If Yes or No, please explain

.....  
.....  
.....  
.....

6. How does it prioritise knowledge and employees in the organisational strategy as sources of sustained competitive advantage?

.....  
.....  
.....  
.....

7. Do you consider loss of organisational knowledge to be Knowledge Management (KM) or HRM or an organisational issue in your company? If Yes or No, please explain why.

.....  
.....  
.....  
.....

8. Do you think current organisational policies on employment equity contribute to knowledge attrition in the organisation? If Yes or No, please explain why.

.....  
.....  
.....



.....

**Section B: Role of human resource management in supporting KM processes in the SOEs.**

9. Is there a role for HRM in knowledge management processes of the organisation?

.....  
.....  
.....  
.....

10. If yes, to what extent does HRM facilitate or support management of knowledge in the organisation?

.....  
.....  
.....  
.....

11. Do you see HRM role in building knowledge management capabilities in the organisation? If Yes or No, please explain how.

.....  
.....  
.....  
.....

12. How close are you as HR Manager in working with knowledge managers or practitioners in managing organisational knowledge?

.....  
.....  
.....  
.....

13. What do you consider key HRM practices that enhance knowledge management capabilities in the organisation?

.....  
.....  
.....  
.....

14. Why do you think these practices or systems enhance knowledge management capability in the organisation?

.....  
.....  
.....  
.....

**Section C: Knowledge-based HRM recruitment practices supporting KM activities.**

15. Does your HRM recruitment practice support the company in identifying, selecting and recruiting potential candidates with required relevant knowledge, learning and collaboration or networking capabilities? Please explain

.....  
.....  
.....

.....  
16. How long does it take the organisation to find replacement of the critical skill and expertise lost due to voluntary turnover? Please explain

Within 3 to 6 months	
Within 6 months to 1 year	
Within 1 to 2 years	
2 years plus	

At what cost to the company?

.....  
.....  
.....  
.....

17. How does your recruitment process play a role in assisting the organisation to identify candidates with relevant knowledge, learning and networking capabilities?

.....  
.....  
.....  
.....

18. What knowledge management attributes do you focus on as part of the HR selection and recruitment process?

.....

.....  
.....  
.....

19. Why do you focus on such knowledge attributes in the selection and recruitment process?

.....  
.....  
.....  
.....

20. How effective is your HR recruitment practice in attracting potential employees with the required and relevant knowledge attributes?

.....  
.....  
.....  
.....

**Section D: Knowledge-based HRM development practices supporting KM activities.**

21. What knowledge-driven staff training and development practices do you have in place to support knowledge management processes such as knowledge creation, transfer, retention and use?

.....  
.....  
.....  
.....

22. How is your staff training and development designed and implemented to fit the current and future required knowledge and skills needs of the organisation?

.....  
.....  
.....  
.....

23. Would say that that on job boarding and shadowing are part of knowledge transfer and management strategy and are driven and supported by HRM practices in the organisation. Please explain

.....  
.....  
.....  
.....

24. How long does it take to bring the new recruit up to a speed in the vacant position?

.....  
.....  
.....  
.....

25. Does your staff training and development practice focus on the job specific knowledge acquisition, sharing, application and retention?

.....  
.....  
.....

.....  
26. How effective are these staff training and development practices in developing the current and future knowledge and skills?

.....  
.....  
.....  
.....

27. To what extent does the organisation ensure return on investment is derived from staff training and development initiatives?

.....  
.....  
.....  
.....

**Section E: Knowledge-based HRM retention system**

28. What does HRM do to prevent such a turnover from happening?

.....  
.....  
.....  
.....

29. Do you have a programme for the retiring experts with mission critical expertise, knowledge and skills? If yes or no, please explain.

.....  
.....

.....  
.....

30. Would you say that succession planning is being driven by HRM policy and is part of organisational knowledge management strategy? Please explain

.....  
.....  
.....  
.....

31. How does the company reward and recognise employees for their contribution to knowledge management activities and initiatives?

.....  
.....  
.....  
.....

32. Are such rewards and recognitions based on individual or group based performance?

.....  
.....  
.....  
.....

33. How effective are these rewards and recognitions in promoting knowledge management activities such as knowledge sharing and retention?

.....  
.....  
.....  
.....

34. What compensation practices do you have to support the retention and sharing of the required mission-critical skills, knowledge and expertise?

.....  
.....  
.....  
.....

35. How do these practices support the acquisition, sharing, retention and use of knowledge throughout the organisation?

.....  
.....  
.....  
.....

36. How does the performance management system reward for the required knowledge sharing behavioural expectations? Please explain

.....  
.....  
.....  
.....

37. How effective are these rewards in promoting knowledge management activities such as knowledge sharing and retention?

.....  
.....  
.....  
.....

38. Is knowledge management part of the performance appraisal system in the organisation? If



yes or no, please explain

.....

.....

.....

.....

39. How successful are these knowledge-based HRM retention practices in managing and reducing organisational knowledge loss?

.....

.....

.....

.....

**Section F: Knowledge-based organisational culture and design**

40. How does organisational structure support knowledge management behaviours such as acquisition, creation, sharing and retention of knowledge?

.....

.....

.....

.....

41. What role does the HR department play in facilitating organisational structure that encourage knowledge management behaviors?

.....

.....

.....  
.....

42. What would you consider the role of HR in building a knowledge-centric organisational culture?

.....  
.....  
.....  
.....

43. Does the organisational culture support knowledge management? If Yes or No, please explain.

.....  
.....  
.....  
.....

44. How does the HR help create and support enabling organisational culture for knowledge management activities?

.....  
.....  
.....  
.....

45. From HRM perspective, what do you consider barriers to effective knowledge management strategy in your organisation?

.....  
.....

.....  
.....

46. How does the organisational leadership support knowledge management?

.....  
.....  
.....  
.....

47. Overall, do you consider HRM to be creating an organisational environment conducive for effective knowledge management?

.....  
.....  
.....  
.....

**Section G: HRM practices integration into knowledge management processes**

48. Do you consider HRM practices aligned and focused on managing organisational knowledge loss?

.....  
.....  
.....  
.....

49. Is there such a need for the integration of human resource management practices in knowledge management?

.....  
.....  
.....  
50. How should such integration be approached, facilitated and implemented in the organisation?

.....  
.....  
.....  
51. On the overall, how effective are HRM practices in facilitating the management and reduction of organisational knowledge loss?

.....  
.....  
.....  
52. What more can be done to make HRM practices effective in facilitating the retention and management of knowledge in your organisation?

.....  
.....  
.....  
Thank you for your time and generosity in helping with this doctoral research study

**Appendix B: Questionnaire distributed to employees and KM practitioners in the SOEs**

**SECTION A: PROFILE OF THE RESPONDENTS**

1. Gender

Male	
Female	
Other	

2. Please indicate your relevant job title

Knowledge Manager	
Knowledge Specialist	
Knowledge Advisor	
Other: employees (please specify the role)	

**SECTION B: AWARENESS OF ORGANISATIONAL KNOWLEDGE LOSS AND MANAGEMENT**

3. Please rate whether you agree with the following statements relating to the recognition and causes of organisational knowledge loss in the state-owned enterprise, from strongly agree to strongly disagree.

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The company recognises knowledge as a fundamental resource.					
The company recognises its employees as sources of knowledge.					
The company recognises organisational knowledge as a source of competitive advantage.					

The company recognises knowledge loss as a key organisational strategic issue.					
Loss of expertise causes knowledge loss in my organisation.					
Lack of retention strategy causes knowledge loss in my organisation.					

4. Please rate whether you agree with the following statements relating to the knowledge management practices and their effectiveness in addressing loss of tacit knowledge in the state-owned enterprises, from strongly agree to strongly disagree.

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The company uses coaching program as a way of sharing knowledge.					
The company uses mentoring program as a way of managing knowledge loss.					
The company provides training opportunities that improve skills.					
The company actively encourages knowledge workers to participate in communities of practice.					
The company uses job rotation for knowledge workers to gain experience by moving them across different functional areas or divisions.					
The company has a program for retiring knowledge experts (subject matter experts) for ensuring knowledge sharing.					

The company uses on job boarding as part of knowledge management strategy.					
The company has a knowledge-harvesting program in place.					
The company has a succession plan program aimed at employee development for internal recruitment.					
The company provides expert forums for experts to share knowledge with knowledge workers.					
On the overall, these knowledge management strategies are effective for ensuring the company reduces knowledge loss.					

**SECTION C: HUMAN RESOURCE MANAGEMENT PRACTICES SUPPORTING KNOWLEDGE MANAGEMENT ACTIVITIES**

5. Please rate whether you agree with the following statements relating to human resource recruitment practice supporting knowledge management activities, from strongly agree to strongly disagree.

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Recruitment practice supports the company in recruiting potential employees with required knowledge management behaviours (such as knowledge sharing, learning, networking capabilities, etc.).					
The selection of employees					

focuses on their potential to learn and grow within the company.					
Recruitment practice focuses on knowledge management attributes (such as coaching, mentoring, innovation, knowledge sharing, teamwork, team player, etc.).					
The selection of employees emphasises their overall fit to the company (personality, values, norms, etc.).					
Recruitment practice is effective in attracting potential employees with the required knowledge attributes (such as coaching, mentoring, innovation, knowledge sharing, teamwork, team player, etc.).					

6. Please rate whether you agree with the following statements relating to staff training practice supporting knowledge management activities, from strongly agree to strongly disagree.

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The company provides many benefits for employees to continually learn new knowledge (e.g., paying tuition costs, supporting attendance of conference or other learning opportunities, etc.).					
The company uses job rotation for employees to gain experience by moving them across different functional areas.					
The company uses on job shadowing as part of knowledge management strategy.					
The company invests					



considerable resources in building communities of practice (e.g., providing technical support, budgets, rewards, etc.).					
Staff training focuses on job specific knowledge acquisition, application, sharing and retention.					
Staff training practice is designed to fit the current knowledge needs of the company.					
Staff training practice is designed to fit the future knowledge needs of the company.					
The company uses coaching program as a way to encourage employees to learn from each other.					
The company uses mentoring program as a way of developing employees.					
Staff training practice is effective in developing the current and future knowledge and skills.					

7. Please rate whether you agree with the following statements relating to staff retention practice supporting knowledge management activities, from strongly agree to strongly disagree.

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The company rewards employees for their contribution to knowledge management activities.					
The company rewards teams for sharing knowledge.					
The company rewards teams who come up with the best					

new ideas.					
The company rewards individuals rather than teams for performance.					
The company's performance management practices emphasise knowledge sharing behaviours.					
Knowledge management is part of the performance management system.					
The company has a policy on succession plan to ensure knowledge retention.					
Company's reward systems are effective in promoting knowledge management activities such as knowledge sharing and retention.					
The company offers a variety of incentives (e.g., short-term bonus scheme etc.) to attract skills.					
On average, the pay level of our mission-critical workers is higher than that of our competitors.					

1. Please rate whether you agree with the following statements relating to the overall effectiveness of human resource management (HRM) practices in supporting knowledge management activities in the state-owned enterprises, from strongly agree to strongly disagree.

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The company's recruitment practice is effective in supporting knowledge management.					
The company's staff training practice is effective in					

supporting knowledge management.					
The company's staff retention practice is effective in supporting knowledge management.					
Human resource department drives organisational culture that is effective in supporting knowledge sharing.					
Human resource department drives organisational structure that is effective in supporting knowledge management.					
On average, our human resource management practices are effective in supporting knowledge management.					

**SECTION D: ORGANISATIONAL CULTURE AND DESIGN**

9. Please rate whether you agree with the following statements relating to organisational culture and structure supporting knowledge management, from strongly agree to strongly disagree.

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Organisational culture supports knowledge management behaviours (e.g. acquisition, creation, sharing and retention of knowledge).					
Organisational culture of silos is a barrier to effective knowledge management in the company.					
Organisational red tapes are barriers to effective knowledge management in the company.					
The company's human					

resource department plays a critical role in facilitating knowledge-centric culture.					
Organisational structure facilitates the knowledge sharing.					
The company has a knowledge management unit in the structure.					
The company's human resource department has a role to play in facilitating the structure that supports knowledge management behaviours.					
The company' leadership supports knowledge management.					

10. Please add any further comment here.

Thank you for participating in my research study and for completing the questionnaire.

## Appendix C: Supervisor introductory letter for the interview protocol



University of South Africa  
School of Arts  
Department of Information Science  
P O Box 392  
UNISA  
0003  
15 October 2018

### To whom it may concern

This letter serves to introduce Mr Malefetjane Phineas (Benny) Phaladi who is registered as a doctoral student in the Department of Information Science at the University of South Africa (UNISA). Mr Phaladi is currently carrying out a study on **“Framework for Integrating Knowledge Management and Human Resource Management for the Reduction of Organisational Knowledge Loss in Selected South African State Owned Enterprises”**. The importance of integrating human resources management practices in the management of organisational knowledge loss in the public utility sector cannot be overemphasised. The purpose of the study to develop a framework for integrating human resource (HR) management practices in knowledge management for the reduction of organisational knowledge loss in selected South African state owned enterprises. The loss of organisational knowledge through various drivers threaten the state owned enterprises (SOEs) as the national instruments for economic development and their role in positioning South Africa as a developmental state. SOEs as vehicle for development in the country cannot continue business as usual without having an integrated framework for managing their organisational knowledge assets and the loss of these organisational knowledge resources thereof.

In order to undertake the study, Mr Phaladi will need to conduct interviews with a few purposively selected human resource managers in the selected SOEs for theory development in the first phase of the study. Furthermore, in the second phase of the study he will also distribute a survey questionnaire to knowledge management practitioners across the public utility sector for testing theory developed during the interviews of HR managers. It is in that spirit that the Department of Information Science kindly requests your approval to render any possible support to Mr Phaladi in order to effect data collection process to complete the study as required.

If you require any further clarification pertaining to the study project, please free to contact Prof Patrick Ngulube, who is the supervisor of this research project, on 012 429 2832 or via email [ngulup@unisa.ac.za](mailto:ngulup@unisa.ac.za).

Yours sincerely

A handwritten signature in black ink, appearing to read "P. Ngulube", written over a horizontal line.

Prof Patrick Ngulube



University of South Africa  
Preller Street, Muckleneuk Ridge, City of Tshwane  
PO Box 392 UNISA 0003 South Africa  
Telephone: +27 12 429 3111 Facsimile: +27 429 12 429 4150  
[www.unisa.ac.za](http://www.unisa.ac.za)

## Appendix D: Supervisor introductory letter for the survey questionnaire



University of South Africa  
School of Arts  
Department of Information Science  
P O Box 392  
UNISA  
0003  
15 September 2020

### To whom it may concern

This letter serves to introduce Mr Malefetjane Phineas (Benny) Phaladi who is registered as a doctoral student in the Department of Information Science at the University of South Africa (UNISA). Mr Phaladi is currently carrying out a study on "**Framework for Integrating Knowledge Management and Human Resource Management for the Reduction of Organisational Knowledge Loss in Selected South African State Owned Enterprises**". The importance of integrating human resources management practices in the management of organisational knowledge loss in the public utility sector cannot be overemphasised. The purpose of the study is to develop a framework for integrating human resource management practices in knowledge management for the reduction of organisational knowledge loss in selected South African state owned enterprises. The loss of organisational knowledge through various drivers threaten the state owned enterprises (SOEs) as the national instruments for economic development and their role in positioning South Africa as a developmental state. SOEs as vehicle for development in the country cannot continue business as usual without having a kind of an integrated framework for managing their organisational knowledge assets and the loss of these organisational knowledge resources thereof.

In the first phase of the study, Mr Phaladi conducted interviews with a few purposively selected human resource managers in the selected SOEs for theory development for testing in the second phase of the study. In the second phase of the study he will distribute a survey questionnaire to knowledge management practitioners and employees across the public utility sector to test the theory developed during the interviews with HR managers. It is in that spirit that the Department of Information Science kindly requests for your approval for him to conduct his research and render him any possible support.

If you require any further clarification pertaining to the study project, please free to contact Prof Patrick Ngulube, who is the supervisor of this research project, on 012 429 2832 or via email [ngulup@unisa.ac.za](mailto:ngulup@unisa.ac.za).

Yours sincerely

A handwritten signature in black ink, appearing to read "Patrick Ngulube", written over a horizontal line.

Prof Patrick Ngulube



University of South Africa  
Preller Street, Muckleneuk Ridge, City of Tshwane  
PO Box 392 UNISA 0003 South Africa  
Telephone: +27 12 429 3111 Facsimile: +27 429 12 429 4150  
[www.unisa.ac.za](http://www.unisa.ac.za)

**Appendix E: Request for permission to conduct research at the state-owned enterprises**

216 Zaragoza Park  
953 11<sup>th</sup> Avenue  
Wonderboom South  
0084  
22 November 2018

Dear Sir or Madam,

I, Malefetjane Phineas (Benny) Phaladi am conducting research with Patrick Ngulube, a Professor in the School of Interdisciplinary Research and Graduate Studies and attached to Department of Information Science towards a PhD at the University of South Africa. We are inviting you to participate in a study entitled **“Framework for Integrating Knowledge Management and Human Resource Management for The Reduction of Organisational Knowledge Loss in the Selected South African State-owned Enterprises”**.

The aim of the study is to develop a framework for integrating human resource management practices in knowledge management for the reduction of organisational knowledge loss in the selected South African state-owned enterprises. Your company has been selected because it is one of the most critical instruments to drive economic growth and is at the centre of positioning South Africa as a development state. The participation of your company in this study will certainly assist us in developing a framework that can be applied in the SOEs in similar transitions as far as the management and reduction of organisational knowledge loss is concerned. Moreover, your participation will also assist in the process of finding a solution to the national problem of knowledge loss in the South African companies.

The study will entail conducting the interviews with a purposively selected human resource managers and survey questionnaire distributed randomly to the knowledge management practitioners and employees in the state-owned enterprises.

I wish to thank you in anticipation for your forthcoming positive response and your organisation becoming part of this important research study.

Yours sincerely

---

Malefetjane Phineas (Benny) Phaladi

PhD Student: University of South Africa

Mobile: 082 388 8960; E-mail address: [35610018@mylife.unisa.ac.za](mailto:35610018@mylife.unisa.ac.za); or  
[benny.phaladi@gmail.com](mailto:benny.phaladi@gmail.com)



## Appendix F: Survey questionnaire link e-mailed to the participants.

### **Benny Phaladi**

---

**From:** Benny Phaladi  
**Sent:** Wednesday, 07 October 2020 10:26  
**To:** [REDACTED]  
**Cc:** 'PHALADI M P'; 'Benny Phaladi'  
**Subject:** Invitation to participate in a Doctoral Research Study  
**Attachments:** Ethics Certificate Phaladi Department of Information Science.pdf; Introductory Letter to SOEs Survey Prof Ngulube.pdf; Informed Consent PhaladiMP Questionnaire.pdf

Dear Participant

I hope that e-mail finds you in good health.

You are invited to take part in my academic (PhD) research project titled: **"Framework for Integrating Knowledge Management and Human Resource Management for the Reduction of Organisational Knowledge Loss in Selected State Owned Enterprises"**. Ethical clearance for this study has been received from the Research Ethics Committee of the Department of Information Science at University of South Africa (UNISA), Reference #: 2020-DIS-0018.

The purpose of the study is to develop a framework for integrating knowledge management and human resource management [HRM] for the reduction of organisational knowledge loss in the South African state owned companies. This is achieved by examining how HRM practices support knowledge management processes and behaviours in the state-owned companies.

Please note the following regarding your participation in the study:

- Your participation in this research project is entirely voluntary
- Participants and participating companies remain anonymous
- If you feel, at any given time, that you want to halt your participation in the study, please feel free to do so without any reason
- Your information and responses provided will remain anonymous
- This survey questionnaire will take approximately 10 to 15 minutes
- In case you experience technical problems when completing the survey online, please feel free to email me, I will be a position to send you a soft copy for the manual completion process.

Please refer to the attached: letter of introduction, Ethics Clearance approval and informed consent information leaflet for the research ethics aspect of the study.

Please complete this questionnaire on or before 30 October 2020 by following this link:  
<https://forms.office.com/Pages/ResponsePage.aspx?id=jjuayqM-mUekPIUQOY56O1jB2aqk63lFvEm9Tb7cJj9UMTNQWDIwOFpDT0Q4WVdaUTU2ME1ZUUIYSC4u>

Thank you in advance for completing the questionnaire.

Yours sincerely

Mr Benny Malefetjane Phaladi [PhD Candidate]  
Manager: LIS IT & Systems  
Building 20, Office 115A Pretoria Campus  
Private Bag x680 Pretoria 0001 Republic of South Africa  
Tel.: 27 (12) 382 5487 Fax.: 27 (12) 382 5485  
E-mail address.: [phaladimp@tut.ac.za](mailto:phaladimp@tut.ac.za) Website.: [www.tut.ac.za](http://www.tut.ac.za)

## Appendix G: Ethical approval certificate from the Research Review Committee



### COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS REVIEW COMMITTEE

02 November 2018

Dear Malefetjane Phineas Phaladi

NHREC Registration # : Rec-240816-052

CREC Reference # : 2018-CHS-0220

Name : Malefetjane Phineas Phaladi

Student #: 35610018

**Decision:**  
**Ethics Approval from 02 November 2018 to 01 November 2023**

**Researcher(s):** Malefetjane Phineas Phaladi

**Supervisor(s):** Patrick Ngulube  
School of Interdisciplinary Research and Graduate Studies

**Framework for integrating knowledge management and human resource management for the reduction of organisational knowledge loss in selected South African state owned enterprises**

**Qualifications:** PhD

Thank you for the application for research ethics clearance by the Unisa College of Human Sciences Research Ethics Committee for the above mentioned research. Ethics approval is granted for five years.

The **low risk application** was **reviewed and expedited** by the Chair of College of Human Sciences Research Ethics Committee on the 24 October 2018 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:



University of South Africa  
Preller Street, Muckleneuk Ridge, City of Tshwane  
PO Box 392 UNISA 0003 South Africa  
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150  
[www.unisa.ac.za](http://www.unisa.ac.za)

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the Department of Psychology Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No field work activities may continue after the expiry date (**01 November 2019**). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

*Note:*

*The reference number 2018-CHS-0220 should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours sincerely,



Signature :

Prof AH Mavhandu-Mudzusi  
Chair : CHS Research Ethics Committee  
E-mail: mmudza@unisa.ac.za  
Tel: (012) 429-2055



Signature :

Professor A Phillips  
Executive Dean : CHS  
E-mail: Phillip@unisa.ac.za  
Tel: (012) 429-6825



University of South Africa  
Pretorius Street, Muckleneuk Ridge, City of Tshwane  
PO Box 392 UNISA 0003 South Africa  
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150  
[www.unisa.ac.za](http://www.unisa.ac.za)

## Appendix H: Ethics Approval Departmental Ethics Review Committee



### DEPARTMENT OF INFORMATION SCIENCE ETHICS REVIEW COMMITTEE

15 July 2020

Dear Mr Malefetjane Phineas Phaladi

**Decision:**

**Ethics Approval from 15 July  
2020 to 15 July 2024**

DIS Registration #: Rec-20200715

References #: 2020-DIS-0018

Name: MP Phaladi

Student #: 35610018

---

Researcher(s): Mr Malefetjane Phineas Phaladi  
[35610018@mylife.unisa.ac.za](mailto:35610018@mylife.unisa.ac.za)  
082 388 8960

Supervisor(s): Prof P Ngulube  
[ngulup@unisa.ac.za](mailto:ngulup@unisa.ac.za)

**Framework for integrating knowledge management and human resource  
management for the reduction of organisational knowledge loss in the  
selected South African State Owned Enterprises.**

Qualifications: Doctoral Study

---



University of South Africa  
Preller Street, Muckleneuk Ridge, City of Tshwane  
PO Box 392 UNISA 0003 South Africa  
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150  
[www.unisa.ac.za](http://www.unisa.ac.za)

The **low risk application** was reviewed and expedited by the Department of Information Science Research Ethics Committee on 14 July 2020 in compliance with the Unisa Policy on Research Ethics and the Standards Operating Procedure on Research Ethics Risk Assessment. The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy of Research Ethics.
2. Any adverse circumstances arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the Department of Information Science Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards the protection of participants' privacy and the confidentiality of the data should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no. 4 of 2013; Children's Act no. 38 of 2005 and the National Health Act, no. 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
7. Research must consider rules for engagement that are in line with observing COVID 19 regulations.
8. No field work activities may continue after the expiry date of **15 July 2024**. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

*Note:*

*The reference number **2020-DIS-0018** should be clearly indicated on all forms of communication with the intended research participants, as well as the Committee.*



University of South Africa  
Preller Street, Muckleneuk Ridge, City of Tshwane  
PO Box 392 UNISA 0003 South Africa  
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150  
[www.unisa.ac.za](http://www.unisa.ac.za)

Appendix I: An example of approval letter from the participating SOE

[REDACTED]

YOUR REF: [REDACTED]  
OUR REF: Research Project  
[REDACTED] [REDACTED]  
[REDACTED] [REDACTED]  
DATE: 09 April 2019

**Malefetjane Phineas Phaladi**  
216 Zaragoza Park  
953 11<sup>th</sup> Avenue  
Wonderboom South  
0084

**RE: PERMISSION TO CONDUCT RESEARCH AT THE S [REDACTED] [REDACTED] [REDACTED] [REDACTED]  
[REDACTED]**

We acknowledge your letter received, 04 January 2019

This letter serves to inform you that [REDACTED] accept your invitation to participate in a study that involves Human resources management practices, and will avail respective people for the interviews in order to assist with the research project.

Your point of contact will be the HR Senior Manager [REDACTED] by email [REDACTED], who will direct you to the relevant people.

Yours faithfully,

[REDACTED]

[REDACTED]

## Appendix J: Informed consent with HR Managers in the participating SOEs

---

### DEPARTMENT OF INFORMATION SCIENCE

---

#### INTERVIEW SCHEDULE INFORMED CONSENT WITH HR MANAGERS

*“FRAMEWORK FOR INTEGRATING KNOWLEDGE MANAGEMENT AND HUMAN RESOURCE  
MANAGEMENT FOR THE REDUCTION OF ORGANISATIONAL KNOWLEDGE LOSS IN SELECTED SOUTH  
AFRICAN STATE OWNED ENTERPRISES”*

I am Malefetjane Phineas (Benny) Phaladi, a PhD student for Information Science at the University of South Africa (UNISA). I am conducting a research study on **“Framework for Integrating Knowledge Management and Human Resource Management for The Reduction of Organisational Knowledge Loss in the Selected South African State Owned Enterprises”**. The importance of integrating human resources management practices in the management of organisational knowledge loss in the public utility sector cannot be overemphasized. The purpose of the study to develop a framework for integrating human resource management practices in knowledge management for the reduction of organisational knowledge loss in selected South African state owned enterprises. The loss of organisational knowledge through various drivers threaten the state owned enterprises (SOEs) as the national instruments for economic development and their role in positioning South Africa as a developmental state. SOEs as vehicle for development in the country cannot continue business as usual without having a kind of an integrated framework for managing their organisational knowledge assets and the loss of these organisational knowledge resources thereof.

The information in this interview schedule shall not be used for any other purposes other than for this study. You are not required to provide your name and as such, you will therefore remain anonymous. The aim of the interview is to explore the role of the human resource management practices in the management and reduction of organisational knowledge loss in the state owned enterprises. Should you have any question or seek any clarity, feel free to ask the researcher at any time of your participation at [benny.phaladi@gmail.com](mailto:benny.phaladi@gmail.com) or 082 388 8960.

---

I hereby give consent for me to participate in this study and that the information I provide in the questionnaire will be used for the accomplishment of this research project. The information provided will be treated with a high degree of confidentiality as stated in this consent form and will therefore remain as anonymous.

---

Participant signature

---

Date

## **Appendix K: CONSENT TO PARTICIPATE IN A RESEARCH QUESTIONNAIRE**

### **PROJECT TITLE:**

**FRAMEWORK FOR INTEGRATING KNOWLEDGE MANAGEMENT AND HUMAN MANAGEMENT FOR THE REDUCTION OF ORGANISATIONAL KNOWLEDGE LOSS IN SELECTED SOUTH AFRICAN STATE-OWNED ENTERPRISES**

Primary researcher: Mr. MP [Benny] Phaladi

Project supervisor: Prof Patrick Ngulube

### **Dear Prospective Participant**

My name is Malefetjane Phineas (Benny) Phaladi and I am doing research with Patrick Ngulube, a Professor in the Department of Information Science towards a doctoral degree at the University of South Africa. We are inviting you to participate in a study entitled “Framework for Integrating Knowledge Management and Human Resource Management for the Reduction of Organisational Knowledge Loss in Selected South African State-owned Enterprises” by completing a questionnaire by following this link:

<https://forms.office.com/Pages/ResponsePage.aspx?id=jIuayqM-mUekPIUQOY56O1jB2aqk63IFvEm9Tb7cJj9UMTNQWDIwOFpDT0Q4WVdaUTU2ME1ZUUIYSC4u>

### **WHAT IS THE PURPOSE OF THE STUDY?**

The purpose of the study to develop a framework for integrating knowledge management and human resource management for the reduction of organisational knowledge loss in selected South African public utilities.

### **WHY AM I BEING INVITED TO PARTICIPATE?**



You were selected as a possible participant in this study because you are an employee in the state-owned company, which it is important participant in the study. This research project is a mixed method research study. This questionnaire phase is the second phase in a mixed methods research data collection process. In the first phase of the study, the researcher conducted interviews with a few purposively selected human resource managers in the selected SOEs for theory development for testing in the second phase of the study. In the second phase of the study, he will distribute a survey questionnaire to knowledge management practitioners and employees across the public utility sector to test the theory developed during the interviews with HR managers.

### **WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?**

The research participants will be invited by e-mail to participate in the study by completing an online questionnaire by following this link:

<https://forms.office.com/Pages/ResponsePage.aspx?id=jIuayqM-mUekPIUQOY56O1jB2aqk63lFvEm9Tb7cJj9UMTNQWDIwOFpDT0Q4WVdaUTU2ME1ZUUIYSC4u>

The participant will require access to the Internet for the entire duration of the questionnaire. In the event that the participant struggle to complete the survey questionnaire online, the participants can request the researcher to e-mail a soft copy. The soft copy questionnaire can be printed and completed manually, and forwarded back to the researcher. The questionnaire will take approximately 10 to 15 minutes to complete.

### **CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?**

Participating in this study is voluntary and you are under no obligation to consent to participation. If you do decide to take part, you will be given this information sheet to keep. If

you feel, at any time that you want to stop your participation in this study, you are free to withdraw at any time and without giving a reason.

### **WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?**

Your participation in the study will go a long way in assisting the researcher to develop a framework for integrating human resource management practices in the management and reduction of organisational knowledge loss in the state-owned enterprises and other organisations in similar transitions.

### **ARE THERE ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?**

There is no potential harm or discomfort for the participation in this study. The researcher will make sure that the participants of the study experience no potential harm. Participation in the study is voluntary and the participants and participating state-owned enterprises shall remain anonymous.

### **WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?**

The participants and participating state-owned companies of this study are not required to disclose their names. Therefore, we do not foresee any personal risk being imposed on any respondents of this research study. The participation is voluntary and anonymous.

As part of the knowledge contribution to the scientific community, some parts of the study report may be submitted for publication in a peer-reviewed journals or conference proceedings. A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report.

## **HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?**

The researcher will store soft copies of your answers to the survey for a period of five years in a secured password protected environment for future research or academic purposes, electronic information will be stored on a password-protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. Hard copies will be shredded and/or electronic copies will be permanently deleted from the hard drive of the computer through the use of a relevant software programme.

## **WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?**

In line with ethical principles of research, you will not receive any payment or reward, financial or otherwise for your participation in this research study. Any costs incurred by the participant should be explained and justified in accordance with the principle of fairness.

## **HAS THE STUDY RECEIVED ETHICS APPROVAL?**

This study has received written approval from the Research Ethics Review Committee of the Department of Information Science at Unisa, References #: 2020-DIS-0018. A copy of the approval letter can be obtained from the researcher if you so wish.

## **HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?**

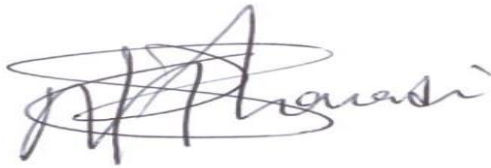
If you would like to be informed of the final research findings, please contact Malefetjane Phineas (Benny) Phaladi on 082 388 8960 / 012 382 5487 or [35610018@mylife.unisa.ac.za](mailto:35610018@mylife.unisa.ac.za) or [phaladimp@tut.ac.za](mailto:phaladimp@tut.ac.za) or [benny.phaladi@gmail.com](mailto:benny.phaladi@gmail.com). Should you require any further information or want to contact the researcher about any aspect of this study, please contact Malefetjane Phineas (Benny) Phaladi on 012 382 5487 or via e-mail [35610018@mylife.unisa.ac.za](mailto:35610018@mylife.unisa.ac.za) or [benny.phaladi@gmail.com](mailto:benny.phaladi@gmail.com).

Should you have concerns about the way in which the research has been conducted, you may contact Prof Patrick Ngulube on 012 429 2832 or via e-mail [Ngulup@unisa.ac.za](mailto:Ngulup@unisa.ac.za). Alternatively, contact the research ethics chairperson of the Department of Information Science Dr Isabel Schellnack-Kelly on 012 429 6936 or via email at [schelis@unisa.ac.za](mailto:schelis@unisa.ac.za).

Thank you for taking time to read this information sheet and for participating in this study.

Thank

you.

A handwritten signature in black ink, appearing to read 'Malefjetjane Phineas'.

Malefjetjane Phineas (Benny) Phaladi

## Appendix L: Project creation on Atlas.ti

Framework for integrating Knowledge Management and Human Resource Management for the reduction of organisational knowledge loss in South African state owned enterprises - ATLAS.ti

File Home Search Project Analyze Import & Export Tools & Support

Add Documents Documents Codes Edit Documents Quotations Codes Memos Networks Links Project Explorer

New Navigator Project Managers

Explore

Search

- Framework for integrating Knowledge Management and Human Resource Management for the reduction of organisational knowledge loss in South African state owned enterprises
  - Documents (20)
  - Codes (29)
  - Memos (0)
  - Networks (9)
  - Document Groups (0)
  - Code Groups (9)
  - Memo Groups (0)
  - Network Groups (0)
  - Multimedia Transcripts (0)

Framework for integrating Knowledge Management and Human Resource Management for the reduction of organisational knowledge loss in South African state owned enterprises

Created by: phaladimp - Tuesday, 14 July 2020 15:10  
Last edited by: phaladimp - Wednesday, 09 September 2020 11:22  
Current user: phaladimp

Campus License - org key: 554 - expiration date: Thursday, 15 October 2020  
ATLAS.ti 8.4.24

ATLAS.ti

11:21  
2020/09/14

# Appendix M: Grouping of codes and assigned quotations into code groups

The screenshot displays a software application window titled "Framework for integrating Knowledge Management and Human Resource Managem...". The interface is divided into several sections:

- Top Menu:** File, Home, Search Project, Analyze, Import & Export, Tools & Support, Codes, Search & Filter, Tools, View.
- Toolbar:** Includes icons for "New Group", "Create Snapshot", "Duplicate Code(s)", "Rename Code", "Delete Code(s)", "Edit Comment", "Edit Smart Code", "Open Group Manager", "Split Code", "Change Color", "Merge Codes", "Open Network", "Code Tree", "Word Cloud", "Word List", "Report", and "Excel Export".
- Left Panel (Explore):** Shows a tree view with "Codes (29)" expanded, listing various code categories.
- Code Groups Table:**

Code Groups	Name	Grounded	Count
Areas and gaps for alignment and integration	Alignment of HRM practices on managing organisational knowledge loss	<input type="checkbox"/>	1
Causes of organisational tacit knowledge loss	Barriers to effective knowledge management	<input type="checkbox"/>	2
HRM recruitment practices supporting KM ac	Causes of organisational tacit knowledge loss	<input type="checkbox"/>	4
HRM staff retention practices supporting KM	Compensation practices to support the retention and sharing of the required mission-critical skills, knowledge and expertise	<input type="checkbox"/>	4
HRM staff training and development practice	Design and implementation of staff training and development	<input type="checkbox"/>	2
Organisational culture and design (4)	Effectiveness of HR recruitment practice in attracting potential employees with required knowledge attributes	<input type="checkbox"/>	1
Overall effectiveness of HRM practices in faci	Effectiveness of the staff training and development practices	<input type="checkbox"/>	2
Recognition and treatment of organisational	Ensuring return on investment from staff training and development practices	<input type="checkbox"/>	1
Role of human resource management in buil	HRM recruitment practice support to KM activities	<input type="checkbox"/>	3
	HRM Retention strategies to prevent turnover	<input type="checkbox"/>	3
	HRM role in knowledge management	<input type="checkbox"/>	2
	Integration of HRM practices in knowledge management	<input type="checkbox"/>	2
	KM attributes as part of the recruitment process	<input type="checkbox"/>	3
	Knowledge-driven HRM practices	<input type="checkbox"/>	3
	On job boarding and shadowing as part of KM strategy, driven and supported by HRM	<input type="checkbox"/>	1
	<b>Organisational culture and HR role in facilitating knowledge-centric organisational culture</b>	<input checked="" type="checkbox"/>	<b>5</b>
	Organisational design and role of HR in facilitating structure that encourages KM behaviours	<input type="checkbox"/>	4
	Organisational leadership support to KM	<input type="checkbox"/>	2
	Overall effectiveness of HRM practices in facilitating the retention and management of knowledge	<input type="checkbox"/>	2
	Performance management system reward for the required knowledge sharing behaviour	<input type="checkbox"/>	3
- Bottom Panel:** A "Comment:" field with the text "Zero or multiple items selected".
- Status Bar:** Shows "29 codes" and the system clock "11:25 2020/09/14".

## Appendix N: An example of code report generated from Atlas.ti

The screenshot shows the Atlas.ti software interface. The main window is titled 'Code Report' and displays the following content:

**Code Report**  
Selected codes (1)

---

**Treatment of organisational knowledge loss**

**67 Quotations:**

**1:5 Yes and that is the reason why we would talk about retention. With re..... (281:498) - D 1: Interview 1**  
Yes and that is the reason why we would talk about retention. With retention it says lets keep the knowledge in as much as we can and also let's share the knowledge, so they definitely see it as a key strategic issue.

**1:6 Now the way we do it, we appoint people to the right positions so that..... (3691:3983) - D 1: Interview 1**  
Now the way we do it, we appoint people to the right positions so that they can excel in the positions that they are in. That is

The interface also shows a sidebar with a tree view of codes, including 'Organisational culture', 'Overall effectiveness', and 'Recognition and training'. The taskbar at the bottom shows the Windows taskbar with various application icons and the system clock displaying 14:05 on 2020/09/24.