Non-technical factors that influence the implementation of a knowledge management system in a parastatal organisation in South Africa

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DECLARATION

I, Mluleki Justice Majavu, hereby declare that the work presented in this thesis is my own unaided work, and is, to the best of my knowledge and belief, original, except as acknowledged in the text. I hereby declare that I have not submitted this material before, either in whole or in part, for a degree at this or any other institution.

Signed by candidate

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(Signature)

February 2021

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(Date)

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DEDICATION

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ABSTRACT

As the 4th Industrial Revolution (4IR) has influenced all sectors, and workers who accrued their experience over decades are reaching retirement age, it has become imperative in all sectors to access their knowledge, store it, and share it with new employees to avoid such knowledge being lost. Knowledge management aims to take advantage of the intangible assets that would otherwise be wasted: The knowledge developed and held by the organisations' employees, their accumulated experience, and task-specific knowledge acquired by employees. Hence, the importance of knowledge management (KM) practices in driving organisational growth and profitability is well-established. However, there is a paucity of literature regarding the influence of non-technical attributes (employee attitude, organisational culture, and organisational politics) in driving the effective implementation of KM across public sector organisations. Hence, the present study addressed the gap in literature by exploring the non-technical attributes that influence the effective implementation of KM in South African parastatals.

The present study was based on the assumption that non-technical attributes are as important as the technical attributes for ensuring effective KM implementation. The study was governed by the Ecological Theory of KM, which endorses that individuals, relationships, and learning communities play an important role, including their interaction with each other as well as internal and external factors that motivate them to share adequate, appropriate, and timely knowledge. This research contributes to the theoretical knowledge within the information systems (IS) community through developing models and theories in the extant literature that may account for the influence of organisational culture and politics in influencing the effective implementation of knowledge management systems (KMSs) in South African parastatal organisations. The evidence suggested that knowledge-sharing behaviour among employees is an important determinant for the effective implementation of KM. Hence, it was speculated that organisational culture and organisational politics might also influence KM implementation within South African parastatals by influencing the employee-related attributes. The ontological and epistemological stances that were considered for this study were objectivism and positivism, respectively. Such stances were adopted because it was contended that the realism related to KM implementation could be estimated through objective end-points. A mixed-method approach was undertaken to obtain the relevant data from the participants. The subjective responses of the participants were obtained through closed-ended and open-ended questions. Since there are different non-technical factors that could influence the effective

implementation of KM, it was hypothesised that a positive organisational culture or a positive employee attitude might not always ensure effective KM implementation. The hypotheses were grounded on the concept that a positive attitude by employees might become undermined by a dominant negative organisational culture, and destructive or over-bearing organisational politics. Under such circumstances, the positive attitude of employees would not be sufficient to influence effective KM implementation. The study showed that attitudes of people and a positive organisational culture significantly influenced an effective KM implementation. One of the novel findings in this study was that organisational politics did not significantly impact the implementation of KM practices ($p > 0.05$). However, the focus group interviews reflected that the parastatal organisation suffered from leadership challenges, which substantiated the lack of a relationship between politics and KM implementation.

The major theory that emerged from this study was that knowledge sharing across a parastatal organisation is governed by the interaction of different knowledge-sharing theories. The novel finding that organisational politics might not significantly influence the effective implementation of a KMS could be explained from the theories of knowledge sharing, which mandate that trait theory and social engagement theory might interact in influencing knowledge sharing across employees of parastatal organisations. If organisational politics do not influence knowledge sharing, the altruistic attributes of an employee may still be sufficient to share tacit and explicit knowledge. Future studies should explore the direct interaction between the positive and negative attributes of people, organisational culture, and organisational politics in influencing an effective implementation of KM across a number of parastatal organisations.

Keywords: Knowledge management, politics, people, culture, parastatal organisation

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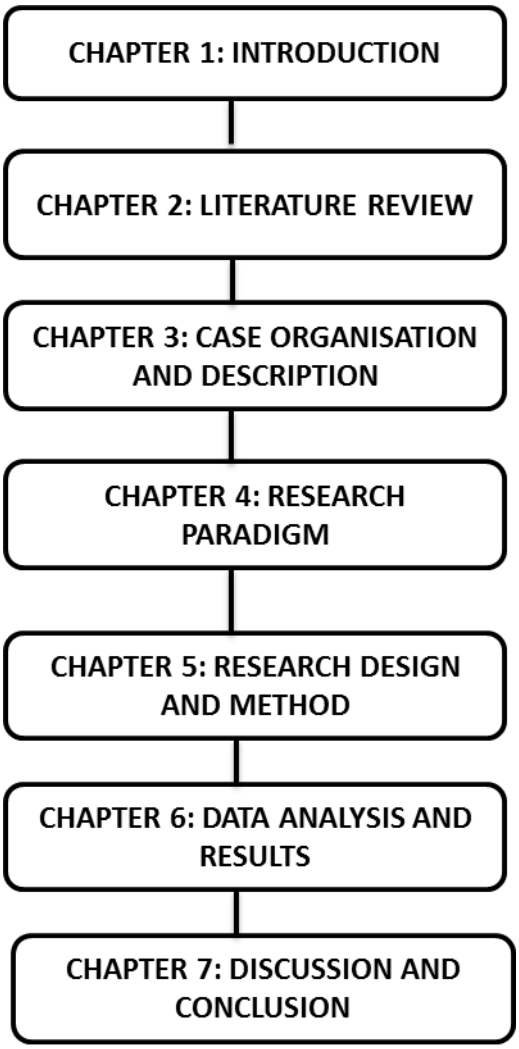
List of Abbreviations and acronyms

4IR	4th Industrial Revolution
ANOVA	One-Way Analysis of Variance
DPSA	Department of Public Service and Administration
DOC	Department of Communication
EKMS	Effective Knowledge Management System
ERP	Enterprise Resource Planning
GITOC	Government and Information Technology Officers Council
ICT	Information and Communication Technology
IoT	Internet of Things
IS	Information System
IT	Information Technology
KBS	Knowledge-Based System
KIM	Knowledge and Information Management
K-Map	Knowledge Map
KM	Knowledge Management
KMC	Knowledge Management Cycle
KMS	Knowledge Management System
OECD	Organisation for Economic Cooperation and Development
POPS	Perceptions of Organisational Politics Scale
RLKM	Research Learning and Knowledge Management
SPSS	Statistical Package for Social Sciences
TAM	Technology Acceptance Model
UCT	University of Cape Town
VIF	Variance Inflation Factors

Sequence of Chapters



CHAPTER 1: INTRODUCTION

1.1 Background to the Study

Knowledge management (KM) is a widely discussed topic among both practitioners and academics; however, limited research has been conducted on the non-technical factors that influence KM within parastatal organisations (Kahinga, 2014; Mtana, 2019). Mphahlele (2010) studied knowledge management practices in the South African public sector between 2002 and 2008, while no studies were found related to KMS in parastatals. Therefore, to successfully implement a knowledge management system (KMS) within parastatal organisations, organisational politics and organisational culture needed to be examined and taken into consideration as non-technical factors (Semeon et al., 2013). Some examples of studies on KM conducted specifically in the context of parastatal organisations include knowledge retention in organisations (Kane, 2017), benchmarking of knowledge management (Quaddus, 2012), knowledge sharing (Liebowitz, 2016), KM initiatives (Davenport, 2013), and knowledge management practices, chiefly in situation-handling and decision-making (Adeleke and Alegbeleye, 2013). Beyond the role of technical factors, for the successful implementation of knowledge management systems within parastatal organisations, it is important to take into consideration non-technical factors (organisational politics and organisational culture).

Organisational politics refers to a variety of activities that are associated with the use of influence tactics for improving personal and organisational interests (Jarret, 2017). Politics is considered a potentially destructive force, but it could be significantly effective if deployed to meet the strategic goals and missions of the organisation (Jarret, 2017). The influence of politics and culture can spread throughout the parastatal organisational structures (Sun and Chen, 2017). Sun and Chen (2017) and Kamal et al. (2015) highlight that the influence of culture into the effective management of knowledge within parastatal organisations is of the greatest significance. It has also been suggested that beyond satisfying the ‘iron triangle’, politics, culture, expectations, and people affect KMS implementations (Bahadur and Tanner, 2014). The authors place great emphasis on the stakeholders’ push for control by executive managers and others; and their power base is referred to as politics (Chang and Lin, 2015). Therefore, an effective KMS implementation has to take into consideration the political and

cultural factors that affect parastatal organisations, as the success or failure of KMS implementation, theoretically, could be determined by these factors.

Political and cultural forces have an impact on the parastatals' overall organisational structure, and these are generally accepted as a norm (Bahadur and Tanner, 2014). Culture and politics are crucial to an organisation's definition as well as the implementation of strategy, just as a KM system is significant to an organisation's competitive advantage. Hence, it is important to address organisational culture and politics to effectively deal with KM (Clayton and Myers, 2015).

The aim of the present research was to examine the degree to which forces of organisational politics and culture are considered by senior management and executives within parastatal organisations for the implementation KMS. While the importance of knowledge sharing or knowledge transfer for the success of any KM system tends to have been acknowledged, the traditional perception of KM places great emphasis on the actual technology or capabilities and the ability to efficiently implement systems that leverage and process knowledge (Chang, Tsai, and Tsai, 2011). The implementation of KMS involves technology, people, and processes or actions, whereas culture and politics pose potential challenges within parastatal organisations (Al-Alawi, Yousif, Al-Marzooqi, and Mohammed, 2007). Chang, Tsai, and Tsai (2011) emphasise that KM initiatives are often weak in parastatal organisations. While the parastatals often successfully deploy technology, they seem to fail to fully take into consideration issues concerning organisational culture and politics, and their impact on organisational development issues that are crucial to successful KMS implementation.

Clayton and Myers (2015) point out that the implementation of KM systems within parastatal organisations is associated with certain challenges (poor communication, no information sharing, and organisational change), and when these challenges are not fully dealt with, it leads to the failure of most KMS implementations. Consequently, this research aimed to examine and explore how organisational politics, people, and organisational culture influence the implementation of KMS within South African parastatal organisations. The focus of this study was on how to address these highlighted issues so that they do not hinder the successful implementation of the technical information and communication technology (ICT) systems or projects, and whether these factors are used to share explicit or tacit knowledge in parastatal organisations (Chang, 2013).

Based on a review of prior research, it is apparent that a great deal of literature on organisational culture emphasises the role of KM in a cross-cultural organisational context (Lee et al., 2016). However, the relationship between KM processes and culture, as well as their link within parastatal organisations, has been largely overlooked within previous research in KM and there is relatively little literature available on KM in parastatal organisations, particularly within the context of South Africa (Badimo and Buckley, 2014).

The South African Government has expressed its concern regarding the need to create a knowledge society; hence, it is important to understand the nature of knowledge already embedded within the business processes of parastatal organisations, and how that knowledge is transferred, utilised, and retained as a vital source for competitive advantage (Arora, 2011). The current researcher observed that besides accessing and understanding this embedded knowledge, there is an apparent absence of prior research that addresses the issue of how information and knowledge are transferred between individuals as well as groups within parastatal organisations. Haricharan (2004) put forward certain organisational elements within parastatal organisations; and based on these, the current study posited culture and politics as potential challenges for the successful implementation of KMS within South African parastatal organisations. These challenges can also include people, structures, and technology, but political directives could be significant in the implementation of systems (Clayton and Myers, 2015). An organisation's culture is one of the factors that can have an influence within the context of organisational re-engineering or change (Novikov et al., 2016).

Successfully implemented KMS within parastatal organisations could lead to increased efficiency and progress through providing better information as well as improved services through enhancing the effectiveness and efficiency of ICT systems; improved decision-making through easier and more effective sharing of knowledge and expertise; and the provision of better quality information in a timely manner (Bahadur and Tanner, 2014). However, decisions related to computerised KMS implementation could be sensitive to cultural factors, including end-user resistance, and IT skills (Bahadur and Tanner, 2014). Such factors might differ dramatically between parastatal and private sector organisations. Additionally, within the setting of parastatal organisations, the political and cultural realities often differ from one organisation to another (Ashforth, 2016). Consequently, it is imperative

to examine KM system implementation decisions within the context of their own environment.

1.2. Problem Statement

Parastatal organisations within South Africa are confronted by a major problem with regard to the implementation and use of effective KM systems in technical systems (Clayton and Myers, 2015). In the majority of instances, the implementation of ICT systems in parastatal organisations is not executed successfully, partially because of non-technical challenges such as people's resistance to change, and the influence of organisational culture and politics. In many cases, and caused by unsuccessfully implemented systems for the management of knowledge, employees of parastatal organisations tend to leave the organisation, still possessing substantial organisational knowledge that has not been shared or transferred, and which should have been transferred or shared with other employees remaining within the organisation (Adeleke and Alegbeleye, 2013). This failure to share important organisational knowledge has adverse effects on public service delivery to the entire South African population. One of the aims of parastatal organisations, besides being efficient organisations, is the creation of an environment that promotes the sharing of knowledge. This will drastically affect parastatals in their operations, as the 'baby boomer' generation had acquired the necessary experience and knowledge to understand and know their operation, but they are about to retire, taking that knowledge with them. Successful knowledge sharing requires that groups and individuals cooperate in order to share knowledge, and to do so toward the achievement of mutual benefits (Quaddus, 2012). This research aimed to examine approaches toward gaining an understanding or solving the challenges or factors in the implementation of KMS for the sharing of explicit or tacit knowledge within parastatal organisations.

Kamal et al. (2015) explored the issue of organisational culture in their research; however, their work was not specific to parastatal organisations within the South African setting. Magada and Govender (2016) show that transactional and transformational leadership could influence employees' performance in public sector organisations of South Africa. Komanyane (2010) reported that public sector organisations in South Africa practised knowledge management, and that senior managers recognised the importance of introducing KMS within such organisations. This work of research provided an empirically informed understanding of the factors that can potentially influence KM systems' implementation, and particularly so for South African parastatals. To the best knowledge of the researcher, there is

an apparent absence of prior works of research that focus on examining the influence of organisational culture and organisational politics as non-technical factors representing barriers or challenges to the successful implementation of KMS within South African parastatal organisations. This gap in literature potentially limits the full understanding of the factors that determine the successful implementation of KMS within South African parastatals.

For the purpose of the current research, the researcher selected a specific South African parastatal, and referred to it as organisation X. Organisation X is a reputed parastatal organisation in South Africa in the field of public transportation. The organisation has been facing severe challenges in retaining knowledge, and thus in its management of knowledge, because of the retirement of experienced and knowledgeable employees who did not pass on their knowledge before leaving the organisation. As a result, the lack of transferred knowledge caused problems in the organisation's efficiencies, which led to the organisation's reputation among the general public deteriorating over the past few years. Another two major issues that had an impact on KM across organisation X was poor leadership and detrimental organisational politics, which became one of the major motivations for the researcher to conduct the present study in organisation X. Additionally, as noted by Myers (2015), there had already been the need for further research with governmental sector organisations (parastatals) as a study setting, examining the forces of organisational politics and culture, and the role they play in the acquisition of knowledge. The present study aimed to close this gap through the use of observation as well as a case study as part of the methodology.

1.3 Primary Research Questions

Which non-technical aspects such as people, organisational culture and organisational politics significantly predict the influence of the successful implementation of a KMS in parastatal organisations in South Africa?

1.4 Secondary Research Questions

a) What challenges do organisations face regarding the non-technical aspects such as people, organisational culture and organisational politics in the absence of an effective knowledge management system?
b) How does leadership influence the effective implementation of a KMS?

1.5 Study Objectives

The objectives of this study were to:

a) Investigate the role of non-technical factors such as people, organisational culture and organisational politics in implementing an effective KM system in parastatal organisations in South Africa;
b) Explore best practice that can be deployed by parastatal organisations in South Africa to implement effective knowledge management systems (EKMS);
c) Generate and test a model that indicates how people, organisational culture and organisational politics could be involved in implementing an effective KMS.

1.6 Intended Contribution of the Study

The theoretical framework upon which this study was based was the Ecological Theory of KM. The theory endorses that individuals, relationships, and learning communities are important, including their interaction with each other as well as internal and external factors that motivate them to share adequate, appropriate, and timely knowledge. The present research contributed to the theoretical knowledge within the IS community through models and extant literature that examined and explained the influence of organisational culture and politics in influencing the effective implementation of KMS in parastatal organisations in South Africa. This was attained through an identification of the factors identified from the literature that are assumed to be transcendent from organisational politics and culture; fully explaining these factors; putting forward a proposed model consisting of the identified factors; testing the model; and reporting on an empirically-validated model explaining non-technical challenges in the implementation of a KMS. Additionally, the results obtained from this research may be extended and replicated for use in other studies and contextual settings in social science.

1.7 Definition of Terms

Information and Communication Technologies is the use of systems (especially computers and telecommunications) for storing, retrieving, and sending information (Mueller, 2014).

Knowledge can be split into two forms: Explicit and tacit knowledge.

Explicit knowledge is visible knowledge; it is found in manuals, documentation, files and other accessible sources (Nonaka, 1994). Explicit knowledge has one inherent challenge related to its assumed legitimacy as it has been recorded (Nonaka, Toyama, and Hirata, 2008).

Tacit knowledge is highly personal knowledge that is difficult to formalise, making it difficult to capture, communicate or share. Aspects such as subjective insights, intuitions and hunches are part of tacit knowledge (Novak and Hammer, 2009). It is "deeply rooted in an individual's actions and experience as well as in the ideals, values or emotions they embrace, which makes it difficult, if not impossible, to formalise and communicate" (Novak and Hammer, 2009).

Data refers to any form of information available for the purpose of making decisions (Ahmed and Al-Jamimi, 2013).

Information is external knowledge gathered from different sources for the purpose of assisting others in their various tasks. While information does not necessarily lead to action, should a person be able to use this information, their life can be changed as they learn from the experiences of others (Altaher, 2010).

Knowledge management refers to doing what is needed to get the most out of knowledge resources (Nonaka and Von Krogh, 2009; Tsoukas and Vladimirou, 2001); it is the process of capturing, developing, sharing and effectively using organisational knowledge (Leidner, 2001).

Knowledge sharing is the practical task of *transferring knowledge* between people, departments, divisions or organisations or from one part of the organisation to another (Chiu, Hsu, and Wang, 2006).

Knowledge management process is the process of capturing, developing, sharing, and effectively using organisational knowledge. Such process is a multi-disciplined approach to achieving organisational objectives by making the best use of knowledge (Jung, Choi, and Song, 2007).

1.8 Thesis Structure

The thesis has seven chapters. Each chapter begins with an introduction and ends with a chapter summary.

Chapter 1: This chapter gives a descriptive explanation or summary of the thesis. Topics that are covered include the introduction, background to the problem, problem statement, research questions, and intended contribution of the study.

Chapter 2: This chapter presents a complete examination of important facts and literature regarding the topic under examination. Furthermore, it furnishes a comprehensive dialogue on facts and awareness, which comprise knowledge definitions, knowledge types, knowledge hierarchies, knowledge conversion, and knowledge assets. The motivation behind the different hypotheses was that positive attitudes from individuals, a congenial working environment with a traditional organisational culture, and organisational politics that are primarily modulated by leadership functions might not necessarily translate into the effective implementation of a KMS in parastatal organisations.

Chapter 3: This chapter provides the background and mandate of the parastatal organisation under study.

Chapter 4: This chapter elaborates on the research paradigm for the development of knowledge in the study. It discusses some of the philosophies from the research onion. The research approach and research strategy are explained.

Chapter 5: This chapter elaborates on the research design and method appropriate for the development of knowledge in the study. The research methodology and research strategy are stated and explained again. Because the research is a case study approach, the suitability of the chosen methodology, the purpose of the research, and the use of interviews as a tool to collect data are stated. For ethical considerations, individual data are kept confidential.

Chapter 6: This chapter concentrates on analysing the raw data collected. It includes the development of the findings, results and themes from the findings, and answers the research questions, based on the findings derived from the questionnaire data.

Chapter 7: This chapter presents the discussion and interpretation of the findings of the thesis. The researcher offers a reflection on the study, explains the research contribution and limitations, recommendation and conclusion of the thesis. The researcher identified further research that can be conducted.

1.9 Chapter Summary

This chapter gives a descriptive explanation or summary of the thesis. Topics that are covered include the introduction, background to the problem, problem statement, primary research question and secondary research questions, and research objectives.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

The term knowledge lacks a single or commonly accepted definition. A variety of definitions exist, ranging from practical, conceptual to philosophical viewpoints, and others, from wide to narrow definitions (Jensen et al., 2016). Knowledge is considered to be a true and justified individual belief that enhances a person's ability to act (Williams, Rana, and Dwivedi, 2015). It can also include the beliefs of groups or a number of persons, and is closely related to performance (Atchley, Atwood, and Boulton, 2011) and thus, increasing a person's ability to perform effectively (Alavi and Leidner, 2001). In an organisation, knowledge comprises the collection of know-how, experience, and information used by individuals and workgroups in performing their tasks (De Vasconcelos, Gouveia, and Kimble, 2016).

According to the many descriptions and attempts of other authors to define knowledge, there is no single comprehensive view or definition of knowledge that adequately explains the difficulties experienced by knowledge management scholars and practitioners in developing a uniform approach. Knowledge is defined as a ''justified true belief'' (Nonaka 1994, 1915) and can be viewed as a state of mind, an object, a process, and a stipulation of having access to information. Knowledge entails what people know. Most knowledge comes from somebody and is mostly about intellectual differences addressing competencies rather than dispositions to use competencies (Kuhn, 2001). Drawing from the definitions discussed thus far, it is evident that knowledge exceeds justified true beliefs. This discussion about knowledge is vital, because if one wants to recognise KM, one must first have a clear picture of the true essence of knowledge. Effective KM requires an understanding of what constitutes knowledge, and how KM is managed will depend on how it is defined and viewed (Maier and Hadrich, 2011). Given the different views presented on knowledge, it is imperative to examine the nature of knowledge in an effective manner, and develop an adequate understanding regarding the related dynamics.

2.1.1 The nature of knowledge

Knowledge is different from other traditional assets, such as land, capital, and labour found in parastatals (Goldie, 2016:1067), because knowledge has an element of subjectivity to it

(Eriksson, Majkgård, and Sharma, 2015). A piece of knowledge can mean different things to different people, and this also applies to supervisors involved in decision-making within a parastatal. Different understandings might lead to different perceptions and interpretations, which in turn, can lead to mistakes, confusion, and in a worst case scenario, the ultimate failure of a parastatal (Goldie, 2016). Knowledge can be transferred and applied to diverse contexts, and thereby bring value to individuals, the parastatal as a whole, and its customers (Almeida, Grant, and Phene, 2017).

It is not easy to acquire knowledge. A part of knowledge is sometimes buried deep in people's minds (Reidolf, 2016). The other part of knowledge might be lying undisturbed, hidden in libraries, databases or repositories, and the filing cabinets of a parastatal (Lehrer, 2018). Extracting knowledge from the individuals possessing it remains the biggest management challenge in parastatals (Goldie, 2016). Parastatals benefit from understanding the existing types of knowledge, and also knowing where such knowledge resides. Although parastatals could be regarded as complex organisations, they have ample amounts of existing knowledge stemming from varied sources. Therefore, they need to access that knowledge, and put it to the best use. Knowledge often increases in value, unlike other traditional assets such as land, labour or capital, and is even more valuable when it is shared or transferred (Lambe, 2014).

Knowledge is derived from the ability to identify, access, capture, classify, verify, organise, comprehend, and apply information efficiently and effectively (Almeida, Grant, and Phene, 2017). The conversion of facts, figures, data, and information to knowledge can immensely increase the ability of parastatals to derive at actions that address their goals and visions. A parastatal's effectiveness relies on its ability to access the correct information, perform relevant analyses, and respond quickly to relevant situations (Eriksson, Majkgård, and Sharma, 2015). When more knowledge is acquired by organisations, it becomes easier for them to understand the varied operational dynamics, as they will have all the necessary information and data available to them about a wide range of areas regarding their business. Further examples are provided in the section below. In the past decade, parastatals have commenced to classify their knowledge and information needs, despite the many obstacles being created to the access to data and information by some individuals in management and some employees. The following section explores the distinction between the various types of knowledge.

2.1.2 The classification of knowledge

Knowledge can be categorised into several types, which might differ according to the type of organisation and the context. For example, the classification of knowledge in a government organisation may differ from that in a private sector organisation. KM authors tend to characterise knowledge into broad categories. These include individual knowledge and organisational knowledge (Wickramasinghe, 2015). Individual knowledge resides in an individual's mind, whereas organisational knowledge is created during interactions between technologies, processes, and people. Eriksson et al. (2015) distinguish between the technical and strategic types of knowledge: tacit, explicit, and cultural knowledge (Lambe, 2014). Other dimensions of knowledge have been categorised as explicit, implicit, and tacit (Almeida et al., 2017). However, the most commonly characterised types of knowledge are explicit and tacit knowledge (Maier and Hadrich, 2011).

2.1.2.1 Tacit knowledge

The concept of tacit knowing originated from Michael Polanyi, a renowned scientist and philosopher (Polanyi, 1958, 1966); and it was expanded on by Nonaka and Takeuchi (1995). Tacit knowledge is described as the human brain power (Teerajetgul and Chareonngam, 2008). It is a form of knowledge associated with individuals, their behaviour and perceptions; and thus, it is highly personal and frequently hard to communicate or share (Monavvarian and Kasaei, 2007). It is further described as the experience and know-how that people have in their minds. Some writers refer to tacit knowledge as embedded knowledge (Leibowitz, 2016; Majavu, 2016); others see it as practical know-how (Koshinen, 2003), and that it is hard to articulate via formal language. In the parastatal context, it is easy to communicate tacit knowledge through media communications such as correspondence, instructions, building specifications, and drawings (Teerajetgul and Chareonngam, 2008).

Sometimes, people may not be aware that they possess tacit knowledge; or they may not know how valuable it is. Such tacit knowledge is acquired during varied circumstances and experiences such as intuition, perception, senses, physical exposure, and other more practical or physical experiences. It can be very valuable, as it provides a context for ideas, experiences, people, and places. According to Nonaka and Takeuchi (1995), tacit knowledge

is fundamental for building organisations' knowledge base. It is a useful component in work and workplace learning (Teerajetgul et al., 2009). Unlike written knowledge, this type of knowledge is believed to be much more difficult to manage, even though the ability to manage it can promote organisational performance (Liebowitz, 2016). Tacit knowledge can only be made available for other employees' benefit through conscious efforts, such as interviews, mentoring programmes, and the documentation of decision-making processes, among other means applicable in gathering insight on how individuals perform their jobs.

New knowledge or new forms of knowledge are created from the interaction between the two forms of knowledge – that is, explicit and tacit (Pandey and Dutta, 2013). Even though the importance of tacit knowledge is recognised, there is a general agreement that it is difficult to share among groups and individuals – as opposed to explicit knowledge.

2.1.2.2 Explicit knowledge

Explicit knowledge is referred to as objective knowledge that has been captured and documented or stored in databases, and shared through information technologies (Jennex, 2017). It can be articulated in words and numbers, and shared through policy statements, procedures, instructions, drawings, white papers, published articles, in papers, books and others (Pandey and Dutta, 2013). Explicit knowledge differs from tacit knowledge in that it is codified in a form that makes it easier to be transferred, whereas tacit knowledge is highly personal and difficult to formalise (Jennex et al., 2012). An example of explicit knowledge in the current scenario would be energy billing at Eskom, which can be explained without vagueness, and can be articulated step by step by an employee working at the parastatal. Explicit knowledge is found in manuals, documentation and files, and is a more visible type of knowledge where it is easy to get to the sources (Leibowitz, 2016). These two types of knowledge are inseparable, since tacit knowledge is part and parcel of all types of knowledge.

2.1.2.3 Organisational knowledge

Organisational knowledge (OK) is knowledge that is shared among organisational employees (Lehrer, 2018). It includes corporate knowledge and shared understanding between individuals (Jain, 2011). OK is perceived to be very important in parastatals, since people have been recognised as the main repositories thereof (Henttonen, Kianto, and Ritala, 2016).

It is created, managed, and distributed by individuals who act separately in a decision domain. It is derived from the interaction between tacit and explicit knowledge (Goldie, 2016). Cross-training could be regarded as a part of organisational knowledge where organisations attempt to use the existing knowledge, and transfer it to others to develop a better overall culture and position of the organisation.

It is important to understand these different types of knowledge so that a parastatal, its individual employees, and the technological resources available are able to function as appropriate resources and processes to share knowledge effectively. However, the fact that there are so many different types of knowledge may create challenges for individuals, the organisation, and technological resources to share their knowledge. These challenges will be described below.

2.2 Knowledge Management

The resource-based theory stipulates that an organisation's distinctive competencies are based on its resources and capabilities, which may be represented by tangible assets such as patented inventions, or intangibles such as reputation, brand image, or human skills (Dalkir, 2013). It has further been stated that according to the resource-based theory, organisations expand by utilising these pre-existing resources. Many theorists who are protagonists of the resource-based theory also advance the proposition that a sustainable competitive advantage is mainly derived from the inimitability of an organisation's resources. Dalkir (2013) argues that recent research has centred on human capital resources, defined as the training, experience, judgement, intelligence, relationships, and insight of managers and workers in an organisation. He claims that this focus has been partially responsible for an emerging knowledge-based theory in organisations. The knowledge-based theory, according to Dalkir (2013), draws upon the resource-based theory and other research streams, including epistemology, organisational learning, organisational capabilities, innovation, and new product development.

In his argument, Jennex (2017) outlines key assumptions involved in the emerging knowledge-based theory of the organisation as follows:

a) Knowledge is the key productive resource of the organisation;

b) Knowledge is acquired by and, in the case of tacit knowledge, stored by individuals;
c) Due to time and cognitive limitations of human beings, individuals need to specialise in the knowledge they acquire;
d) Production (value creation through translation of inputs into outputs) typically requires numerous different types of specialised knowledge.

The primary role of the organisation, according to knowledge theorists, is therefore the protection and integration of knowledge. According to Maier and Hadrich (2011), the organisation is nothing but a repository of knowledge — the knowledge being embedded in business routines and processes. An organisation has a knowledge base, which includes its technological competencies as well as its knowledge of customer needs and supplier capabilities. These are competencies that largely reflect individual skills and experiences as well as distinctive ways of doing things inside organisations. In a situation where such competencies are difficult to copy, and are effectively deployed and redeployed in the market place, they can provide the basis for competent service delivery.

The researcher decided that the resource-based theory was a relevant application to the knowledge management phenomenon of this study, because of the understanding that an organisation's competencies are based on its resources, processes and capabilities, some of which may be intangible such as human skills, tacit knowledge, and experience. Knowledge management can be used as a resource or process to confront the challenges of knowledge sharing in parastatals. Scholars in the 21st century discuss KM in parastatals within the confines of value creation for the customer. In light of the challenges experienced in the sharing of knowledge as also described in the last section, Eriksson, Majkgård, and Sharma (2015) argue that KM is a vital systematic management of knowledge assets of an organisation with the purpose of creating value for it. Extracting new patterns from the managed knowledge is a creative activity. The result of such a process meets the strategic and tactical requirements of a parastatal (Malongwe, 2018). Almeida, Grant, and Phene (2017) argue that KM is a systematic, explicit, and deliberate building, renewal, and application of knowledge to maximise an organisation’s knowledge-related effectiveness and returns from its knowledge assets.

Knowledge management can be also defined as a systemic and organisationally-specified process for acquiring, organising, and communicating both tacit and explicit knowledge of

employees. This will enable other workers to utilise such knowledge to become more productive and effective at their places of work (Goldie, 2016). In light of fast moving and progressively multifaceted operational schedules, different knowledge is constantly being fashioned, distorted, and re-defined (Reidolf, 2016).

Organisations are embarking on significant IT ventures in organising KM structures (Almeida, Grant, and Phene, 2017). This would then imply that knowledge is among the institutions' most valuable resources, and it is crucial that the institutions put in place systems to manage the creation, sharing or transfer, capture, flow, and delivery of knowledge and information available among all levels of the organisation.

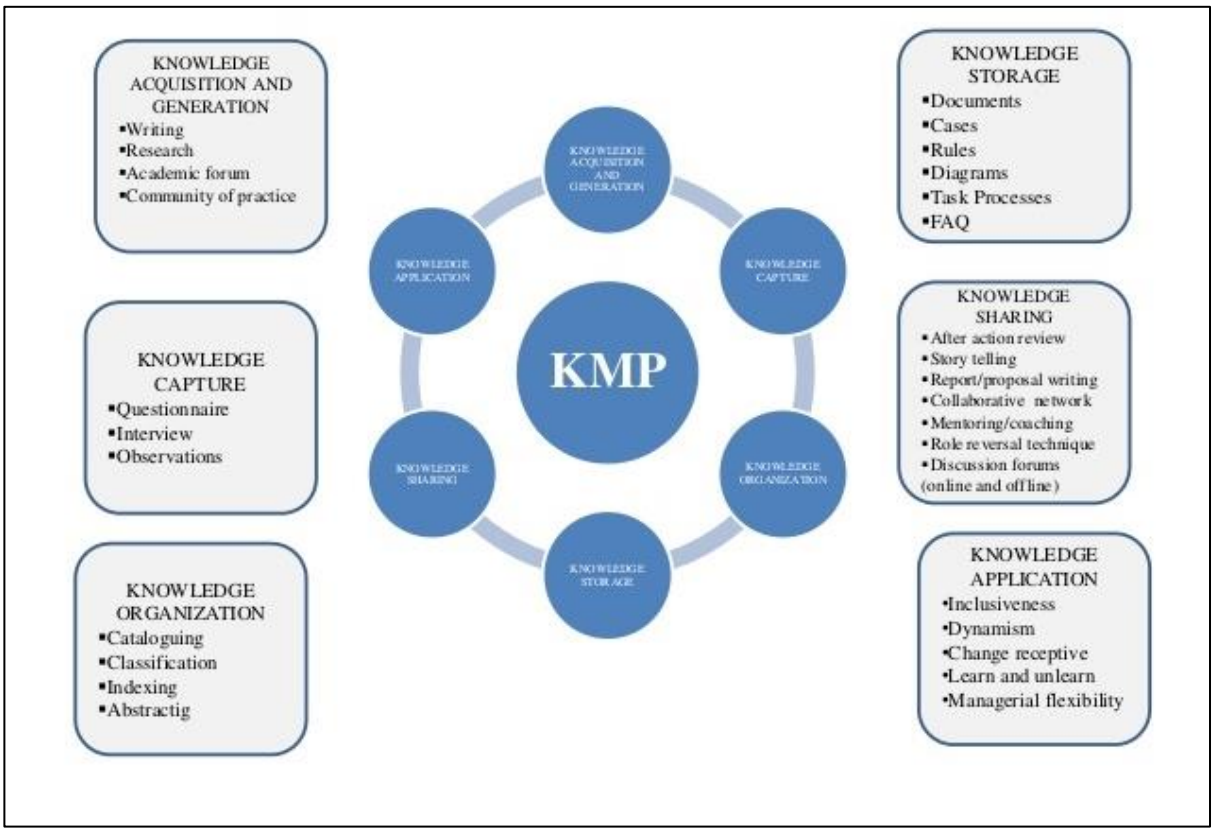


Figure 1: Knowledge management framework

Source: Almeida et al. (2017)

Figure 1 explains the varied dynamics of knowledge management. *Knowledge acquisition and generation* refers to the research, writings, academic forum, and community of practice. This leads to explain how knowledge is acquired, and what process is involved in extracting it in an adequate manner. *Knowledge capture* involves tools through which knowledge is

attained, including through questionnaires, interviews, and observations. Through the use of such tools, empirical data can be gathered for further use. *Knowledge organisation* inculcates cataloguing, classifying, indexing, and abstracting of data or information. The fourth element is *knowledge storage*, which is implemented through documents, diagrams, FAQs, and more. This identifies the way in which knowledge is saved and stored, to be used and accessed later. The fifth element is *knowledge sharing*, which leads to the methods of story-telling, reports, discussion forums, collaborative networks, and more. Once knowledge is attained, it can be shared to different audiences through these methods. The last aspect is *knowledge application*, referring to inclusiveness, dynamism, being change receptive, agile, and applying flexibility. This element explains how knowledge can be used for research and community of practice.

Traditional memory is anchored in the individual's capability to obtain, maintain, and possibly retrieve the knowledge. In business, this concept entails the mutual capability to retrieve and store facts (Goldie, 2018). KM entails the managing of institutional knowledge as a business resource, and sharing as a key institutional capability for harnessing knowledge conception (Almeida et al., 2017). Castaneda et al. (2018) elaborate on the relationship between organisational learning and KM. The authors highlight that capturing individual knowledge fosters organisational learning, which − when shared and utilised through structured formats − forms the basis of knowledge management within an institution.

Lehrer (2018) adds his insights on institutional knowledge. He examined how institutions' history can affect and have an impact on the present decision-making process. Furthermore, Lehrer also evaluated how shared knowledge evolves, and eventually becomes part of the whole institution, which ought to stay the same even after key employees are no longer with the organisation. This can be accomplished through the shared clarifications regarding the outcome or results of the decision-making process. Despite the information being stored, such knowledge or information affects and influences current decisions when made use of (Wickramasinghe, 2015). It also needs to be updated on a regular basis to remain relevant.

Information technology-centred models usually place more emphasis on more tangible aspects, on organisational culture, organisational politics, informal structures, and definable recollection, and less on individuals. Fundamentally, they emphasise objects of mutual aid more. As this research focused on problems associated with the adoption and implementation

of KM in a parastatal, it was not essential to concentrate on a particular model (Reidolf, 2016). Rather, it was essential to appreciate the range of the institutional facts, the types of knowledge available, and the often complex retention facilities. In the next sections, the researcher will look closely at the role that the technical aspect of KM, information technology (IT or ICT), can have in promoting, supporting, and eventually enhancing institutional knowledge. In any parastatal organisation, knowledge needs to be shared among employees so that the whole organisation can be more efficient and productive.

2.2.1 Knowledge creation

The first process comprises a number of activities such as identification, capture, and creation. These activities are oriented toward obtaining knowledge. They involve the classification of crucial knowledge, kinds of knowledge, as well as noting those individuals holding valuable knowledge, based on their experience and expertise that needs to be captured (Cong et al., 2003). Considering the case of parastatals, the organisational knowledge is derived from internal and external sources; that is, knowledge generated through various functions internal to the organisation, and knowledge derived from the activities of other stakeholders (Mafabi, 2012). Cross-training and research could be identified as two ways through which knowledge is created in parastatals. The whole process is about transferring the information that is present, and using it in the optimal way. Finding, sharing and using useful information has become critical for organisations. While some organisations are able to find, share, and store the relevant data and information, other organisations are not able to achieve this in an efficient manner.

With regard to the first step of identification, the internal organisational knowledge has to be identified to understand where the organisation stands, and what knowledge it has in terms of performing a set of varied activities and functions (Reidolf, 2016). The other activity in the process is one of knowledge or data capturing, which inculcates converting knowledge from tacit to explicit form and vice versa. This process turns knowledge that is resident in the mind of the individuals into an explicit representation available to the organisation.

The last activity in the process is one of new or additional knowledge creation, which eventually leads to the formation of new ideas through interaction between tacit and explicit knowledge. In parastatals, external knowledge is sought and gathered from ‘best practices’

and project knowledge, and is pooled together during partnership projects with external organisations (Cong et al., 2003).

Knowledge management activities are broadly classified as refining and storage of knowledge, followed by the application of knowledge. Refining activities allow new knowledge to be placed in context to make it available (Monavvarian and Kasaei, 2007). Likewise, storage activities facilitate the codification of tacit and explicit knowledge into a form that can be understood and added to the parastatal's memory. Thereafter, the knowledge is reviewed and updated periodically. According to Pandey and Dutta (2013), people continue to be considered the most important knowledge repository. Without them, an organisation is left in a vulnerable position, since people are likely to forget that they have gained a lot of knowledge, and if not recorded or shared, such knowledge is lost to the organisation when they leave the organisation. For these reasons, it is essential having a mechanism that allows individual knowledge to be retained either in the form of documents, or the IS of the parastatal (Mafabi, 2012). Often, parastatals store valuable knowledge in a knowledge repository, pending such knowledge being shared among different entities.

2.2.2 Knowledge sharing

Sharing activities refers to the utilisation of the knowledge stored in various tools as well as the shared knowledge through internalisation, and later putting it to valuable use (Cong et al., 2003).

2.2.2.1 Knowledge sharing as a process

According to Welschen, Todorova, and Mills (2012), knowledge sharing is "the act of making knowledge available to others within the organisation". Similarly, Zheng, Yang, and McLean (2010) were of the opinion that knowledge sharing is a reciprocal activity of possessed knowledge between two or more parties. This definition implies that knowledge sharing constitutes providing some knowledge, but also receiving and collecting it. This it is not only one-directional, but can be multi-directional.

The facilitators and enablers of KM should be appropriately identified for implementing effective KM practices (Abdul-Jalal, Toulson, and Tweed, 2013). A culture of social relations or sharing skills throughout an entire institution, employees' experiences, and denoting the

exchange of individuals' knowledge, can also be defined as knowledge sharing (Zakaria, Amelinckx, and Wilemon, 2004). Knowledge sharing offers the organisation the chance to expand their workers' understanding regarding the knowledge they possess. It can further offer a solution to the improvement of existing ineffective communication, where the different degrees of existing information can create a better understanding among the transfer parties (Wang and Noe, 2014:980).

Ardichvili et al. (2012) observe that knowledge sharing comprises the providing of and the demand for new knowledge (push-pull). Kim, Paek, and Lee (2013) are of the opinion that fact sharing refers to the deliberate conveying of one employee's information to another, and this leads to knowledge accumulation. Knowledge sharers are individuals who want to share their understanding with others, mostly their colleagues (knowledge senders), and individuals who successfully learn through consultation with others (knowledge receivers) (Kim et al., 2013). The efficient use and transfer of knowledge is a crucial factor in most institutions that aim to remain competitive in a rapidly evolving and changing environment. Ardichvili et al. (2012:419) note that the process, through which people are influenced by the understanding of another, is knowledge sharing.

According to Jennex et al. (2012), an organisation's capability to successfully influence its understanding of what type and amount of knowledge is held in the organisation is strongly reliant on its employees, who share, build, and possibly make use of the knowledge. When individuals and groups of workers share the knowledge they possess, it is only then that leverage of such knowledge is made possible. Knowledge sharing is the availing of information to other employees in the organisation. Knowledge sharing between people is the method through which knowledge possessed by one employee or worker is adapted in a way that it can be understood and eventually used by other workers. The process of knowledge sharing entails that individuals in an organisation who have certain knowledge, or are involved in specific activities, transfer that knowledge to other stakeholders in the organisation through training of others and communication.

While different methods could be adopted to share knowledge in parastatals, one of the most effective ways can be one of training and development, as this allows a group of individuals to understand the information being provided in a clear and appropriate manner. Once such

information is provided, it is then up to the understanding and capability of the individuals to learn from such acquired knowledge, and use it further in their own tasks and activities.

Sharing entails presentation of the knowledge in a manner and form that is better understood by another individual. It requires a conscious action from both parties to a transfer of this possessed knowledge. When knowledge is possessed by an individual or a group of individuals in an organisation, they have the opportunity to share their knowledge with other stakeholders. While this can be done through formal and informal meetings as well as through training sessions, it is imperative to understand that both sides must be willing to share, receive and accept knowledge. Successful knowledge sharing rests upon the capability of the knowledge provider to communicate such knowledge in an efficient manner so that it is easy to understand, and the willingness and capability of the trainee (or other employee) to make the best use of the gained knowledge.

Earlier theories of knowledge sharing have focused mostly on the epistemological and ontological concepts (Kyobe, 2010). Epistemological theories emphasise the nature of the information, autonomous of its environment. Knowledge is viewed as "An entity with definable characteristics, where limited regard is given to the interconnections between knowledge entities and their environment" (Kyobe, 2010). As stated by Wang and Noe (2010:120), knowledge sharing could be understood as the activity through which knowledge is exchanged among individuals or organisations. It has been understood that knowledge plays an imperative role for any business, and is considered to be a valuable intangible asset for developing and sustaining a competitive advantage. The knowledge-sharing system, on the other hand, leads to individuals to support the process through which tacit or explicit knowledge is transferred or communicated between individuals. These systems can also be considered knowledge repositories.

These theories are supplemented by other theories that include the Theory of Reasoned Action (TRA), the Theory of Planned Behaviour (TPB), and the Social Exchange Theory (SET) (Razak et al., 2015). The TRA pivots around the social psychology model that explains the reasons for intention behaviour. The TRA contends that the intention-to-perform behaviour that is influenced by social norms and positive attitude is the extent to which individuals perceive how other individuals approve their participation or exhibition of a specific behaviour (Razak et al., 2015). Hence, unless there is a social stimulus or positive

attitudes intrinsic within them, they would abstain from knowledge sharing (Razak et al., 2015). The TPB is an extension of the TRA, because it governs the way an individual wishes to perform a given behaviour. Therefore, the TPB could be considered a manifestation of reasoned actions. It is driven by motivation, and witnessed as efforts and willingness to share knowledge. The SET pivots around the tenet that individuals are likely to share knowledge with others if such exchanges benefit both parties (Razak et al., 2015). In a more recent study, the authors highlight that knowledge sharing is governed by a combination of the TPB, the SET, and the Big-5 personality trait theory. The personality trait of altruism has a significant impact on the sharing of tacit knowledge, but the extent of sharing differs according to the type of knowledge. An altruistic nature is also a moderator between tacit knowledge sharing and subjective willingness to share knowledge. Therefore, the authors conclude that personality traits that rely on social capital have more influence on sharing tacit knowledge than the personal traits that have accentuated intrinsic components (Obrenovic et al., 2020).

KM has been a priority among some of government's objectives and strategies where tasks cannot be separated. These include planning, strategy, implementation, and consultation (Mafabi, Munene, and Ntayi, 2012:59). However, it is crucial to note that sources from the extant literature point out that in many cases, government-owned and -controlled organisations are increasingly falling behind these important practices. Despite many parastatal organisations lagging behind other industry sectors regarding the application, implementation, and execution of some of these crucial tasks aligned with knowledge management, some public sector departments are now putting KMS for public service delivery on their agenda (Pandey and Dutta, 2013). However, the implementation thereof has not been easy, mainly due to organisational culture and political influences (Bahadur and Tanner, 2014:212).

In an effort to improve the institutional knowledge, KM will have to be involved across the whole knowledge field. Knowledge will assist the development across the hierarchies of the organisations, and "facilitate and promote its diffusion to individuals, groups and/or across the entire organisation, in accordance with the organisation's requirements" (Dorasamy, Raman, and Kaliannan, 2013). KM will enable the management of institutional knowledge retrieval and storage capabilities, and provide an effective atmosphere to learning and information sharing. Likewise, it should be an integral part of, and enable tapping into, supplementary IT bases of knowledge, wherever they are required for the improvement of the

institutional knowledge assets. This means that KM is reliant on the organisation's understanding of its institutional culture, existing knowledge sharing processes, administrative memory, organisational politics, people, and the organisational culture. Effective KM systems are essential in parastatal organisations if they want to remain functional.

Knowledge sharing between an employee and a cluster of employees or stakeholders can take place, for example, in the state-owned organisation's teaching centre, when an engineer imparts crucial information to a group of new workers (Wang, Noe, and Wang, 2014). It might also be applied, for example, when there are problems such as the disruption of train services, because of signalling complications that disturb the train facilities' transport in the railway system. Information may need to be gathered from knowledgeable experts as clusters to create an administrative understanding of the problem. For example, questioning individuals in the indicating division could create information regarding the problems experienced in the indicating division, and may highlight the need to find ways to solve those problems, the repairs needed for the technological parts, groundwork, and signalling divisions (Wang, Noe, and Wang, 2014). The ICT group or team can input their expert skills in networking, video conferencing, and other technologies, while the engineering services assembly may also create knowledge in innovative train structures. This cluster of knowledge converts to a knowledge principle of the sections (or structural information), which may later be transmitted to employees, communities, and businesses external to the organisation (Bykusenge, Munene, and Orabia, 2016).

There is an equal possibility that knowledge may flow in the opposite direction, flowing from the external surroundings to the organisation's administration, from there on to clusters that are in the subdivisions, and from clusters to individual employees (Saif and Yeop, 2020). The industry sector could possibly influence the skills that can be learned from other industry sectors or other businesses. Additionally, clusters in the department may study the information or knowledge held by an employee, and gain skills from other responses furnished through morning assembly meetings and a fault-finding course by engineers.

2.2.3 Knowledge-sharing barriers

The obstacles to fact transferral in a parastatal setting are numerous. Prior to examining the barriers to effective knowledge sharing, one has to examine the characteristics influencing the sharing process. Scholars embraced Szulanski's (1996), Singh and Kant's (2008) methods to frame four groups of characteristics. These are the characteristics of:

a) The source;
b) The structural setting;
c) The knowledge transmitted; and
d) The receiver.

2.2.3.1 Characteristics of knowledge transferred

Knowledge exists in explicit and tacit systems as deliberated earlier in this study. Tacit knowledge has received significant attention by scholars for a long time, because such knowledge is special, informal in nature, and context-specific, which makes it problematic to transfer and communicate (Suppiah and Singh Sandhu, 2011). Conversely, explicit knowledge is expressed in recognised language, stored in databases, and duplicated, which makes its identification and documentation easier compared to tacit knowledge. Moreover, explicit knowledge is facilitated through information systems, while tacit knowledge is internal and embedded in individuals, which can only be transferred through appropriate human interactions. From this perspective, it could be contended that the SET and the TRA govern the sharing of tacit knowledge more than they do for explicit knowledge (Razzak et al., 2015).

Suppiah and Singh Sandhu (2011) also explain that social know-how is important when trying to oversee a certain repairs progression for trains in the railway division. The concept of knowledge transfer advances numerous essential concerns. They include the query as to what extent knowledge needs to be, or can be, conveyed within a cluster, which relies on the interdependency among subsections or individuals (Oluikpe, 2015:862). The authors argue that the people who have the hands-on experience have narrow prospects to record course results. Consequently, response is inhibited, and the established knowledge may not be easily exchangeable. This understanding is tacit in a specific railway division, because of the old railway system, and non-accessibility of advanced learning organisations that offer railway-specific programmes. Facts systematisation is the demonstration of understanding so that

existing knowledge may be transferred or accessed. In a recent study, the authors report that tacit knowledge and explicit knowledge are both essential for generating innovative ideas and organisational performance, and task efficiency (Obrenovic et al., 2020). On the other hand, tacit knowledge contributes to organisational productivity (Obrenovic et al., 2020).

2.2.3.2 Characteristics of the source of knowledge

Suppiah and Singh Sandhu (2011) note that some knowledge benefactors view knowledge distribution as an act of kindness, while others describe information or the source of knowledge as leading to "achieving upward organisational mobility, power, and recognition" (Oluikpe, 2012). When the organisation under observation had set up cooperative events to enable knowledge sharing, many knowledgeable workers were unenthusiastic to participate in cooperative events that could have enhanced relations and intellectual work, because of their fear of losing their own competitive edge. Others preferred to stay in their own comfort zone, and decided not to operate or function out of it. However, a change in their behaviour and initiatives could have enhanced their desired set of expertise and area (Newman and Clarke, 2009). Mishra and Bhaskar (2011:350) conclude in their outline of organisational politics that not all individuals perceive knowledge sharing as a positive aspect, and this has created negative organisational politics. People tend to avoid organisational politics, and even avoid working in places where their work and environment are adversely affected by this element. Lambe (2014) describes organisational politics as being formed by the belief that there is little flexibility in the way the organisation functions; instead, everything functions in "the way it is around here". This implies inflexibility, but also stability.

Pacharapha (2012:725) maintains that if the source of information cannot be trusted, is not dependable or adding knowledge, then operational transfer of such information does not occur. While ICT expertise speedily exceeds those of other experienced workers, industrial information often fails to reach the younger employees to the extent that it is expected or would be optimal. This also entails that the continuous changes in technology necessitate employees having to constantly improve their own ICT skills, which regrettably often is not happening. This in turn hampers effective knowledge transfer.

2.2.3.3 Characteristics of the recipient

The recipients' capability to obtain essential information and facts can be affected by numerous issues; for example, the absence of enthusiasm (sensation of "not invented here"), as well as a deficiency of absorptive knowledge retention and capacity (Mishra and Bhaskar, 2011). Some employees do not see a need to learn something they do not use in their own jobs, or they feel that they should be paid for learning more. Holding such an attitude toward learning, these employees may not be motivated or have a positive attitude toward knowledge gathering and sharing, which eventually will have an impact on their ability to acquire and retain new knowledge. Employees who believe that they should be paid for learning more also tend to lack the understanding why they need to learn anything new.

Structural philosophers saw the absence of absorptive capability and the ability to retain new information as the uttermost important obstacle to information sharing in businesses. Absorptive capacity is the capacity to know the significance of new facts, the ability to integrate them, and employ them to profitable use (Pinho et al., 2012:220). Absence of this competence arises from a deficiency of previous knowledge, and in some instances, a poor relationship between the recipient and the provider of knowledge (Tsai, 2018). Sun and Chen (2017) reveal that individuals who become part of institutions tend to bring their individual cultures with them. Such cultures may not be comfortable with information sharing across other cultures. Nunes (2013) contends that information sharing will only work in an organisation, if it is promoted to everyone in the organisation as being beneficial to the organisation and the individuals.

2.2.3.4 Characteristics of the context

Kostopoulos et al. (2011) suggest that information transmission can be affected by the structural environment. A structural environment refers to the task of developing an environment where everything is kept under control, and where it is easier to plan ahead. The supervision in such environments is high. Knowledge sharing is systematic and controlled, but can become rigid. The authors state that "a fertile context facilitates the development of transfers, while a barren one hinders its gestation and evolution". They further emphasise the significance of close relations among entities to make sure of an even transfer of information.

The state and nature of the ICT framework in an organisation also influences how the transfer of knowledge is taking place. According to asset records (centralised hub uniting property

information, real estate owners, and professionals), there exists an efficient ICT infrastructure in state parastatals in South Africa (SA) because of the latest upgrades having been put in place.

Acknowledging that many parastatals lack the resources and human expertise in ICT, where staff has to be highly skilled to be able to build databases or ICT repositories, some parastatals actually do not yet see the value of having an efficient KM system that records, retains, and transfers knowledge. In this regard, part of this hesitation to transfer knowledge in a parastatal can also have developed from organisational politics exhibited by top executives (Perkins, 2011:12). The swiftness of knowledge transfer is often affected by external changes, but can also be influenced by the competitive environment of an organisation, mostly applicable to the private sector. Competition encourages modernisation, creates inducements to acquire new information, and fosters improvement through the advancement of immersion competences (Mishra and Bhaskar, 2011).

Despite these challenges, and taking cognisance of the fact that parastatals do not have to compete in the open market in the same way the private sector organisations have to do, parastatals also have to provide the environment for implementation and knowledge development if they are to survive (Lehrer, 2018). Technology (ICT) and the correct strategic approach to KM, viewing knowledge as an asset can be made use of to create such surroundings by enabling faster access to knowledge, and establishing better relations. The setting up of e-learning systems in parastatals, an around-the-clock effective services station by ICT, and knowledge transmission over communication systems anytime and anyplace are some of the many methods that may make it possible to accomplish knowledge sharing (Oluikpe, 2012). In relation to the literature review above, the researcher established a theoretical model as described below.

All barriers to knowledge management and knowledge sharing can be looked upon as impediments to promoting access to knowledge. Any condition that may prevent the free flow of knowledge in an organisation may be seen as an impediment to promoting access to knowledge. Some impediments are obvious and easily identifiable, while others are not. Some organisations impose no restrictions whatsoever on who can access what knowledge and information, whereas other organisations protect specific parts of their knowledge and information, restricting access to selected people and groups only (Riege, 2005:19). Riege

named three dozen impediments to sharing knowledge. All these impediments revolved either around individual employees, the organisations' systems and processes, or the integrated technologies. Szulanski (1996:28) contended that researchers in strategic management had examined impediments to the transfer of best practices between organisations, but impediments to transfer capabilities within organisations had received little attention. Szulanski (1996:28) further argued that contrary to conventional wisdom that placed primary blame on motivational factors, the major impediments to internal knowledge transfer were shown to be knowledge-related factors.

2.2.3.5 Challenges at the individual level

According to Szulanski (1996), it is difficult to spread and capture tacit knowledge, because most of it is unstructured and subjective in nature. Under such circumstances, the individual is often not obliged to share such knowledge among peers and superiors, unless there is a motivation for sharing. Chang (2013) notes that individuals will feel reluctant to share knowledge, because tacit knowledge is personal, context-specific, and informal in nature. It is rooted in the values and experience of an individual. Hence, sharing of tacit knowledge requires informal platforms such as networking and apprenticeships. Individuals may also find it difficult to locate colleagues who may benefit from the knowledge they hold (Eriksson, Majkgård, and Sharma, 2015). Some individuals may even conceal tacit knowledge, knowing very well that the organisation would be benefit from such knowledge. For example, sharing of tacit knowledge may make an individual believe that they are losing their competitive advantage over their peers (Mohajan, 2017:3).

The sense of insecurity associated with the sharing of tacit knowledge is one of the major limitations why such knowledge remains concealed, even if the organisational culture promotes openness and trust (Mohajan, 2017:4). An individual’s attitude, confidence, temperament, interpersonal skills, and pride of ownership can significantly influence their ability and intention to share tacit knowledge. On the other hand, time constraints, preoccupation, the lack of awareness of the benefits of sharing tacit knowledge, and the inability to recognise the tacit knowledge that an individual uses in their professional settings also impede the sharing of tacit knowledge across the concerned stakeholders (Mohajan, 2017:2).

2.3 Knowledge Sharing on a Technological Level

Technology has certainly changed the way organisations are operating when transferring and accessing information over long distances. However, technology does not work in a vacuum, and organisations adapt hybrid systems to facilitate knowledge sharing. In fact, technology itself can impose a barrier to sharing tacit knowledge, because it not only tries to access such knowledge, but also documents it, which might jeopardise employees' interests. Often, companies have invested in new ICT systems for facilitating the sharing of tacit knowledge, but those systems are incompatible with the systems of the end-users (Mohajan et al., 2017:9). There is often also a lack of technical support and training on such new systems, and this limits the sharing of tacit knowledge at the organisational level (Mohajan et al., 2017:10). Mafabi (2012) argues that if there is a gap in technical support, users will be reluctant to adhere to knowledge sharing and maintenance schedules that are not scheduled after working hours, or those that do not provide the users with ample notice. Frustrated employees will retaliate by psychologically withdrawing from using such systems, and will not share information. Many organisations have invested heavily in ICT systems that prompt the sharing of tacit knowledge, often without understanding the apprehensions felt by employees regarding the loss of their personal competitive advantage (Mohajan, 2016:15). Apart from a sense of insecurity, they might also feel that their confidentiality would be at stake. As a result, they could withdraw from using the ICT systems. A system that is out of touch with the employees' needs, comfort zones, and fears regarding the knowledge-sharing technology may result in the employees' reluctance to use the system, and ultimately, the failure of the system as a whole. These factors give credence to the value of effective knowledge management that will ensure that individuals, the organisation, and the technological resources promote the sharing of knowledge (Mohajan, 2017:3).

2.4 Knowledge Management Systems

A knowledge management system or KMS can be referred to as a class of IS applied to managing organisational knowledge (Tsai, 2018). KMS could refer to the information technology-centred structures as well as non-technical structures, established to enhance and support the institutional courses of knowledge conception, transfer, storage, application, and knowledge retrieval.

A strategic knowledge management framework within an organisation includes many aspects as represented in Figure 1 above. This framework makes sure that all KM elements are in place and are unified. Lehrer (2018) states that the framework primarily talks about a KM vision, which must be communicated and shared with the employees, and thereafter, it must be followed by a KM strategy that must make it clear how such vision is to be achieved and how it will benefit all.

Leadership is another significant aspect of an effective KM framework, where the role of top management and governance are included. People, including their role and structure, are a major component of KM, which implies that an organisation must communicate clearly its expectation that each employee embraces the KM behaviours of knowledge seeking and sharing, and co-operation across functional areas. An organisation that motivates seeking and sharing of knowledge among its employees is more likely to succeed with its change management, which is an essential part of moving from the 'before' situation to one 'post' implementation. Specific steps of critical knowledge should be unified into 'clinical' development business processes, so that approaches of KM are made a routine part of doing business. Measurement of KM results implies that a company must know how its KM is performing, and what needs to be revised to make it more effective. People within the organisation must also remain updated and skilled in the latest technology, since it is a basic requirement of most business environments where a KMS is implemented. New employees can be trained and procedures can be implemented to use technology appropriately.

KM assists organisations to solve common business problems, and allows them to augment the arising benefits through enhancing decision-making, increasing business efficiency in terms of productivity, and adopting smarter techniques to attain the desired goals. In a fully-implemented KM system, the organisation's knowledge is also fully developed, as long as it includes all the important individuals in its decision-making, irrespective of cultural and political issues. There is no general argument to date as to the ideal KM model or framework to be used, which takes into account the non-technical and the technical factors (Majavu, 2016). This may present a problem to the institutions aiming to implement KM and its processes.

For the actual retrieval and storage of knowledge, very little divergence exists regarding the significance of ICT as a way of sorting, sharing, and gaining access to explicit (recorded) knowledge (Mufuya and Chirimubwe, 2017). KM and institutional learning philosophers often undermine the significance of explicit knowledge and focus mainly on tacit knowledge (Collins, 2010; Majavu, 2016; Maganga, 2018). However, some authors also argue that there is an excess supply of explicit knowledge and material; thus, being able to manage it may be a source of a winning edge in business in itself (Victoria, Umoh, and Amah, 2018). An unambiguous KMS is opaque, and hence, easier to replicate. This entails explicit KMS fails to qualify as the foundation of a continuing and lasting advantage. A system that enables and encourages knowledge sharing is important for parastatal institutions. Failure to implement such system becomes a basis of competitive shortcoming. Competitive advantage means that the organisation can deliver an immediate benefit, which could be extended through constant developments and new knowledge. However, despite the provision of good care, the structures will only play a partial role in the allocation of tacit knowledge (Victoria, Umoh, and Amah, 2018).

Knowledge management systems are complicated. A proficient KM system comprises more than technology, as it also incorporates people, organisational politics, and organisational culture factors, which can be referred to as the non-technical aspects (Hislop, Bosuaand, and Helms, 2018). Zheng, Yang, and McLean (2010) argued that KMSs involve non-technical and technological aspects, which make the systems more useful, effective, and advantageous. Chiguvi and Magwada (2016) highlight some drawbacks that KMS systems can face regarding the technical aspects as well as the inadequacy of human focus, and political and in some instances, cultural issues. Non-technical features play an important part in getting the most out of an organisation's capability for technical innovation, where innovation shows the iterative feature of the innovation processes.

Researchers argue that the rapid changes in knowledge also present new ways of working, which could knock off-balance the effectiveness of rooted knowledge (Chigada and Ngulube, 2015). Knowledge needs to be gathered, and recorded swiftly and endlessly to utilise the arising potential opportunities, otherwise incoherence in technologies may alter these proficiencies into severities (Xu and Quaddus, 2012). The researcher defined a knowledge management system as KM advantages that are non-technically as well as technically based,

and which are premeditated to give decision-makers the facts they need to make judgements and complete their tasks.

Choge (2017) suggests that the lacking interest to implement KM in parastatals can be linked to the lacking desire for change. Acceptance and drive for change would necessitate a desire for the essential accomplishment of creative and innovative results through the distribution of tacit information, where the environment is knowledge-rich, open and embraces creative operating cultures (Reidolf, 2016). The link between KM adoption and institutional form has also been identified by Chiguvi and Magwada (2016), who are of the opinion that absence of fit in an institute's structure, tactic, and corporate values are the major obstacles to the adoption of KM. Chiguvi and Magwada (2016) observe that parastatals' bureaucracies are old-fashioned and formal, which constricts creativity, whereas newer entrepreneurial approaches seek to enhance communication among people working together, and toward making working relationships more important than before (Victoria, Umoh, and Amah, 2018).

Therefore, more flexible working relations are required for a change in systems to be possible. The authors suggest that soft controls, management priorities and policies have supplanted hierarchical and bureaucratic control, and the entrepreneurial form of governance is pervasive (Chiguvi and Magwada, 2016). Naranjo-Valencia et al. (2011:58) explain how information is growing at organisational, communal, and individual levels. Intermediate management create the base for the top management. They also note that "much of today's wealth is created by knowledge workers who require a vastly different management context from employees of the bureaucratic organisations of the industrial era".

2.5 Knowledge Management System Benefits

Most middle management and directors rely on different aspects of knowledge, including technology and non-technical aspects, before making decisions; therefore, knowledge is one of the most crucial sources of a winning edge in business. KMS has been discussed as an information system that is developed to assist the integration and sharing of knowledge. A well-organised KMS can assist the organisation in enhancing its staff performance, service quality, and customer satisfaction (Kuo and Lee, 2011:120). In several organisations, knowledge is considered to be at the core of innovation and all operations, and that it could be regarded as one of the most valuable assets an organisation may have. Through ensuring

an effective KM system, every individual in the organisation will be able to access management and business knowledge. Further, it then becomes easier for businesses to support technological advancements, and gain new knowledge for further use. Where organisations have developed a knowledge base, employees will be able to quickly find any necessary information. One of the other KMS benefits is that it reduces IT costs without compromising on quality (Jennex, 2011:772).

The emphasis on profit is paramount in the private sector, while it does not play the same role in parastatals. However, the public sector has been negatively affected by organisational transformations, as the evolving environmental circumstances have made it difficult for this sector to ensure its sustainability (Maganga, 2018). KM is yet to get the full attention of managers in the public sector, as there are other changes that are also taking place, which is one of KM's major challenges. In previous years, KM was not envisaged by the public sector as being imperative; thus, it can be considered a new concept that has started to be debated in the public sector institutions' environment as a concept that is required for innovative product and effective service provision (Chiguvi and Magwada, 2016).

One significant aspect of the present study is the impending change in the workforce profiles of the public sector, where a huge proportion of the current workforce has reached retirement age. Thus, the tacit knowledge in parastatals will have to be transferred to the new staff or new workforce through programmes such as mentoring and training. At the same time, research shows that crisis management and career development continue to challenge South African parastatals (Victoria, Umohand, and Amah, 2018).

2.6 Non-technical Aspects of KMS

Chang (2013) points out the existence of problems concomitant with the KM systems being put into practice in parastatal institutions. As defined earlier, the KMS could be IT-centred structures as well as non-technical structures, developed to improve and support the institutional courses of knowledge conception, transfer, storage, application, and retrieval. Maier and Hadrich (2011:280) also state that KMS could be structured on IT and non-IT systems, while the aim is to augment and add value to the whole KM process.

Organisational theorists who have a background in psychology, human development, cognition, organisational behaviour, group dynamics, and sociology are the proponents of a people-centred perspective to KM. They believe that individuals in an organisation and their management skills are indispensable to organisational success. Non-technical aspects of KM incorporate those KM undertakings, activities or practices that are not motivated by technology. Myer (2015) argues that strong socialisation with other employees, senior managers, and executives enable organisations to influence the sharing of tacit knowledge to attain a competitive advantage. Brainstorming sessions can be utilised to derive at noteworthy ideas that lead to better service delivery. However, the non-technical aspect of KM remains a less explored area; and hence, it results in KM coordination failing upon implementation (Clayton and Myers, 2015).

The examination and exploration of the influence of organisational politics, organisational culture, and people for the effective implementation of the KM system in South African parastatal institutions was the main objective of the study. Emphasis was placed on how to deal with these three factors, and whether inferred or obvious knowledge was pooled in parastatals through accessible IT systems that are successfully embraced and implemented.

In the vast amount of academic literature on KM and culture, strong emphasis is placed on KM in a cross-cultural institutional context (Buyukusenge and Munene, 2017). However, the connection between KM processes and culture, and their relationship with government-owned and -controlled institutions had not been explored in the previous KM studies (Kuo and Lee, 2011). In SA, the limited information available on KM in parastatal institutions is an indication that this remains a less explored area (Khalema et al., 2015:20). Lately, there has been a greater focus by the South African Government on how to create a knowledge society. This raised the need to better understand the already existing or embedded knowledge in the parastatal institutions, and assess how the knowledge is to be retained and transferred as an important source toward gaining a winning edge.

The researcher observed that fewer studies had been conducted on the specific topic of KM systems, and the role of various other factors in South African parastatals. The researcher also noted that no study accounted on how information and knowledge are conveyed between various groups and people in parastatal institutions in SA. Buyukusenge and Munene (2017) agree that fewer studies had been carried out on KM and its use with regard to non-technical

aspects, as most researchers concentrated on the technical aspects. Maingi (2015) confirms that KM has been discussed by various researchers with regard to the technical aspects, and that less has been studied in terms of the importance and implications of non-technical aspects. People and technology as well as organisational-political edicts were hypothesised to be influential in systems applications, with organisational culture believed to be the most influential in institutional transformation. The table below identifies the researchers who believe that non-technical aspects are often left out of studies and not given enough consideration.

Table 1: Researchers who believe that non-technical aspects are not given enough consideration, and their contribution

Clayton and Myers, 2015	• Failure to properly address the problems leads to KM coordination failing upon implementation. • Human capital could be used for operational efficiency, but more focus is being put on IT-centred structures.
Khalema et al., 2015	• Cross-cultural institutional context is ignored. • There is an augmented need for IT in management. • Increased complexity requires technological assistance, and so non-technical aspects are not taken much into consideration.
Mpofu, 2011	• Focus is mainly on the significance of IT and its development. • The use of non-technical aspects has been less explored due to increased intricacies.
Botha and Snyman, 2014	• Technological aspects of knowledge are more important in the current business world since IT is dominant. • Today's business environment is technology-based; non-technical aspects may be important, but are not as important as technological aspects.
Flin and Maran, 2015	• This study basically talks about crew resource management linked to non-technical skills and knowledge. • It states that non-technical skills and

	knowledge cannot be ignored, even if technology becomes dominant.
Singh Sandhu et al., 2011	• Knowledge sharing must involve both technical and non-technical aspects, so that a company remains competitive in every aspect, since non-technical aspects have their own significance.

Bharadwaj et al. (2016) highlight the need for sharing non-technical knowledge through effective knowledge management services. Previously, organisational knowledge has been managed more in an informal manner than through formal initiatives. Also, informal knowledge was shared by trusting and managing employees. Such approaches were possible in smaller organisations and the co-location of its employees. However, organisations have expanded and co-localisation of employees is becoming a distant reality. In this regard, the expansion of organisations to distant geographical locations, and considering many competitive challenges, organisations are consolidating and reconciling their knowledge assets through an effective knowledge management system (EKMS).

This is also applicable to parastatal organisations, because most of these organisations are dependent on informal knowledge-sharing approaches (Bharadwaj et al., 2016:11). Hence, it is not surprising that organisations are investing on structured KMSs, mostly through the adoption of online ICT systems. This can lead to improved services by progressing the effectiveness and efficiency of the ICT schemes (Bahadur and Tanner, 2014). The authors tried to communicate the fact that KM, through the adoption of ICT systems, can help to improve organisational effectiveness beyond geographical boundaries. The authors also state that KM should be documented in structured formats and in a timely manner, highlighting the importance of capturing and sharing tacit knowledge. Conversely, resolutions relating to the employment of an online KMS are sensitive to IT skills, including cultural factors and end-user compatibility (Bahadur and Tanner, 2014). It is crucial to note that diagrammatically, these factors differ between parastatals and the private sector. However, while Bharadwaj et al. (2016:11) highlight that reconciliation of knowledge assets can be applied to informal knowledge, irrespective of the stature of the organisations, Bahadur and Tanner (2014)

explain that the political and cultural realities of each sector and each institution are usually different, especially in the context of South African parastatals. As a result, KM system resolutions must be researched within the framework of their own context. This finding is aligned with the observation that sharing of tacit knowledge is influenced by organisational culture and organisational politics that primarily involve and are a reflection of leadership behaviour. It is already stated that if organisations try to align employees with their organisation's vision, mission, and culture, employees might refrain from sharing their own tacit knowledge if it is not in line with the culture and protocol of the organisation.

2.7 The Challenges faced in Parastatals regarding Non-technical Aspects

As previously stated, there are some major challenges, which the public sector faces (Chang, 2013). As most public sector structures are quite cumbersome and overstaffed, their organisational arrangements and chains of command could enjoy huge benefits from a reduction in numbers and flattening of the organisation to address the following challenges:

a) Lack of flexibility (for example, targeted grant support), local autonomy, and accountability;
b) The antiquated rewards system;
c) Demand for services always exceeding budget;
d) Poor ability to respond;
e) Poor public image and status of public sector staff, high levels of turnover and vacancies, skills shortages.

Considering the case of parastatals, and based on their organisational culture, employees tend to be less flexible toward change, and would rather focus on stability and routine, carrying out their normal activities. While this could be related to leadership styles and management, lower flexibility levels among employees can also lead to a major challenge for parastatals. The other challenge experienced in and facing parastatal organisations is the reliance on antiquated reward systems, which lead to parastatals' employees being given highly structured rewards through the established system, and no incentives being offered for innovation, leading to many individuals remaining de-motivated. On the other hand, the demand for services tends to exceed the budgets, and employees' inability to respond to such demands defines the problem where individuals are asked to deliver more than what they were originally tasked with (Mpofu, 2011). The increasing demand for services without an

increase in rewards has led to poor quality outcomes. Lastly, the image of public sector staff has been mostly poor, associated with bureaucracy, slow speed of delivering a service, and a lack of skills or knowledge. In addition, parastatals often face high staff turnover. The fact that there are several challenges being faced by individuals at their workplace, and unreasonable expectations, a high number of employees leave the organisations, particularly those who want to implement change and innovation, and who are looking for a better reward system. This eventually leads to challenges for such institutions in attaining their desired objectives (Chang, 2013), as they are left with staff who look for security of tenure, stability and fixed system structures, but are not geared towards productivity and goal achievement.

2.7.1 The problem of managing organisational culture

Experimental studies indicate that past lessons are an important aspect in institutional success (Lambe, 2014). The connection between institutional values and knowledge has attracted more interest in the past decade. For instance, Palinkas, Horwitz, Green, Wisdom, Duan, and Hoagwood (2015) suggest a hypothetical framework that syndicates current literature on cultural backgrounds that have an influence on KM. The hypothetical context consists of three cultural types; namely, the cultural backgrounds that are related to either knowledge, work, or people. Palinkas, Horwitz, Green, Wisdom, Duan, and Hoagwood (2015) note that every type or category influences KM in a different way in relation to the effectiveness and sustainability of KM. The following section depicts the evidence that helps to identify the literature gaps, and generates the conceptual model. Carolissen (2018) states that business IT alignment (BITA) in parastatal organisations could be helpful in aligning organisational culture with organisational goals. This is an important piece of evidence, because previous studies could not define the domain and structure of organisational culture and performance for parastatal organisations. Carolissen (2018) provides the roadmap for the development of the concept that organisational culture could translate into organisational goals in parastatals; and one such goal could be the adoption of KMS in their routine operations.

Obi and Agwu (2017) report the implications of organisational culture in a Nigerian parastatal organisation. The authors show that shared values, beliefs, and work norms of employees and superiors increase the commitment and performance of the respective stakeholders. However, Agwu (2014) did not examine whether such commitments could be extrapolated to the implementation and utilisation of KM in parastatal organisations.

Organisational culture plays an important role in KM initiatives, and this also holds true for parastatal organisations (Carolissen, 2018). In this regard, Carolissen (2018) reflects on the relationship between organisational culture and KM systems as a function of BITA in parastatal organisations. BITA describes the alignment between IT functions within an organisation and organisational goals. The author states that previous studies explored the use of IT systems as a formal structure of managing knowledge.

Carolissen (2018) states that organisational culture is formed by common expectations, goals, ideas, and beliefs of an organisation's employees. The study shows that BITA maturity is negatively affected by the cultural dimensions of organisational leadership (culture of hierarchy) and human resource management (clan). BITA was positively related to success criteria and strategic emphasis. The author contends that parastatal organisations should aim to improve their organisational culture to ensure BITA maturity. BITA maturity could be extrapolated as an outcome of EKMS. Organisational culture is strongly integrated or associated with people-related factors and work-related factors in promoting an effective KM (Carolissen, 2018). For example, KM frameworks that encourage the KM adoption could turn into limitations if any aspect of the framework is violated. KM enablers include organisational culture, structure, strategic leadership, technological infrastructure, employee training, and employee involvement. Work-related factors include infrastructural support, motivation, and leadership attitude and effectiveness. People-related factors that pivot around organisational culture include employee engagement, empowerment, and commitment to knowledge sharing (Zheng, Yang, and McLean, 2010).

Employee engagement has been viewed as the commitment by the employees to share the goals of the organisation, while employee empowerment refers to a substantial autonomy of the concerned stakeholders without robust hierarchical control (Agwu, 2014, Carolissen, 2018). It also refers to the autonomy and trust extended to the employees in the decision-making process, which plays a significant role in enhancing their engagement with the organisation (Zheng et al., 2010). Hence, it could be inferred that the provision of a motivating organisational culture and organisational politics in motivating employees to share their knowledge could translate into an effective KMS.

Zheng, Yang, and McLean (2010) suggested several ways in which an organisational culture influences the performance, principal to information distribution. First, a corporate or

organisational culture forms the environment for communal relations that inform how information is to be made use of in any certain situation. Second, institutional culture shows the way in which new knowledge is gathered and dispersed – if at all − in institutions. KM is also rooted in social backgrounds that significantly influence its progressions (Naranjo-Valencia et al., 2011:57). Zheng, Yang, and McLean (2010) evaluated how institutional culture affects KM. They demonstrated that successful KM ingenuities should take into account the societal environments in which knowledge sharing mostly takes place. They also explain the relationship between institutional culture and knowledge, stating that culture creates the norms and facts that are essential and can produce an environment for social relations. Drawing from these views, it is realistic to assume that over time, the correct and enabling institutional culture will enhance KM initiatives, and develop institutional performance.

Organisational culture has been identified to be highly important with regard to the implementation of organisational strategies. In the same way, a KM system and its implementation could also be considered critical in terms of organisational culture. The influence that the organisational culture has on the organisation's performance is immense, and influences individuals to act and behave in a certain manner (Chang and Lin, 2015). Considering that parastatals may have a different organisational culture compared to other organisations, it is necessary to understand the level of impact it may have in ensuring an effective KM system. While the organisational culture has been understood to be important in most organisations, a gap still exists in terms of understanding what role the organisational culture plays in parastatals.

Victoria et al. (2018) state that senior management and their leadership skills are considered crucial when it comes to decision-making and policy implementation. While their responsibilities are immense, they also are bound to ensure that politics within the organisation are not adversely affecting the organisation and its performance. It has been debated that organisational politics – when applied by senior management in the right manner − may also positively affect the company. Therefore, there is a gap in existing literature, which needs to be addressed in the case of parastatals to assess whether organisational politics can affect or contribute to the effective KMS implementation.

It is also imperative to understand what impact and role people have in an effective KM system, considering the case of parastatals (Goldie, 2016). While it has been researched that people are the most important factor for any organisation in terms of operations and functionality, their role may be different in the case of parastatals. Falola et al. (2014) state that employees' commitment in parastatal organisations toward their job or the organisation, or the development of an organisational culture differs from that of their peers in the private sector because of lower compensation and a lack of incentives. The author also states that the commitment level of employees could be enhanced through performance-related incentives and compensation. With greater focus being put on technology in the contemporary environment, employees' needs have to be clearly understood in terms of strategy development and the use of resources. Through understanding how people may be critical in ensuring effective knowledge management, organisations may be able to make better use of the human capital and retain the associated benefits. Although the literature suggests that KM is a function of the organisational culture and organisational politics, little has been researched to substantiate such assumption in parastatals, especially from the perspective of organisational politics.

2.7.2 The problem with managing organisational politics

Studies conducted by Falola et al. (2014) and Malongwe (2018) emphasise the role of organisational politics in terms of employee evaluation, implementation of hierarchical control, and human resource management. All these attributes contribute to the development of an organisational culture, and once the organisational culture is established, then a KMS can be implemented effectively (Carolissen, 2018). It depends to a large extent on the senior management of the organisation to make sure that those effective strategies and policies are regulated in the organisation that allow every stakeholder to function in the most efficient manner. For effective KM system implementation, it is imperative that the leaders develop a positive organisational-political environment that keeps employees motivated and satisfied (Çolakoğlu and Atabay, 2014). It is through this approach that employees may feel more committed to the organisation and show a greater responsibility toward their work. While organisational politics are part of the overall business approach, they have to be controlled in such a way that they do not have a negative effect on human capital. The environment of the organisation has a significant impact on how employees and other stakeholders behave. In parastatals, state political affairs may also be considered as having a possible negative impact

on the employees, as several ethics concerns may be associated with them. On the other hand, with efforts being put in by management toward developing an overall positive environment, the overall functionality may improve, inculcating the aspect of knowledge management (Pettigrew, 2014). Carolissen (2018) and Falola et al. (2017) provide different views regarding the role of organisational politics in driving employee performance and employee-based knowledge management in parastatal organisations. While Carolissen (2018) states that hierarchical control and ineffective HRM can negatively affect KM in parastatal organisations as a function of implementation of BITA, Falola et al. (2017) raise the point that politics can have a negative effect on an organisation's performance, and that commitment of employees toward organisational goals might not be ensured, unless the appropriate compensation structures and appraisals are in place. Both these aspects depict that organisational politics can influence KMS outcomes by interacting with people and organisational culture.

2.8 Gaps in the Literature

Parastatals are lagging behind in the implementation of KM practices. The current government now comprehends the significance of KM to service delivery to the communities, and some government divisions have begun to put KM at the top of their agenda. It is evident that KM systems are not always easy to adopt, because of the influence of people, organisational culture and organisational politics. Managing information in an organised and comprehensive manner increases the benefits businesses derive. Therefore, effective processes and procedures have to be identified to attain optimum results from a KMS in a parastatal organisation. Stylianou and Savva (2016) suggest that leveraging an organisation into a knowledge organisation requires KM efforts that positively involve and consider people, the organisational culture, and work standards. The literature shows that if the knowledge management frameworks remain unexplored, then it will be difficult for any organisation − including parastatal organisations − to implement an effective and meaningful KMS. Literature on parastatal organisations has not reflected the way KM efforts are realised and transformed into an effective KMS. Although there have been some studies that add to the understanding of how explicit knowledge is shared within parastatal organisations, there is no evidence so far that described how tacit knowledge is nurtured and shared in parastatals.

Regarding the people context, the literature indicates that committed employees' motivation and attitude improves their engagement with organisational goals, one of which could be KM. However, the literature does not provide adequate evidence regarding the factors that can enhance employees' commitment within a parastatal organisation. The literature indicates that parastatals should inculcate their organisational culture first before proceeding with the concept of implementing an EKMS. However, there is insufficient evidence as to how organisational culture can be improved within a parastatal organisation. It could be argued that people play an important role in improving the organisational culture, while organisational politics may also play a major role in dictating how the mission and culture of the organisation influence employees. Only a few studies have examined how organisational knowledge management strategies and issues in parastatals can influence KM systems (De Vasconcelos, Gouveia, and Kimble, 2016). It is therefore necessary to examine the more complex picture of how people, organisational politics, and organisational culture aspects exercise a collective influence on effective adoption of a KMS. Institutions should devise the right structures that allow knowledge sharing, bearing in mind the effect of these dimensions. They should also nurture a knowledge-sharing culture within the parastatals that certifies that the KM system's investments are entirely employed (Fernandez and Moldogaziev, 2013:492).

It has been identified that over the past few decades, IT has been given a much more important role in terms of KM, and human capital has not been taken into consideration with an equal value and consideration. This leads to a gap in the assessment of important factors when implementing KM with respect to the use and significance of human capital in the whole process. While most of the studies have been carried out related to KM and the use of IT, less has been studied with regard to the role of the employees (Goldie, 2016). Clayton and Myers (2015) also state that human capital is one of the most critical elements that may add efficiency to a business, but this aspect has been given less importance, and its implications have not been adequately explored. Moreover, along with human capital, it has also been identified that aspects such as organisational culture and organisational politics can have an impact on the implementation and outcomes of KM systems.

2.9. Conceptual Model and Definitions

2.9.1. Development and domain of the conceptual model

This section explains the way the conceptual model was designed.

Organisation:

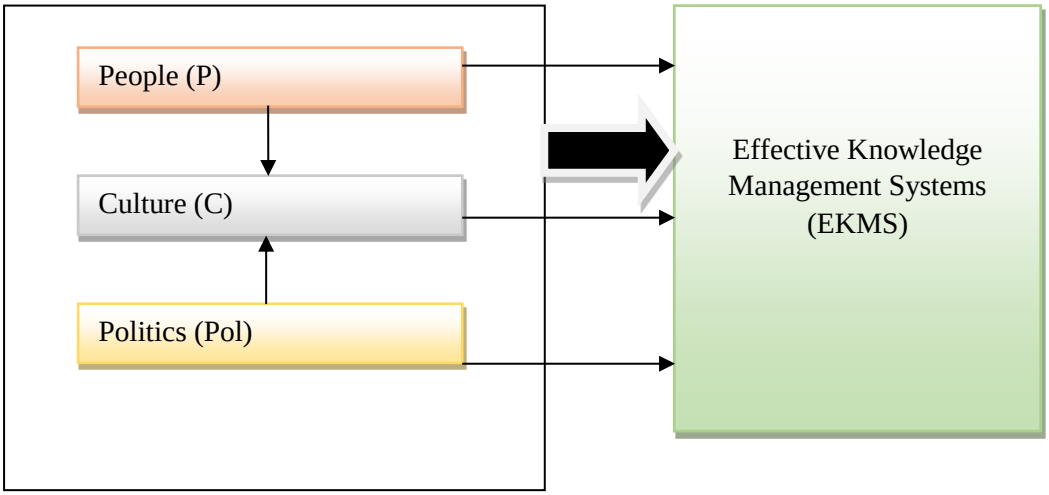


Figure 2: Conceptual Model

The conceptual model was established, based on the literature review. Ideally, the researcher argued, an operative KMS should consist of technical as well as non-technical KM aspects such as people, and organisational culture, and organisational politics. The conceptual model presented above (Figure 2.) suggests that these variables have an impact on the effectiveness of the KMS, and will have an influence on its implementation. As explained in the literature review, organisational culture, people, and organisational politics are crucial non-technical factors of an effective KMS (Dalkir, 2013). A researcher in IS mentions that in his profession, straddling the last 25 years, the problems surrounding culture, people, and politics in IS employment enterprises still persist (Myers, 2015). He further mentions that no one to date has managed to come up with any model or framework to solve the critical problems regarding the interrelationships of organisational culture, technology, people, structures, and organisational politics. In any employment of a KMS, these problems cannot be overlooked, specifically in the public sector.

The conceptual model was built on the evidence that KM enablers could be sorted into three primary domains; people (P) (individual employees and groups formed between employees);

culture (C) (which includes organisational culture and knowledge culture); and politics (Pol) (which includes organisational structure and leadership roles). It is contended that lack of confidence, insecurity, loss of a competitive advantage over peers, being insensitive to tacit knowledge, and the intent to share KM among employees (individual employees and groups) negatively impede on knowledge management (Mohajan, 2017:6). Likewise, employees' attitudes can influence the organisational culture that would reduce knowledge sharing across the organisation (Carolissen, 2018). Carolissen (2018) shows that organisational politics such as the organisation's hierarchy and human resource management negatively affect KM, while a strategic focus positively influences KM. Such findings can be moderated by influencing and interacting with employees, helping to change their attitudes (Falola et al., 2014). Falola et al. (2014) state that favourable organisational politics such as transparency and appropriateness of incentives to employees foster their commitment.

Culture (C) includes organisational culture in transforming into a knowledge-based organisation. Promoting transparency and openness within the organisation could influence the adoption and utilisation of KM practices (Mujid, 2020). Adeinat and Abdulfatah (2019) highlight that the organisational culture influences the knowledge creation process, followed by a knowledge exchange. The optimal organisational culture improves knowledge sharing; and knowledge sharing translates into the development of intellectual capital of the organisation (Attar, 2020).

The term organisational politics is defined as the reflection of the leadership's attitude and organisational structure that could promote or impede the effective implementation of a KMS (Kaja et al., 2017). For example, the organisational structure might mandate the flow of knowledge through hierarchies only, which is often in line with the mission of the organisation. Such strategies could not only impose KM barriers, but might act through the organisation's culture as promoting a platform for informal communication (Manogaran et al., 2017). Such platforms are essential for the sharing of tacit knowledge. Unless tacit knowledge is shared in addition to explicit knowledge, the KMS would remain redundant and ineffective (Mohajan, 2016). There is inconclusive evidence regarding the development of an EKMS as a function of people, culture, and politics in small companies (Manogaran et al., 2017). These findings are aligned with the conceptual model, which aimed to investigate whether organisational culture interacts with people and politics in influencing KMS implementation in parastatal organisations.

2.9.2. Definitions of the terms related to the conceptual model

Effective knowledge management services refer to the effective management and utilisation of organisational knowledge, which is the sum of information attained by or held within an organisation (Tsai, 2017). An effective KMS is defined as a class of IS applied to managing organisational knowledge (Harker, 2015:198). These are information technology-based arrangements, established to enhance and support the structural courses of awareness creation, storage, transfer, application, and retrieval. An effective KM system requires a parastatal organisation to identify, generate, acquire, diffuse, and capture the benefits of knowledge that provides a strategic advantage to the parastatal organisation (Curado and Bontis, 2011).

Knowledge management system (KMS) refers to a class of IS applied to managing organisational knowledge, and is defined as "an application system that combines and integrates functions for the contextualised handling of both explicit and tacit knowledge, throughout the organisation or that part of the organisation that is targeted by a KM initiative" (Leidner, 2001).

The usefulness of organisational knowledge lies in its emphasis on enhancing core systems and processes, essential designing and competencies, and ground-breaking approaches to realise feasible progression and create competitive advantages (Curado and Bontis, 2011). Organisational knowledge assists in providing a set of benefits to the company, and the attained information can be used to develop effective strategies along with establishing approaches that can lead the organisation to attaining a competitive advantage.

People: Within the context of this study, the term people refers to the individual employee within an organisation as well as the employee groups that are formed with a shared business function.

i. Individuals

Innovation and learning arising out of gained knowledge improve the skills and the knowledge of employees, and in turn, cause improved performance (Agwu, 2014). Agwu (2014) points toward organisational learning that is fostered by individuals either through

unstructured formats or organised structures, including business groups (Castaneda, 2018). Assertiveness and ethical values are the fundamentals of employees' competence development. Mohajan (2017:6) contends that a lack of confidence, insecurity, a feared loss of a personal competitive advantage over peers, being insensitive to tacit knowledge, and the intent to share KM can negatively affect knowledge management or knowledge sharing. When individuals are provided with a high level of appropriate information and data, this tends to enhance their overall performance and the probability of better outcomes. Distribution of knowledge at organisational and peer levels could be regarded as being critical, because the outcomes may be adversely affected if there is any inefficiency in this regard (Mueller, 2014). It is the responsibility of senior management and those who possess knowledge to distribute such knowledge to the relevant other employees and not limit it to certain individuals (Suppiah and Singh, 2011).

ii. Groups

The individuals within an organisation often function as a team with shared missions and goals to form a group. As a result, the intention and attitude of an individual employee to share tacit and explicit knowledge would influence other members of the group to share similar knowledge, which could influence the efficiency of a KMS. Distribution of knowledge in a group improves the cluster's competency. For organisations to make use of knowledge development and sharing, it is imperative that the information is distributed in an efficient manner, so that an increasing number of individuals become aware of the knowledge (Ashforth, 2016). Since more individuals become involved, it reflects that knowledge sharing is expedited through groups. Once this is done, the benefits can be observed at the cluster level. A group's know-how is only worth as much as that of the individuals who form the team. When individuals in a team are continuously sharing and learning, creating knowledge with one another, team competency is improved (Bahadur and Tanner, 2014). A group of individuals holding similar attitudes on knowledge sharing could come together through informal platforms that help them to share their tacit knowledge among the concerned stakeholders. However, if there is a conflict of interests between the group/s or individuals, then such informal platforms will not translate into an effective KMS; rather such initiatives could foster further conflicts and impede sharing of explicit knowledge that is essential for cross-functional operation between teams and individuals.

Organisational culture comprises organisational processes, culture, a knowledge-friendly vision, and employee training (Mohajan et al., 2016:7). Under such perspectives, forming an organisational culture that sees the importance of sharing knowledge is crucial for knowledge management to succeed (Zheng, Yang, and McLean, 2010; Carolissen, 2018).

Organisational politics: From the perspective of the present study, the term organisational politics is defined as the hierarchical practices, HRM issues, leadership attributes, and the workplace environment. Organisational politics is referred to as the inextricable part of organisational life that is viewed as evolving power systems, where all members of the organisation resort to influential tactics to achieve their goals, to maintain and secure the privileges, benefits, and advantages from each other (Soares, 2018). Soares (2018) highlights that organisational politics could either be beneficial or harmful, which is also endorsed by Carolissen (2018) and Malongwe (2018).

2.10 Development and Motivation behind the Hypotheses

The creation of the hypotheses has been steered by literature, and by the outlook of effectiveness that is being embraced in this research. The hypotheses were tested to either reject or confirm the assertions. This will be discussed in more detail in Chapter 6. The hypothesis in this study aimed to model EKMS as a function of people, culture, and politics, where EKMS is considered the dependent variable and people, culture, and politics and their interaction term are the independent variables.

2.10.1 Effective knowledge management system (EKMS)

An effective KMS will depend on the nature of people's attitudes, and the politics/political environment, and culture. An effective KM system also requires a parastatal organisation to identify, generate, acquire, diffuse, and capture the benefits of knowledge that provide a strategic advantage to the parastatal organisation (Curado and Bontis, 2011). Through ensuring an effective KM system, every individual in the organisation is able to access management and business knowledge (Jennex, 2011:772). Further, it becomes easier for businesses to support technological advancements and gain new knowledge for further use. In SA, people look to leaders for cues about what is important in a parastatal organisation. When a parastatal's organisational staff members observe a leader making a personal

sacrifice for a value, it sends a strong message that this value is important (Khalema et al., 2015). For example, if executives or senior managers are seen to be "practising what they preach" by actively sharing knowledge and rewarding collaborative efforts, then the organisational members can see that this kind of behaviour is in fact highly valued and practised at all levels of the organisation (Sun and Chen, 2017).

Knowledge management is an important element for businesses wanting to succeed in the modern environment. A number of factors have been taken into consideration that assist the effective implementation of knowledge management systems (Santoro, Vrontis, Thrassou, and Dezi, 2018). Effective implementation of a KMS enables employees within an organisation to access and apply knowledge, and enhance the overall performance of the organisation. However, even after investments have been made into the technical infrastructure for a KMS, some businesses seem to be unable to ensure the effective implementation of such system. Focusing on a single aspect of the implementation process may not allow organisations to achieve the desired performance-related goals, and it requires the combined effort by all people and the relevant resources to attain the objectives. Thus, successful and effective implementation of a KMS requires the coordination of different aspects such as people, culture, and organisational politics in addition to the technology factor. While all these elements are imperative in terms of the KMS, it needs to be critically assessed as to which one of these may be of greater importance and significance in parastatals.

2.10.2. People within a parastatal organisation and KMS

Human capital is of immense importance to organisations, because people can make a huge difference in how organisations function and operate. Individuals' behaviour can affect the organisation and its overall performance, as it is their attitude and commitment toward work that has an impact on the overall output. Positive employee behaviour can strengthen the organisation and help it attain its performance-related objectives, while a negative behaviour may have adverse outcomes. The individuals' willingness and attitude may also influence the KM system's effectiveness in a parastatal organisation (Ashforth, 2016). If employees of the organisation are highly motivated and have a positive attitude toward their work, the chances are higher that they positively contribute toward the KM system's effectiveness. While

technology has its role to play in the implementation of a KMS, it is the human capital that carries out the activities associated with it (Saif and Yeop, 2020).

High competitiveness and increasing work complexities have made it difficult for organisations to achieve and then retain a sustainable position in their industry. Technology has partially replaced the singular reliance on human capital, but organisations still need people for their overall effectiveness. Considering that human capital is one of the most critical non-technical aspects that plays a significant role in the implementation of a KMS, the attitude of individuals may equally be considered critical. For this reason, many organisations invest in training and development of their employees so that they may be given the opportunity to render better performance and achieve better outcomes (Budhwar et al., 2010). Fernandez and Moldogaziev (2013) state that people working in parastatal organisations have a critical impact on the effectiveness of these organisations, as their activities and efforts affect the overall organisational performance. In the case of knowledge management, people have the responsibility of carrying out the associate activities such as recording knowledge and then sharing it with other stakeholders.

Motivation: The motivation for Hypothesis 1 stems from the observations by Teh and Yong (2011) who state that a positive attitude by individuals toward knowledge sharing might not always lead them to actually wanting to share their knowledge with others, particularly so if there is a lack of intrinsic and extrinsic motivation for the individual. Evidence (Fuchs and Edwards, 2012) suggests that organisational justice could influence and enhance the positive attitude among employees in the knowledge-sharing process. If organisational justice is not applied in the organisation, then the positive attitude of employees might not translate into an effective knowledge management (Akram et al., 2018).

In this context, organisations and their management have to create a supportive environment through which knowledge can be shared through formal and informal communications. However, there is only limited evidence available in the literature as to whether a supportive environment is sufficient in parastatal organisations to foster attitudes of individuals toward knowledge sharing. It is suggested that explicit knowledge has more impact on the speed of innovation and the financial performance-related to the implementation of KMS, while tacit knowledge would be the main player in driving the quality of the innovation and the operational performance. It is possible that an organisational culture and the mission motivate

individuals to share explicit knowledge at the expense of tacit knowledge. If explicit knowledge is more engraved in the KMS compared to tacit knowledge, then the implementation of KM systems could be impaired due to the lack of innovation in the system (Harker, 2015). These findings are supported by Feijoo et al. (2015) who show that if the KM systems are not innovative, many employees would be reluctant to use or implement such systems. On the other hand, it could be speculated that the lack of a tacit knowledge-based KMS might not motivate the leadership team to implement such systems within the organisation if they do not bring about radical transitions in employee performance or organisational operations.

Hypothesis 1: Attitudes of individual employees will not be effective in EKMS implementation in parastatal organisations.

2.10.3. Organisational culture within a parastatal organisation and KMS

A positive organisational culture is imperative for organisations, and contributes toward the overall efficiency and performance of organisations. The organisational culture is not only associated with one part of the company or its functionality, but it has an overall impact on how businesses perform and retain their position in the industry. The culture of an organisation defines the norms and values of the organisation, which have to be understood by every stakeholder to act upon. Dalkir, Bedford, and Miller (2015) argue that understanding these norms and values becomes imperative for every stakeholder of the organisation, and particularly the employees. Communication can be significantly affected if individuals are unable to understand and grasp the culture in which they are working. Alnesr and Ramzani (2019) show that an organisation's culture might also influence knowledge sharing in driving innovation. Following the norms and values in an organisation, and behaving in accordance with the culture of the organisation are all extremely important for all stakeholders who need to understand what management requires from them, and how they need to perform the activities. The better these stakeholders are able to understand the culture, the better the chances for them to perform accordingly.

A parastatal organisation's cultural environment plays a crucial role in determining the system's effectiveness of knowledge management within the organisation. Therefore, it is vital that the culture of the organisation is one that supports individuals to connect and

coordinate with each other. The correct organisational culture may also assist in better relationship building, which in turn will lead to better knowledge management along with better coordination among individuals and departments (Victoria et al., 2018). It is essential for employees to feel connected to the organisation and its culture so that they feel motivated to work. Thus, for a better KMS implementation, it is just as essential that employees are committed to the organisation and its systems, and are thus motivated to achieve the organisational objectives. It is also necessary that employees are positively associated with each other to share knowledge within the company, and a culture is developed that promotes the activity of sharing (Jahmani et al., 2018).

It is important for organisations to have a culture where employees are valued, as such environment is the sign of a positive organisational culture (Muls et al., 2015). Considering parastatals, managing the organisational culture is difficult, as there are many complexities associated with every task and activity. However, ensuring a stable and positive culture will enable an effective implementation of a KM system (Diaz-Cabera et al., 2010).

Motivation: The motivation behind Hypothesis 2 is triggered by the observations made by Dalkir and Kimiz (2013). The authors state that the strength, network centrality, and density of the networks or relationships influence the knowledge transfer between employees, and between employees and the organisation through the hierarchy. In another study, Quratulain et al. (2019) report that a bureaucratic structure of an organisation negatively influences knowledge sharing. These findings imply that the organisational culture of intrinsic and extrinsic motivation might not foster the knowledge transfer if the strength and density of relationships between employees and their organisation are not strong. However, such attributes have remained unexplored in the context of parastatal organisations. Apart from the barriers that hinder the KMS implementation because of a poor organisational culture, there are other facets of the organisational culture that could be deemed to be positive, but that negatively affect KMS. Studies suggest that KMS practices often fail, because organisations try to align their organisational culture and employee behaviours to fit their supply-driving mission on knowledge management. Organisations are then unable to implement knowledge management, because they do not fit in with the requirements of the end-users or employees. Therefore, the situational need of knowledge often remains unaddressed. This is referred to as a culture trap, and it necessitates the integration of the supply-side and demand-side of knowledge. Therefore, if there is a negative relationship between the organisational culture

and KMS implementation, it would not necessarily mean that there is a poor network connection or an increased complexity within an organisation. Rather, it could mean that networking is substantial and there is no organisational complexity, but there is a marked gap in the working or situational knowledge that is prevented to be shared due to a specific organisational culture. The level of knowledge sharing might be optimal and adequate under the circumstances, but the structure of sharing could have a number of limitations, considering the protocol or core values of a company. Under such circumstances, a positive organisational culture could even impede a KMS implementation (BenMoussa, 2009).

Hypothesis 2: A positive organisational culture will not be positively related to EKMS.

2.10.4. Organisational politics within a parastatal organisation and KMS

Organisations in the contemporary environment have been facing numerous issues related to performance and sustainability. While a number of factors contribute toward the overall productivity of organisations, every business may experience different effects by these elements. Leadership in this regard is a vital component that allows companies to flourish in such complexities (Kuo et al., 2011). Considering organisational politics, leadership has been regarded to play an imperative role. It is the senior management of a company that makes the decisions regarding organisational politics and the organisational culture. The leadership's behaviour has a significant impact on how politics within an organisation will play out. They also have a direct influence on the relationships being built between the organisation's stakeholders. Internal or organisational politics play a critical role in determining how activities within a company are taking place, or how the business objectives are being attained, as the employees are highly influenced by the decisions and approach of the leadership (Sidhu et al., 2011).

Motivation: The motivation for Hypothesis 3 is grounded on the observations of Mass-Machua (2014). Although the author shows a positive relationship between leadership and KMS, and leadership plays a vital role in improving employee innovation, capabilities of employees, and the quality of work by influencing KMS implementation, leaders on their own cannot dictate the relationship between organisational politics and KMS implementation. The disconnect between integration of a knowledge-sharing environment and the achievement of the organisational goals, together with a lack of a knowledge-sharing space

and infrastructure, will hinder an effective KMS implementation, and will cause a loss in competitiveness and in shared mission between the cross-functional teams. The conflict between KM development teams has been one of the major barriers because of organisational politics that hinder the effective KMS implementation.

In a case study conducted by BenMoussa (2009), conflicts arose between the IT team and the knowledge content development team on the creation of an intranet site. The resistance began during the development of the software, when the IT people believed that the knowledge content-designing team was aiming for a quick-win solution, while they were actually entrusted with working on the worktable solutions. The IT team believed that the individuals from the knowledge team were infringing on their job functions, while the knowledge team felt that they were left out at most times during the development of the software. The case study reflected that job delegation and deployment are key leadership functions, and organisational politics should be viewed as a function of effective leadership. As the two departments had their own separate leaders, a troubleshooting exercise on job ambiguity was required to be addressed at the micro-level. In another case study (Zhang and Dawes, 2006), the organisation provided space and time for sharing tacit knowledge between cross-functional teams, but some project members felt that brainstorming or knowledge sharing was not required from other members of the cross-functional teams, as it would lead to process uncertainty. Hence, organisational dynamics, power dynamics, organisational conflicts, administrative and appraisal practices, and reward systems are all facets of organisational politics that influence KMS implementation in addition to the leadership practices that might apparently seem effective. The primary motivation between these conflicting theories hypothesises that leadership might interact with different facets of organisational politics that affect the implementation of a KMS. If organisational politics do not influence KMS implementation, it could be assumed that leadership was weak or the employees were able to resolve their conflicts at a micro-level to maintain their status quo on KMS implementation (Mass-Machua, 2014).

However, if organisational politics are positively related to KMS, this would imply that the leadership is effective in managing conflicts and addressing job ambiguity to enhance KMS implementation. On the other hand, if organisational politics are negatively related to KMS, this would imply that the formal leadership is ineffective in managing the conflicts and job ambiguity of cross-functional teams as well as the vertical structures. However, if the

members of the cross-functional team are effective in exhibiting situational leadership to resolve the conflicts and job ambiguity, it would always result in a positive correlation with KMS, even if the formal leader or leaders are ineffective in resolving conflicts (BenMoussa, 2009). The concept of situational leadership proposes leadership as one of the central actors in organisational politics as described by various authors (Mass-Machua, 2014, BenMoussa, 2009).

Hypothesis 3: Organisational politics will not be positively related to EKMS in parastatals.

2.10.5. Combined effect of people, organisational culture, and organisational politics in parastatals and KMS

While it had been identified that people play a critical part in parastatal organisations (in terms of stakeholders), they can also influence the implementation and successful use of a KMS by interacting with each other through groups with a shared interest, as well as by positively affecting the organisational culture, which can also be influenced by organisational politics. Employees are considered to be one of the most important stakeholders in organisations, as they contribute toward the overall performance and success of the company. In the case of parastatals, employees provide vital contributions for knowledge management to be effective (Dalkur, 2013). While individuals and groups have a critical role to play, a set of varied internal and external factors influence their behaviour and performance. Therefore, management has to pay attention to those elements as well. If the individuals/groups are not motivated enough or do not feel committed to the organisation, they may never share their knowledge with others, and this would eventually lower the organisation's performance and outcomes. It is essential that there is an effective coordination within employee groups and teams, along with having efficient team-working skills that allow the organisation to attain its desired objectives (Myer, 2015).

If individuals within a group feel reluctant to share their information and knowledge, no effective organisational culture of knowledge sharing can be built, and this may hinder the execution of KM. On the other hand, if individuals are willing to share and committed to work in a manner that is conducive to knowledge sharing, this may lead to positive outcomes in terms of knowledge management on the whole. Leadership has the responsibility to develop such a culture and work environment, in which individuals are encouraged, and thus

feel free to share information and communicate with others for the benefit of the company (Eriksson et al., 2015). Consequently, the commitment and attitudes of individuals/groups toward the organisation is of high significance, and it leads to them becoming more involved in their work activities and improve their approach toward the company. Individuals' competence is obviously crucial for the effective KMS implementation within a parastatal, as along with their willingness to carry out the required activities; they will also have to possess the ability to perform these tasks (Wood et al., 2012).

Motivation: The motivation for Hypothesis 4 was based on the findings by Erhardt (2011). The author shows that teamwork or group effectiveness is not always required for an effective KMS. The author conducted 88 interviews across four projects and identified different types of team-based knowledge work; collaborative, integrative, standardised, and modular. The teamwork projects were distinguished by the type of problem (poorly versus well-structured) and knowledge composition (homogenous and heterogeneous). It showed that each of the structural models had their own impact on a project's success without sufficient knowledge work. Since effective KMS implementation and its impact generally pivots on the performance of employees, the dynamics of employee groups is an important aspect for gauging KMS adoption and implementation. Hendryadi et al. (2019) state that employees' performance stems from their affective commitment. The authors show the contradictory relationship between organisational culture, organisational politics (empowering leadership), and knowledge-sharing behaviour. They report that a bureaucratic organisational culture has a negative influence on leadership empowerment and affective commitment from the employees. On the other hand, empowering leadership has a significant impact on knowledge-sharing behaviour by fostering an affective commitment among employees (Hendryadi et al., 2019).

Feijoo et al. (2015) conducted a study among public sector education employees in Spain to evaluate the use of employee portals that were introduced for enhancing knowledge management within the organisations. The study by Feijoo el al. (2015) is pertinent from the perspective of the current study, because parastatal organisations are similar to public sector organisations such as the educational sector in Spain. The authors state that knowledge management is an important attribution of the educational public sector in Spain. The authors implemented a structured equation model that reflected that employee portal usage was significantly influenced by characteristics of innovation of the KMS, the properties and

characteristics of the employees, properties of the jobs, and organisational factors. In this regard, it could be assumed that organisational factors may also include organisational politics and organisational culture, and properties of jobs, which might negatively interact with individuals or groups of individuals to limit the implementation of a KMS. These findings suggest that the effectiveness of employees or a group of employees might not necessarily translate into the effective implementation of KMS, if some of the members are not sold on the innovation of the KMS and the job content in which they are employed. It could also be possible that otherwise highly motivated and effective employees might not be receiving the rewards they wished they were given, and instead they experience poor appraisal, the lack of autonomy, and a rigid working culture that contributes to their low support of a KMS and its implementation or an EKMS.

Hypothesis 4: People, organisational culture, and organisational politics will interact with each other in hindering EKMS.

2.11 Chapter Summary

This section presented the examination of literature regarding the topic of the present study. It furnished a comprehensive dialogue on knowledge definitions, knowledge types, knowledge hierarchies, knowledge conversion, and knowledge assets. It also explained that there are several definitions and clarifications of knowledge management, because of the wide range of its different purposes. Knowledge management has been observed as an aspect of IT, as a human resources matter, a course of dealing with information events, and as a complete view or a premeditated issue, which covers most of the other aspects. This study has embraced the complete view, as knowledge management comprises − besides the premeditated purposes − the hard (IT) and soft (process and people) dimensions.

In addition, the connection between strategic management and knowledge management were explained and the knowledge management change was argued. This research aimed at identifying the interrelationships of people, organisational politics and organisational culture that can yield effective KMS implementation in a parastatal organisation. This was based on the perspective of investigating the level to which people, cultural and political forces are made use of in the public sector, specifically a parastatal organisation, for effective KMS implementation. With the growing significance of organisational culture, organisational

politics and individuals' perception regarding the effective implementation of KMS in a parastatal organisation, several prospects exist for scholars in information structures to further the awareness of the important model for information sharing by groups, individual employees, and institutions.

The motivation behind the different hypotheses suggested that positive attitudes from individuals, a congenial working environment within a traditional organisational culture, and organisational politics that are primarily modulated by leadership functions might not necessarily translate into the effective implementation and successful use of a KMS in parastatal organisations. However, it could be possible that various employee groups might impede the implementation of KMS, because group dynamics might differ from those of individuals. Such notions are important because teamwork has shown to improve organisational performance. On the other hand, the literature review showed that job ambiguity and the lack of effective deployment of employees cannot be addressed by merely encouraging teamwork. Rather, such initiatives could hinder the effective implementation of KMS as long as a conducive environment has not been created that will encourage knowledge sharing.

CHAPTER 3: CASE ORGANISATION AND DESCRIPTION

3.1 Case Organisation

This study explored the influence of organisational politics, people, and organisational culture in the implementation of EKMS in a parastatal organisation in SA. The parastatal organisation of interest is a renowned public transport organisation. This section describes the case study. The case organisation defines the boundary of the case and moves beyond the initial boundary of being a social context to capture other conditions such as people and culture (Anderson et al., 2005; Mills et al., 2010). It was selected based on the uniqueness of the case as discussed in justifying a single-case case study in the research methodology.

The following four reasons underpinned the selection of the referred parastatal organisation, referred to from hereon as organisation X: First, the shareholders and passengers cannot get services to meet their varied needs in their context of use. Second, the transformation efforts of the technology span across the originating organisation, individuals, groups, the parastatal organisation (transport), and society, with efforts to redefine the concept of use regarding knowledge management systems. Third, the case organisation, organisation X, has problems in deploying technologies with specific goals that can be identified as innovative strategies; hence, personnel, organisational culture and organisational politics are non-technical aspects, and they are empirically verifiable, since they are tightly linked to an EKMS. Lastly, there is a challenge in knowledge sharing and retention, where employees not easily share knowledge and that there is non-availability of KMS in selected organisation. Therefore, the researcher was able to identify these aspects as potential predictors of EKMS for the case organisation (Clayton and Myers, 2015).

3.2 Macro Context

3.2.1 Parastatal environment in South Africa

The parastatal environment in SA is the specific macro research context where the technology operates. Context describes the non-technical features that the EKMS implementation is associated with. It is relevant to the system's operations, since its causal operative mechanisms do not function in a vacuum (Carlsson, 2005). When this setting is a

place (in this case SA), it is considered as relevant to the system implementation, and also to the unintended consequences that emerge as a result of its implementation (Dourish, 2004; Markus and Robey, 2004).

South Africa is located at the southern tip of the continent of Africa, with a population of about 53 million (StatsSA, 2017). With a rich tapestry of cultural, ethnic, and linguistic diversity, the main four groups of the population are: Black African 79.2%, White 8.9%, Coloured 8.9%, and Indian/Asian 2.5% (StatsSA, 2017). These population groups reflect the cultural and linguistic diversity, having eleven official languages, with English as the main language of government and business.

After SA's change to a democratically-elected system in 1994, there was a deep-rooted social requirement to consolidate the various cultures to avoid a scenario where some cultures could become extinct in the long term. Therefore, these requirements make the parastatal environment in South Africa unique (Dean, 2008). The new South African Government in 1994 was faced with the challenge of integrating Western and African cultures, and such an undertaking meant that spaces such as the public sector, where the new government sought to demonstrate the country's diversity, was characterised by diversity, continuous adaptation and change, and also elements of conflict and intolerance, which, with regard to this study, caused problems for knowledge management (Du Toit and Steyn, 2011). One of the root causes for such a challenge is demonstrable through policies such as affirmative action, which seeks to elevate the position of historically disadvantaged black people, women, and people with disabilities, while seemingly sanctioning historically privileged white people, especially white males in the world of work (Dube and Ngubane, 2012). This naturally causes friction in the workplace, and disgruntled workers become unwilling to share their knowledge. Historically privileged workers may be hesitant to share the knowledge they have in the form of memory and experience, while the beneficiaries of affirmative action become unwilling to communicate IT knowledge relevant to the future of the organisation's competitiveness within a constantly changing environment.

The other challenge within the parastatal environment is the language barrier. Diverse workforces in parastatals come with diverse home languages, and this presents a challenge for sharing knowledge (Majavu, 2016). Many employees in parastatals are also reluctant to share knowledge whenever they succumb to challenges of interpreting concepts that they

deem ambiguous, and when they find it challenging to get their message across in a different language.

As referenced in the introductory statement to this discussion, language problems in South African parastatals are exacerbated by the existence of nine ethnicities who belong to different communities, have different cultural languages and their own vernacular. It therefore follows that knowledge sharing in such a context becomes severely hampered by lapses that can emanate from these communication challenges (Carolissen, 2018). Further to this, there exist different communication styles among workers in parastatals who come from a diversity of cultural backgrounds. White South Africans tend to lean toward more explicit communication styles such as contractual agreements that are binding, whereas communication among employees from African cultures tends to be implicit.

Another issue pertaining to the context of parastatals in SA such as organisation X is the manner in which the public sector organisations are managed. Three management styles (Eurocentric, Afro-centric and Synergistic Inspirational) directly or indirectly influence South African businesses. The Eurocentric approach espouses the value system of Western cultures, which chiefly comprise individualism and self-interest (Majavu, 2016). Due to the history of colonialism and the legacy left by repressive policies of the past such as separate development, the Eurocentric approach is still dominant in SA's business environment. In line with this trend, the oppressive policies of the past resulted in a lack of trust among black employees toward all that is considered alien and foreign, and among white employees toward all they consider will 'remove them'. This lack of trust presents a serious challenge to knowledge sharing among employees in parastatals. Previously disadvantaged groups still consider Euro-centrism to be an extension of oppression, arguing that it leads to a socialisation of people according to identification of race and ethnicity. This is problematic, because the processes of sharing, distributing and utilising knowledge largely depend on trust (Chiguvi and Magwada, 2016). The cost of low trust is detrimental to an organisation, because personnel's involvement, commitment, and organisational success are compromised, unlike in the case of high-trust environments (Serrat, 2017). Unfortunately, a major section of the South African society strongly resent any form of Euro-centrism at work, and this sets into motion divisions in the workplace that hinder knowledge sharing.

The alternative approach that is applied in South African parastatals is the Ubuntu-based system, which in contrast to the Euro-centric approach, embraces Afro-centricity. It encourages people to extrapolate lessons from lived experiences at home when dealing with challenges within the workplace, whether these challenges are internal or external to the organisation (King and Kruger, 2007). This type of approach is viewed as more inclusive in comparison to the Euro-centric approach, which is met with criticisms of exclusivity by the black workforce. The Ubuntu approach is characterised by the values of the community, inclusiveness, and supportiveness, all of which are regarded as important to approachability of management, and are efficient in sharing an organisation's readily available information. However, a qualitative study by Dube and Ngubane (2015) studied the impact of cultural diversity at the Department of Science and Technology, a public sector organisation, and found that multi-culturalism did not act as a catalyst to sharing knowledge informed by various cultural frameworks. Sharing of knowledge across cultures was very rare, as many informants revealed. Staff members tended to share knowledge only within their own cultural and racial groups, and with those elements that championed values and behaviours similar to theirs (King and Kruger, 2007).

The Synergistic Inspirational approach, on the other hand, is one that embraces both the approaches mentioned above. It involves the merging of time-honoured African management practices, principles and philosophies with modern Western management methods (King and Kruger, 2007). Many believe that this is the best approach for South African organisations to follow, since it incorporates inclusivism by seeking unity in diversity, basically promoting the development of common values, in addition to building trust and respect when values differ.

3.3 Meso Context

3.3.1 Distinctiveness of the case and conceptual model fit

Case study research can either refer to a single case or multiple case studies (Yin, 2017). A single case study for theory development was chosen for the present study, and will be discussed in detail in Chapter 4. Schofield (2002) classified the type of single case study as a "*what could be"* case study, which has also been corroborated in IS literature (Sarker et al., 2012; Silva and Hirschheim, 2007). Such a case study allows the researcher to develop a deep understanding of the effectiveness of knowledge management systems in their socially-embedded context (Orlikowski and Lacono, 2001), and of design actions related to their use

(Hovorka and Germonprez, 2011; Carter et al., 2016). Findings from case study research are not only generalised to the theory that explains the situation, but also can be generalised across cases that are substantially similar, because one is dealing with open systems (Yin, 2011; Easton, 2010; Schofield, 2002). From the literature, there was no conceptual model that fitted the understanding of non-technical aspects for effective knowledge management in a case organisation, which is where the conceptual model in Chapter 2 (Figure 1) was developed to assist in collecting data for exploratory theory development.

A single case (organisation X), based on its unique role in SA, was identified and selected by drawing from Schofield (2002). Schofield's (2002) concept also relates to Yin's (2011, 2017) single case extreme and unique conditions, which Sobh and Perry (2006) confirmed as being enough to justify single case research. The present case is *extreme* in nature in the sense that the event under study (that of knowledge management effectiveness) represents a condition that could potentially yield a rich source of insight to allow it to deviate from a more general case, a state that other similar cases might wish to achieve (Germonprez et al., 2011).

Particularised to this study on EKMS, the case *uniqueness* stems from the fact that most research on IS use in individual contexts assumed the IT artefact to be static and passive, with few studies investigating personnel, organisational culture and political aspects for EKMS (Kuo et al., 2011). Where people, cultural and political factors had significantly affected an effective knowledge management (Barki et al., 2007), studies often ignored the influence of the co-relation of the non-technical aspects of KMS and that of effectiveness, or they did not capture the factors related to its implementation (Hovorka and Germonprez, 2008). Most of the studies also related to ethnic culture or party politics and their influence, and not to the organisational aspects of these two factors. Consequently, the case study is uniquely positioned for this kind of research situation, as it epitomises an open IS phenomenon with KMS properties. Personnel, organisational culture and organisational politics are represented by experts, and are encouraged to choose what and how to represent such a world, based on what the IS affords (Volkoff and Strong, 2013).

The researcher argued that the knowledge management system was not new in the context of parastatals, but this phenomenon was rarely studied in its context for KM. In order to investigate the causal processes that are significantly related to EKMS, the social structures causing the events should be known. Studies on this kind of IS phenomenon tend to develop

prototype systems in the private sector for experimental studies. However, the researcher argued that such studies were relatively powerless to explain what non-technical aspects affect the systems' effectiveness, due to the contextual conditions that strongly affect its effectiveness, which are external to the software artefact (technically) (Heyer and Brereton, 2010).

The present study involved investigating non-technical aspects in a 'real' natural context. Thus, a single case that at least approximated a theoretical ideal situation was chosen, with the goal not to generalise to other cases, but to uncover what *could be*, and under what conditions, and explain how the conceptual model was developed in the choice of the case.

3.4 Conceptual Model Informed the Choice of this Case

The conceptual model followed after a brief discussion of theory related to the phenomenon. The conceptual model developed by the researcher in the literature review was informed by the relevance that all parastatal organisations report to government in SA, as is the case in most other countries. The reporting to the Minister of Transport as per below high-level structure shows clearly that government forces dictate what is happening in the parastatal organisation. All appointment at the highest level of the organisational structure from the board down are political appointments; therefore, the culture within the organisation is also known as such. People (personnel) within the organisation, and particularly senior leadership and management, behave as if they are politicians, since the culture of the organisation for all initiatives or strategies (EKMS) will be affected by such appointments. Organisation X was also ideally suitable for the case study as it is a monopolistic parastatal that has experienced major challenges regarding the operation, its workforce and its service to the community. Hence, people, the organisation's organisational culture, and organisational politics as non-technical factors will probably play a role regarding any knowledge management system's effectiveness.

3.5. Negotiating Entry

Access to the organisation X case was important, because this research would not have been possible without gaining the organisation's approval (Walsham, 1995, 2006). This had been achieved through emailing the consent letter to the organisation's executives at head office,

where the researcher signed a confidentiality agreement (Appendix 4); all terms and conditions were stipulated in a letter (Appendix 3), and this was emailed to the chief strategic officer. The target people were executives, senior managers, middle managers, and staff members who were specified to the request for data collection.

3.8 Background and Services of the Case Organisation in South Africa

The research was a case study within a parastatal organisation in SA engaged in public transport, organisation X. The organisation has approximately 17,000 employees and is located in SA. The organisation was envisaged according to Section 22 of the Legal Succession to the South African Transport Services Act of 1989 noting the 2008 amended version. It is a parastatal that is wholly-owned and controlled by the state, and reports to the Minister of Transport. The lawful obligation instructs the organisation to make available fare train services in the urban areas of SA, being the inter-city, long-distance, bus and rail services within, to and from the borders of SA. This obligation is implemented after and in consultation with the Minister of Transport, and also under the ministry's guidance. Central to its planned objectives is the obligation to the state's nation-wide growth objectives and agenda, which among other goals, is to come up with a feasibility plan to turn around the decades of reduced or under-investment in and the decline of rail traffic.

Organisation X needs to implement EKMS; however, it appears that the system will not be effective due to poor organisational politics and the lack of a structured approach to the implementation of a KMS. Managers have realised that employees are struggling when they are using manual processes; at the same time, they are resistant to change and toward new technological systems. There also appears to be a feeling that non-technical aspects of KM, which in the past sustained the organisation, have been ignored in such change process. Hence, the researcher set out to determine the extent of the integration of non-technical aspects of KM into the KMS. The following section reviews literature on the organisation and the research model that was developed to guide this study**.**

The core objectives and the key business of organisation X are to:

a) Ensure that − at the request of the Department of Transport − rail commuter services are provided within, to and from the Republic in the public interest; and

b) Provide − in consultation with the Department of Transport − for long-haul passenger rail and bus services within, to and from the Republic in terms of the principles set out in section 4 of the National Land Transport Transition Act, 2000 (Act No. 22 of 2000).

The second objective and secondary business of organisation X is that the organisation must produce revenue from the efficient and profitable use of the tangible and intangible non-current assets acquired. In addition, organisation X shall carry out its objectives in line with the state's key economic and transport policies, and societal objectives.

3.9 Chapter Summary

The organisation under study is a government-owned parastatal that is reporting directly to the Department of Transport in the South African Government. Whenever there are strategic initiatives that need to be implemented, leadership must first obtain the approval by the Department of Transport. Organisation X's organisational structure comprises the group chief executive officer, executive management, general management, and senior management. The influence of politics (both organisational politics and government politics), culture (both organisational culture and ethnic culture) and personnel are non-technical aspects that seem to hinder the progress of turnaround strategies in the organisation, including the implementation of EKMS (Clayton and Myers, 2015). The organisation has approximately 17,000 employees within business units and subsidiaries, and different departments. The parastatal is under the control of a group chief executive officer at the cooperate office, and each business unit has its own chief executive officer, executive managers, and also general managers who form part of the executives. The parastatal employs senior managers, middle managers and general employees in the various departments.

The conceptual model developed by the researcher was based on addressing the non-technical aspects for effective knowledge management implementation. The model included the individual, group and organisational level regarding personnel (people), the organisational culture, and organisational politics, and their relationship with EKMS. The case was selected based on its uniqueness, as it is the only parastatal in South Africa that combines rail, rail infrastructure, and long-distance rail services.

CHAPTER 4: RESEARCH PARADIGM

4.1 Introduction

This chapter discusses the paradigm that paved the roadmap for the present research. According to Wilson (2008:46), a paradigm is best defined as "the progress of scientific practice based on people's philosophies and assumptions about the world and the nature of knowledge". A research paradigm is seeking to establish the type of relationship found between theory and empirical data. An empirical study involves the researcher observing a phenomenon in greater depth, and gathering information with the aim of depicting a conclusion that adds value to the existing knowledge. In a theoretical study, the researcher makes use of others' writings; the researcher draws an understanding from these writings, comes up with a new view on the same situation, and adds to the existing knowledge. According to Feilzer (2010), one can be an empiricist if the study area the researcher is researching or studying lacks past theoretical work on it. Theoretical research does not arise from zero bases, but makes use of past works and findings of others brought through empirical research, and it either objects to or improves the past work.

All research methodologies are based on specific ontological and epistemological commitments. The ontological assumptions reflect the type of realism that exists, while epistemological assumptions embark the way the respective realism could be explained (Peters et al., 2013). Based on the ontology and epistemology underpinning the realism, methodology is undertaken that offers particular strategies to explain the realism or observation. Thus, ontology paves the way for epistemology, while epistemology guides the structure of methodology. Methodology involves portraying a study design, and collecting, analysing, and interpreting data (Mingers, 2001).

This research considered ontology as "the claims or assumptions that a particular approach to social inquiry makes about the nature of reality" (Petty et al., 2012:6). The philosophical underpinning of a study should be made explicit for readers to "critique a specific research [strategy] for the extent to which it is true to the ontological and epistemological commitments to which it adheres" (Paroutis and Saleh, 2009:45; Walsham, 1995). Hence,

this study was guided by critical realist assumptions. In this regard, the main schools of thought that guided this research are elucidated in the subsequent sections.

4.2 Main Schools of Thought in Research

According to Scotland (2012), the underlying assumptions in current IS research approaches have been the answers to the mutually interdependent questions of:

a) Ontology, which focuses on reality's nature and form, and anything that can be understood about it;
b) Epistemology, which transmits the "position or posture" the investigator has to adopt to obtain knowledge;
c) Methodology underpins the way researchers should undertake to explore whatever they believe or assume from theory, deciding which approaches are suitable, given the investigators' underlying philosophical assumptions.

The different schools of thought emerging out of the answers to these questions, particularly as they influence IS research, were well debated in the IS research literature (Myers and Klein, 2011; Galliers, 1991; Walsham and Sahay, 2006), of which some were discussed in this study. Depending on the research philosophy, research might be classified as critical, positivist or interpretive. According to Walsham (1995), research methods such as case study and action research could be critical, interpretive, or positivist. However, this distinction is often extremely contentious.

To tease out these distinctions, this section is separated into smaller subsections. The first subsection addresses the positivist school of thought, while the second subsection describes the critical social theory approach to information system research. The third subsection outlines the interpretive approach in information system research. The next section portray the tenets of the research paradigm.

4.3 Research Paradigms in IS Research

Any scientific knowledge that is generated in IS is informed by research paradigms. The term paradigm is often used in multiple and confusing ways in IS (Mingers, 2001, Mingers et. al., 2013). For the present study, the researcher contended that the research paradigm would be

guided by ontological and epistemological stances that would supplement each other. The worldview or realism about an observation that guide a scientific inquirer are often driven by internal perceptions, experiences, and viewpoints, which determine their meta-theoretical assumptions about the world and are intrinsically connected to the underlying methodological approach adopted (Becker and Niehaves, 2007; Morgan, 2007; Bergold and Thomas, 2012).

Trauth (2001) classified the paradigmatic worldview as the 'theoretical lens' and 'skills' of the researchers that often reflect their 'self-driven cognitive entity' for influencing a research project. The inevitable mindset, knowledge, ethics, and biases that researchers bring into the research process also constitute the intrinsic part of the research (Janesick, 2000). A researcher's worldview might be unbiased while interpreting an observation, and this philosophy is the basis of positivistic research (Orlikowski and Baroudi 1991).

Thus, the worldview of a researcher is influenced by: (1) paradigm as shared beliefs, and (2) paradigm as model examples of research (Morgan, 2007). Paradigm as a shared belief refers to the assumptions and practices that are shared within a community of researchers regarding ways of viewing reality (Morgan, 2007). Paradigm as a model example treats a given piece of research as an exemplar regarding the ways and theory that underpin reality, and the way prior research has been done (Morgan, 2007).

Barnes (1982) considered the "paradigm as model examples of research" and its explicit consideration as important in most IS research. Research projects that serve as paradigmatic examples are themselves considered as 'case studies'. IS researchers have framed various paradigmatic models as examples for undertaking positivist research design (Benbasat et al., 1987; Eisenhardt, 1989; Ravenswood, 2011). Similarly, principles and examples for conducting interpretive approaches (for example, Klein and Myers, 1999) or critical realist (for example, Wynn and Williams, 2012; Williams and Karahanna, 2013) research studies have been chosen through paradigmatic models.

4.4 Ontological Considerations

Ontology is largely focused on what type of things are present, and what entities or objects the universe contains (Njoloma, 2019). Ontology is concerned with the real world. It is suitable to use and apply to IS studies (knowledge management systems), chiefly for the

reason that these services belong to the real-world systems, and ontology may assist in recognising an important concept to be modelled about them (Wand and Weber, 1993).

There are two main conflicting ontological viewpoints in IS research, which are relativist and realist views. Realist scholars believe that the outward world is created based on pre-existing solid structures, which exist independently from the individual's cognition (Fitzgerald and Howcroft, 1998:323). Relativist scholars believe that a difference in reality or what is true is a subjective construction of thought or mind. Additionally, they believe that the perception of reality is influenced by socially-transmitted terms, which vary across cultures and languages (Fitzgerald and Howcroft, 1998:323).

The realist contemplates the outside world as taken for granted, and that the presence and existence of the outside world stands independently from experience or thought (Krauss, 2005), and reasons that it is supposable for science to recognise rational knowledge of this reality (Quale, 2006:235). It is a world, in which individuals see themselves embedded, and in which the individual exists. Therefore, one is capable to adjust in the world through one's actions, which bring change.

On the other hand, relativists are of the view that all viewpoints are similarly authentic and that the truth is based on each individual's perceptions (Cox et al., 2014); objective reality is therefore useless to be spoken about. The shared theme embraces that some central aspect of thought, evaluation, experience or even reality are somehow comparative to other things. For example, ideal standards of rationalisation, truth or moral opinions can be considered relative to genetic forms, customs and words. In principle, consensus is not the essential fact of life, but diversity is (Fitzgerald and Howcroft, 1998). Hence, a relativist's observation is against the notion of pre-existing solid structures as a standard or measure of reality.

4.4.1 Researcher's ontological stance

Realists critically view the principle that even though people might be guarded or influenced by political and cultural aspects, they can and should attempt to change their economic and social circumstances (Bhattacherjee, 2012). Relativist's techniques cannot answer experimental questions (Burns and Burns, 2000), because science is concerned with exact levels of significance (Gruninger, 2009). In the present study, the researcher wanted to gain an understanding of whether and how knowledge management systems in parastatal

institutions are affected by non-technical aspects, since the researcher acknowledged that there was a lack of essential knowledge to realise any information of the parastatal institution phenomena. When researching knowledge management systems, it is sound to use an approach that is objective, since objectivity in scientific research is essential. The methodology and data are all available for interested researchers to examine; hence, allowing interested researchers to check the validity of the results, should they wish to reproduce the same study.

Using realist perspectives, which recognise that in the world there is only a single true reality, in this study, the researcher had to remain objective in order to capture data correctly and present fairly this single reality (the parastatal organisation X) (Gomm, Hammersley, and Foster, 2000). Empirically, and under the context of consumer behaviour, utility is the chief goal to a consumer, while profit is the sole enabler for all activities to a vendor. The model by Bhattacherjee (2012) emphasises knowledge management systems' motivation factors through the means of technology. The research advanced itself toward a more realist perspective, which is that a parastatal organisation holds independent variables that are far from the influence experienced through non-technical factors, and which can be considered to be passive, and entirely determined and controlled regarding the effectiveness of a knowledge management system. Therefore, in this scope, reason and observation were the chief distinguished ways when trying to understand the non-technical factors. This knowledge is reliant on the senses' capabilities, which is gained through the means of experiments and observations. This ontological assessment fitted the research objectives of this research, which was to test and model elements (measurable processes) of knowledge management systems in a parastatal organisation.

The study's main question aimed to test how people, organisational politics and organisational culture affect KM and disturb the effective execution of KM systems in parastatal institutions. Therefore, answering of the main research question meant that the researcher had to be able to guarantee objectivity, since this removes any bias that might arise from the researcher's beliefs regarding a parastatal organisation. Objectivity allows a developed conceptual model to be tested, leading to validation and replicability of the results (Olzak and Nagel, 1986). It also allows findings to be reported on precise intensity of significance. Researcher's bias was also removed or eliminated through the use of a self-controlled survey instrument that allowed participants of the survey to answer questions

without any interference from the investigator in the course of the administration phase of the survey (Nagel, 1986). The method enabled, to a certain extent, content and time-free generalities to remain about responses (Olzak and Nagel, 1986).

4.5 Researcher's Epistemological Stance

Paradigm as an epistemological stance includes the meta-theoretical assumptions associated with positivism, interpretivism, critical realism, critical theory, and pragmatism (Goldkuhl, 2012; Orlikowski and Baroudi, 1991, Abadie, 1966, Mingers, 2004). Paradigm as an epistemological stance was often implicitly discussed in IS research and subsumed in the paradigmatic worldview of the researchers (Khazanchi and Munkvold, 2003).

Hirschheim and Klein (1989) specified various meta-theoretical assumptions to distinguish paradigms as epistemological stance by drawing from the meta-theoretical schema of Burrell and Morgan (1979). They included (1) functionalism that resonates with positivism; (2) social relativism akin to interpretivism or neo-humanism (radical humanist/critical theorist); and (3) radical structuralism (Hirschheim and Klein, 1989). Other IS researchers (for example, Fitzgerald and Howcroft, 1998; Weber, 2009) classified paradigmatic assumptions in IS research differently. Weber (2009) provided the axiomatic classification of positivist (naïve realism) and interpretivist (relativism) paradigms in line with ontological, epistemological and methodological differences.

The ontological, epistemological, and methodological assumptions accompanying positivism, interpretivism, and critical realism are briefly summarised in Table 2. The researcher was aware of the interest in critical philosophy (Myers and Klein, 2011; Orlikowski and Baroudi, 1991) and pragmatism (Goldkuhl, 2012; Golesand Hirschheim, 2000) paradigms as epistemological stance, but these were subsumed under interpretivism, given the fundamental assumptions of constructivist ontology underpinning these two positions (Butler, 1998; Goldkuhl, 2012).

Table 2: Paradigmatic Epistemological Stance in the IS field

Paradigmatic Elements	**Positivism**	**Critical Realism**	**Interpretivism**
Objective	Description/Prediction (what)	Casual explanation (why)	Understating (how)
Finality of science	Identifying universal laws in observations (actual events)	Expanding knowledge of reality. Accurate causal explanation, bringing the empirical" in phase" with the real	Meaning-making. Bringing the empirical in phase with the actual
Ontology	Naïve realism? Epistemology realism of the Aristotelian empiricism persuasion. Reality is apprehensible	Reality is transcendental, stratified and it exists independent of knowledge with fallibility apprehension	Multiple and often contradictory realities that are equally valid accounts of the same phenomenon
Epistemology	Objective, remain emotionally detached with the object of study and empirically test stated hypothesis	Epistemic relative but bounded by judgemental rationality. Subjectivist co-creation of meanings that is fallible to construe and not of what works for whom, when and why	Epistemic relative with judgemental relativity. By this, subjectivist co-creation of multiple meanings as the reality is possible
Methodology	Experiments/survey and falsification of hypothesise mainly by quantitative methods. Deductive Inference	Retroductive-based methodological pluralism to exhume causal mechanisms rejects stereotyping quantitative methods and qualitative method	Hermeneutical/ dialectical, impossible to differentiate causes and effects, inductive reasoning: time and context-

		as interpretivism. Engage in intensive and extensive type of methodology with triangulation of methods	free are not possible
Axiology (i.e., value)	Research is value-free	Research is value-aware with emancipation/ problem solving mindset	Research is value-bound
Rhetorical (i.e., type of spoken/written communication)	Rhetorical neutrality with formal writing style using impersonal passive voice	Use both impersonal/personal writing styles. Empathic, rich, and thick description engraved in philosophical terminology and interjected with critical discourse. Written directly and somewhat informal	Detailed, rich and think (empathic) description, written directly and somewhat informal

Source: Sarvimaeki, 2013; Peters et al., 2013

4.5.1 Interpretivism

Interpretivists follow the assumption that social reality is determined by understanding the meaning and purpose humans attach to their actions; therefore, this social reality has to be studied through interpretive methods (Bhattacherjee, 2012). Interpretive research involves providing insight into a phenomenon under study through shared meanings, language, artefacts, and consciousness (Klein and Myers, 1999). This stance did not consider objectivism as in the case of the positivistic stance; it was based on the assumption that researchers were subject to the interactions that take place when a phenomenon is being researched, and subject to the meanings people assign to the phenomena (Walsham, 1995).

Unlike interpretivism, positivism assumptions in research and in social science were considered inadequate (Orlikowski and Baroudi, 1991; Tsang, 2013). Thus, the interpretivism paradigm had been widely recruited in IS research (Walsham, 1995) to bring in the social context (Orlikowski and Baroudi, 1991, Fleetwood, 2005). Interpretivism rejects the positivism view focused on the cognitive and latent constructs explaining realism (Manicas, 1998; Peters et al., 2013). This implies that researchers should focus on people's assigned meanings and values to their unique contexts derived from the fluid phenomena (Klein and Myers, 1999; Walsham, 1995). In doing so, they immerse themselves with the subjects/informants as mediators to interact with, and understand the phenomena under study (Walsham, 2006). The weakness of interpretivist approaches is that they undermine the distinction between appearance and the essence of the reality under study (Manicas, 1998; Peters et al., 2013). Multiple knowledge claims through human creativity are conjectured as laws and, as such, theories to explain interpretivism are juxtaposed for explaining them (Walsham, 1995). The notion of social construction of reality allows interpretivism to evaluate and transform the social reality in critical ways (Chen and Hirschheim, 2004; Orlikowski and Baroudi, 199, Klein and Huynh, 2004; Ngwenyama and Lee, 1997). In addition, the constructivist ontology backing interpretivism extends to include pragmatism that aims to gather constructive knowledge (Goldkuhl, 2012).

This paradigm debate began in the late 1980s (Hirschheim and Klein, 2012; Landry and Banville, 1992), with deep-seated divisions, illustrated by conflicts over relevance and rigour (Benbasat and Zmud, 1999; Hirschheim and Klein, 2012, Khazanchi and Munkvold, 2003). As the paradigmatic debate intensified, Mingers (2004) mandated that the quest for single paradigm supremacy was not useful, as it obscured progress in the multi-disciplinary nature of IS and the socio-complex phenomena. Earlier, Lee (1991) as well as Landry and Banville (1992) had been in the forefront of advocating for multi-pluralistic methodologies in IS research. As a result, a growing interest in multi-pluralistic inquiry became advocated in the IS field, in line with its popularity in other related disciplines such as management science (Davison and Martinsons, 2011).

4.5.2. Positivism

Positivism has been a dominant and accepted research philosophy in IS research when compared to interpretivism (Davison and Martinsons, 2011). As Table 2 reflects, a positivism paradigm underpins the objective reality based on the epistemological realist of the Aristotelian empiricism persuasion. This means that the senses are the primary determinant of objective reality, with one's rational thoughts being subject to one's experience (Coreynen et al., 2017; Mir and Watson, 2001; Tsang, 2013). Using statistical methods is a major way of establishing a homothetic body of knowledge among IS studies that subscribe to a positivism paradigm. Hence, quantitative methods such as questionnaire surveys and experiments (Straub, 1989) are most often used.

IS research can be classified as positivist when evidence exists of formal propositions, quantifiable measures of variables, hypothesis testing and drawing inferences of a phenomenon, based on a representative sample of a stipulated population (Klein and Meyers, 1999). Positivism is associated with philosophical stance of the natural scientist (Saunders et al., 2012). Although conventions for evaluating IS case studies according to the natural science model of social science are widely accepted, this is not true for interpretive field studies (Klein and Meyers, 1999). Researchers who are critical of positivism have argued that "the rich insights gained from the complex world, lose their complexity when reduced to a series of generalisations" (Saunders et al., 2012:137).

Positivism and phenomenology are recognised as the two main research paradigms. Feilzer (2010) stated that the positivist approach focuses mainly on facts and causes of social phenomena, without placing much focus on individual subjectivity opinion. Phenomenological approaches put much attention on the meaning, instead of the measurement of the social phenomenon, and focus on the subjective aspects of human activity. Table 3 outlines the features of the two approaches.

Table 3: Positivist and phenomenological approaches features

Positivist	Phenomenological
Quantitative data is produced mostly	Qualitative data is produced mostly
Relatively large sample are used	Relatively uses small samples
Hypothesis testing is done	Each information is subjective
All data is precise and specific	All data is varying
Based on artificial location	Based on a natural location
High reliability	Low reliability
Low validity	High validity
Generalisation arises from sample to population	Generalisation differs from one setting and another

Source: Adane (2018)

Overmars and Verburg (2007) recognised that two styles of research approaches exist: theory-then-research and research-then-theory.

Positivists are of the view that the solution to the epistemology question is simply that reality must be presented objectively, and as such, researchers are capable of discovering it, and this can be replicated by others (Walsham and Sahay, 2006; Myers and Klein, 2011). Positivism deploys the "conceptual model" *(*meaning the formal testing of hypotheses) to conduct social science research, and maintains the epistemological position that objectivity and detachment on the part of the researcher (or observer) is the only effective approach of studying reality.

Generally, positivists aim to test theory or a conceptual framework with the sole aim to increase predictability and understanding of a given phenomenon. One has to note that information system research is therefore categorised as positivist, in case that evidence of hypothesis testing, formal propositions, calculable measurement of variables and the depiction of inferences of a phenomenon from a sample to the targeted population (Orlikowski and Baroudi, 1991:5) are conducted. Therefore, epistemology is the stance the researcher took in this study.

The trustworthiness of the positivistic research is based on statistical results that ensure the reliability, internal validity, external validity, and cross-context generalisation (reproducibility) of the findings (Straub et al., 2004).

Several anomalies are also identified in positivistic assumptions. (1) A reductionist view of causation based on multicollinearity makes it difficult to explain why more or fewer measured correlations exist than might be supposed. (2) There is an unsubstantiated assumption of regularities and explanation that lacks ontological depth (Mingers, 2006). The assumption for a positivistic stance is that knowledge is readily available, and can be observed and measured objectively (Ryan, 2006). It further posits that by focusing on causality, the phenomenon of interest can be reduced to its simplest elements. According to Orlikowski and Baroudi (1991), a positivistic study is one in which there is a quantifiable measure of variables, and one where inferences are made about a phenomenon from the stated sample of a target population. The stance taken in this study was positivistic, as there was an empirical measurement of the relationship and configurations among personnel (people), organisational culture, and organisational politics, and how they are or can significantly relate to EKMS in parastatal organisation. The researcher followed the perspective that there is cross-causality between these three organisation variables, following the evidence in literature (Adeleke and Alegbeleye, 2013; Bahadurand Tanner, 2014; Clayton and Myers, 2015), and that the measurement of their configuration and patterns can be carried out objectively. Therefore, the researcher took an objective approach to the study, whereby there was no involvement with the objects of the study, and tests were carried out empirically (Johnson and Onwuegbuzie, 2004).

4.6 Thought Operations

The reality under investigation does not always speak for itself (Sayer 2000). Rather, one's logical form of inference or reasoning, for example, one's ability to analyse, abstract, relate, interpret, and draw conclusions is needed to develop knowledge about such reality (Danermark, 2002). The logical form of inference or thought operation provides the different ways of arguing and drawing conclusions when one links the observations about the reality one is investigating to the general scientific concepts (Chiasson, 2005). The logical form of inference involves reasoning that takes the form of formalised rules for argumentations, whereas the thought operation is the researcher's powers of abstraction, imagination and creativity as different ways of reasoning, interpreting, and drawing conclusions, without

following strictly formalised rules (Danermark, 2002). The logical form of inference is captured by deduction, induction, and partly by abduction, while abduction and retroduction take the form of imagination and creativity as the thought operation (Chiasson, 2005).

Deduction, induction, abduction, and retroduction are differentiated into four modes of thought operations. The four modes of thought operations are distinct; however, they complement each other in research practices. The inductive inference works the opposite way when compared to deductive logic (Spens and Kovács, 2006). The inductive logic moves from specific observations to draw universally valid conclusions about a whole population, or to draw broader generalisations and theories. The inductive logic helps researchers to see similarities/patterns in a number of observations and, based thereon, draw conclusions that such similarities also apply to non-studied cases. In contrast to deductive logic, the conclusions derived from inductive logic entail addition of new knowledge beyond what is in the premise. Thus, one starts from something known and draws conclusions beyond what the something one started with entails. Similar to deduction, induction can be used in different ways in concrete research practice, regardless of the research methods or paradigms used (Danermark, 2002). The inductive-interpretivist research process favours theory development rather than testing; therefore, empirical evidences are applied to strengthen the robustness of the research framework, culminating in the generation of new knowledge. The strength of inductive logic lies in ascribing meaning to events in relation to a wider context, while its limitations are that any inferences derived can never be either analytically or empirically certain, and the conclusions are restricted to the empirical level.

4.7 Deductive – Retroductive

Deductive-retroduction (Figure 5) is a valuable logical inference or rather a creative iterative research process. It involves (1) theoretical knowledge, i.e., the deliberate application of literature and theory for explaining a phenomenon, or (2) the development of a conceptual model after the literature and theory are able to explain a phenomenon (Mingers et al., 2013; Spens and Kovács, 2006, Rousseau et al., 2008).

Deductive reasoning takes place when a researcher derives valid and specific conclusions from given premises, and the conclusions must be true if all the premises are true. With

deductive logic, a researcher examines the logical validity in the scientific argument (Danermark, 2002). Such logic thrives in propositional assertions, which also constitute the foundation for a hypothetical-deductive method (Danermark, 2002; Piraksa et al., 2014). The positivistic research process might begin with prior literature or existing theories to formulate the research framework, as illustrated with solid lines in Figure 3.

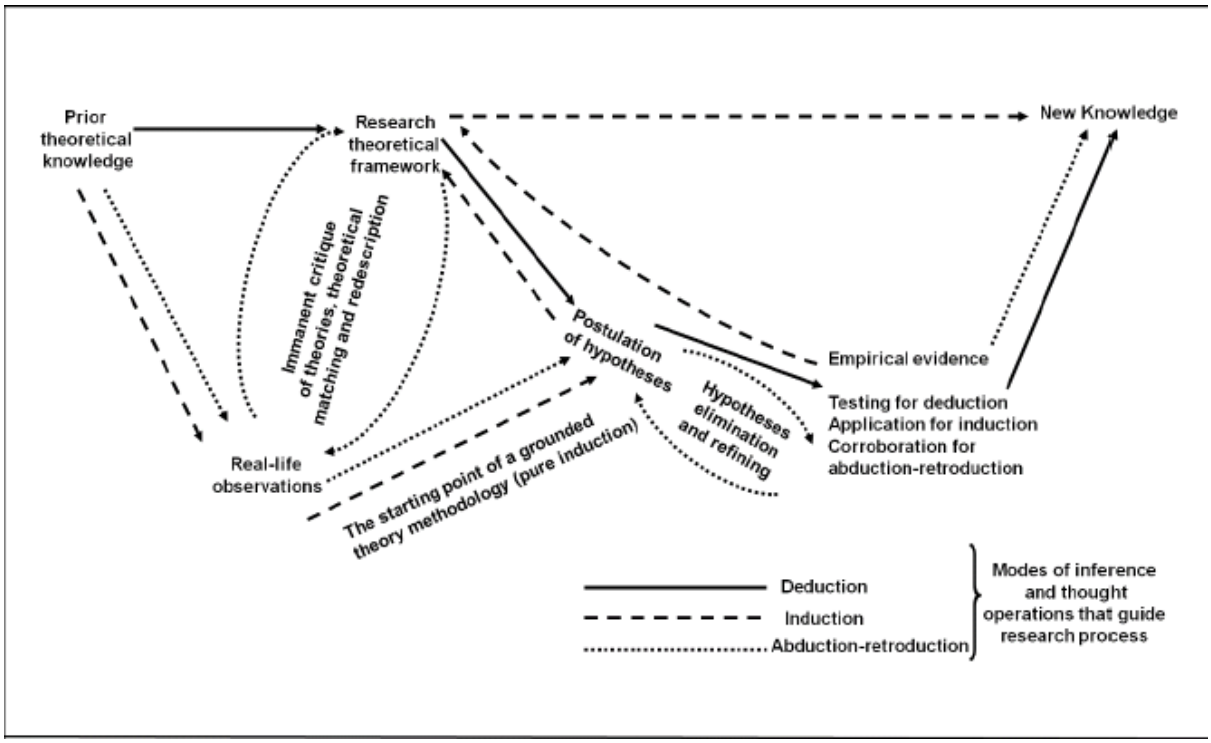


Figure 3: Paradagmic thought operations that guide the research process

Source: Spens and Kovács (2006)

A deductive approach also involves developing propositions or hypotheses based on existing theory or theoretical work, and then engaging in an approach to test these propositions or hypotheses, after which they are either confirmed or rejected (Bhattacherjee, 2012). The present study followed this approach by conducting an extensive literature review on all key areas in relation to the study. The literature review resulted in the development of a conceptual model that consists of five constructs as informed by literature. In addition, the conceptual model, as well as the literature, led to the development of four hypotheses that were tested using quantitative measures. From the tests conducted, the findings confirmed or rejected the hypotheses, as shown later in this dissertation. This approach also served as a guide in answering the research questions and realising the research objectives of this study.

The limitation of deduction is that no new thing about reality is discovered (Danermark, 2002; Gregor, 2006). However, where the retroductive approach closes in order to get flexibility of moving backward, the researcher then uses deduction to explicate it further and evaluate the aspects of these new ideas (Easton, 2010). Retroduction is moving backward from the observable events that were recontextualised during the abduction process to trace the generative mechanisms that make such an event possible. In other words, one moves from the observed experiences to postulate the underlying structures and mechanisms that are accountable for the event or phenomenon (Mingers et al., 2013). In Figure 4 below, the arrow pointing downwards illustrates one's moving backward from the empirical domain that is observable to the real domain, to uncover the mechanisms in their situated context.

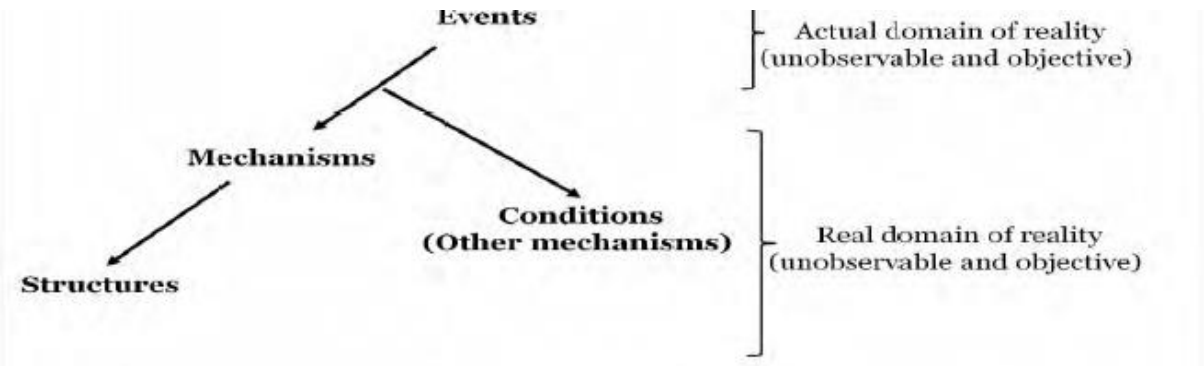


Figure 4: Retroductive logic

Source: Sayer (2000:15)

Since mechanisms may be objective, retroduction is used as a retrospective inference of such mechanisms from structures' descriptions of their experiences. Lawson (1997) metaphorically gave an insightful description of retroduction. For the purpose of this research, a deductive-retroduction approach was applied. The researcher deemed this approach suitable, because of the nature of the study, whereby the ideas in theory were logically connected to the emerged evidence of the phenomena in this study. Furthermore, the current study was not based on building new theory from the ground up, as is the case for an inductive approach (Neuman, 1994), but rather sought to test the conceptual framework informed by literature and existing theoretical work against 'hard data' and to find support for the theory (Neuman, 1994).

4.8 Chapter Summary

This chapter outlined the paradigm, the schools of thought on the interpretivism and positivism, and how IS research can be classified as positivist when evidence exists of formal propositions, quantifiable measures of variables, hypothesis testing, and drawing inferences of a phenomenon based on a representative sample of a stipulated population. Positivism is associated with the philosophical stance of the natural scientist. The chapter also looked at paradagmic thought operations that guided the research process. Finally, it examined the deductive approach, which also involved developing hypotheses based on existing theory or theoretical work, and then engaging in an approach to test these hypotheses, which will be detailed in the next chapters.

CHAPTER 5: RESEARCH DESIGN AND METHOD

5.1 Introduction

This chapter focuses mainly on providing an outline of the research methodology and also research methods used to attain the objectives of the research. The discussion is in line with the research settings provided in Chapter 1, and was mainly guided by the literature review in Chapter 2. This chapter is grouped into four main sections. The first section covers the literature regarding research methodology and research design; it proceeds to look at the purpose of the research, research approach and design, what differs between quantitative and qualitative research methods, data collection methods, and lastly, the justification of research methods selected and used in the research. The second section elaborates on adopted data collection techniques. It also covers the questionnaire design and pretesting, the choosing of a survey sample, collection of data, demographic characteristics, and the response rate. The third section explains the data analysis techniques for qualitative and quantitative methods; validity and reliability issues are also looked into, and finally, a conclusion of the chapter is presented.

5.2. Research Philosophy

The major objective of this study was to explore the ways through which people, organisational politics, and organisational culture influence the effective implementation of a knowledge management system in a parastatal organisation. To achieve this objective, a conceptual model was framed with the referred constructs. Moreover, a systematic review of literature was also done to support or challenge the conceptual model. For any research, the philosophical assumptions and their respective stances should be considered before the initiation of the study. Such stances would pave the methodology of the research and the relevant data that need to be considered for achieving the research objective. The philosophical assumptions for any research consist of three fields of inquiry, namely, ontology, epistemology, and research methodology. Ontology refers to the forms in which the reality of a phenomenon is realised. Therefore, ontology or realism could be observable or unobservable. Observable realities are those that are easily tangible, while unobservable realities are those that are intangible. Epistemology refers to the process by which the reality

could be realised. Therefore, ontology identifies the reality, and epistemology is the way of identifying the reality. Based on the ontological and epistemological stances, the research methodology was designed.

Depending upon the nature of reality, ontological stances are classified into two types; objectivism and subjectivism. The objectivism stance of ontology contends that the reality is existent in terms of tangible and objective measures. Therefore, the objectivism stance of ontology contends that the reality could be identified or explained on the basis of the referred measures. In this present study, it was contended that the implementation of knowledge management practices could be measured and realised through tangible and objective end-points. On the other hand, the subjectivism philosophy of ontology contends that the reality is unobservable, because it could only be realised through subjective measures. Different types of assumptions and data are required to explain the unobservable reality. The present study contended that KM practices are not an unobservable reality, because its implementation can be observed and can affect the operability and functioning of the organisation.

The epistemological stance that was considered for this study was positivism. The positivism stance is aligned with the objectivism stance of ontology. A positivism stance seemed appropriate, because there are different tangible constructs that influence the effective implementation of KM. Since the attributes of people, organisational culture, and organisational politics are well-defined and tangible, a positivism approach was most relevant. On the other hand, the interpretivism stance of epistemology was adopted to explain how the reality or intangible needs should be interpreted through complex logic and relations. It was considered that the interpretivism stance was appropriate when the ways of explaining the reality remain latent. The subjectivism stance of ontology is related to the interpretivism stance of epistemology. Hence, the objectivism philosophy is aligned with positivism, and the subjectivism philosophy is backed by interpretivism. In the former, a quantitative approach is more appropriate; while the qualitative approach is more suitable for the latter, because the objective measures are quantified in terms of alphanumeric parameters, while qualitative terms cannot be estimated through quantitative parameters. The present study was undertaken primarily based on quantitative data, because the constructs related to the end-points were assigned alphanumeric values. In addition, qualitative analysis was also undertaken to understand the findings of the quantitative data in an in-depth manner.

Brannen (2017) argues that quantitative approaches are frequently used when a researcher intends to use a positivist method to investigate a phenomenon. In this study, the researcher's philosophical perspective was grounded on the notion that the world of phenomena holds a reality that can be conveyed in causal relationships, and can then be measured in the form of data, in an accurate and reportable manner (Brannen, 2017). On the other hand, qualitative approaches are usually selected to be used when a researcher is of the view that knowledge is created by the lived experiences of the participants, because the reality and the researcher are inseparable (Walsham, 2006). When a study involves both qualitative and quantitative data, a mixed methodology approach is more suitable. Liamputtong (2010) highlighted the need for a mixed methodology research where qualitative and quantitative data are both considered for answering a research question. Different authors have explained the utility of mixed-method research in spite of the paradigm war between qualitative and quantitative data (Antwi and Hamza, 2015).

5.3. Research Methodology

Mauthner (2015) defines research methodology simply as a collection of ordered procedures that the researcher applies to create reliable and valid research results. It typically encompasses numerous methods, techniques, or approaches. The succeeding sections show the research strategy, methods, and techniques, and approaches appropriate for this research, and how they were applied in practice, as well as the researcher's reasons for selecting them or making them the adopted choices. The capturing of data was done using questionnaires that were separated into seven sections or subdivisions, namely: Demographical information of participants; organisational functions; people; culture; politics; the efficiency of the KMS; and knowledge sharing.

In the current study, a mixture of measures was applied; for example, the effect of people, culture and politics (non-technical) in the efficiency of KMS; and the efficiency of the available IT system currently used (technical) in the parastatal to look for information. The researcher also added one open-ended question (Section E). Organisation X, the case that was explored in this study, comprises roughly 17,000 employees nationally in SA, which represented the population of the study. Using stratified sampling, 400 employees were selected to represent the sample. The questionnaires were dispersed in communities of Gauteng, the Eastern Cape, KwaZulu-Natal and the Western Cape in SA to individuals within

the selected communities. The study used the concept of a quantitative survey to gather the required information. The quantitative survey's aim was to establish frequencies, means or other parameters and determining the diversity of the topic of interest within the given population (Espadoto et al., 2019).

Orlikowski and Baroudi (1991) stressed that when research strives to realise the application of KM systems in parastatal institutions as a phenomenon, then recognising exact and latent measures, which will foresee the scope of the reality, is the most appropriate way to explain the causal relationships. The research philosophy incorporated that the researcher had to:

a) Pose measurable variables;
b) Identify latent measures through cause-and-effect relationships;
c) Propose determinants in the present literature of non-technical factors influencing knowledge management system implementation;
d) Frame testable theories;
e) Seek to gather data from a sample number of survey participants;
f) Make statistical inference about non-technical factors influencing knowledge management system implementation; and thereafter;
g) Generalise inferences from the surveyed sample non-technical factors influencing knowledge management system implementation in a parastatal organisation in the South African population.

5.4 Research Strategy

The research strategy for this research was aimed at conducting a survey to look for assistance for the established propositions to answer the research objectives and the research questions. According to Bhattacherjee (2012), a survey research strategy comprises the use of standardised interviews and questionnaires that gather human data, and capturing their behaviours, preferences and thoughts in a methodical system. This study made use of questionnaires to achieve this aim. This survey's research approach and strategy, through its use of questionnaires, were considered appropriate, since it added the capability to gather information about a large-sized target population, which would have been very difficult to observe directly. Additionally, the approach helped the philosophical position in use for this study, in which the investigator could bring out the research objectively, with no physical or

direct exposure to the participants. Furthermore, its use was economical in terms of cost, time and effort when conducting the research.

Disadvantages can also be experienced when carrying out survey research. Such disadvantages can include bias at the time of the questionnaire design, leading questions, or the omission of important questions, which can then cause incorrect readings taken from the data. Two biases, which have been acknowledged as likely bias in this research, were sampling bias and non-response bias. The two biases are presented and accounted for in additional sections found in this chapter, and steps were taken to address them, and these are fully discussed.

5.4.1 Case study approach in information system research

Case studies are commonly applied to management research (Saunders et al., 2009; Yin, 2011). Yin (2006) defined a case study technique as a broad investigation of a single distinct phenomenon. Yin (2009) stated that case studies signify a pragmatic examination, which explore a current phenomenon that reflects its own reality, particularly if limitations are not clear between context and phenomenon. Therefore, researchers use case studies in a phenomenon context, which they study and believe as having an effect or influence on the phenomenon. Babin and Zikmund (2015) specify that a case study investigation is simply an exploratory method, whereby a condition comparable to the investigator's problem is examined.

Case study research can be interpretive (trying to understand phenomena) (Saunders et al., 2009) or positivist (trying to test theory) (Yin, 2011), similar to what had been identified in the preceding segment as a research strategy. Case studies can assist in significant ways to provide the researcher with knowledge about an institution, group, individual, social, and interrelated phenomenon (Yin, 2015). Yin (2011) highlights that case study research is increasingly being recognised in business research as a scientific tool. A case study's flexibility allows for various styles of study, which are useful when it comes to researching institutions in the public and private sectors, comprising colleges, universities, workplaces, and institutions to suggest accounts of the process as they truly operate (Saunders et al., 2009). They permit the investigator to gather information and data on the difficulty of processes (Punch, 2009).

5.4.1.1 The general case study

Crowe, Cresswell, Robertson, Huby, Avery, and Sheikh (2011) state that one could conduct a case study by taking a positivist or an interpretive or positivist stance; it might be an inductive or a deductive approach; it may use quantitative and qualitative methods, and can examine one or numerous cases. Case study research might be a positivist, highly structured, deductive investigation of numerous cases; it might be an interpretive, unstructured, inductive examination of a single case. The remaining options fit between these two dissipations, allowing many combinations to be possible (Overmars and Verburg, 2007).

The purpose of a case study research approach is usually to achieve an "in-depth" understanding of the targeted phenomenon in a "real-life" set up. In a knowledge management system, the phenomenon is the part of an information system, driven by factors influencing implementation (Yin, 2011). A South African parastatal was used as an example. The real-life setting in this context referred to the cultural and political challenges in the implementation of such a system in a parastatal organisation.

According to Gerring (2006), there are six reasons for implementing case studies. First, case studies are valued in the sense that they act as introductions to the chief investigations, and they produce rich data, which can result in themes for further demanding investigations. Second, case studies enable the researcher to analyse intensively and probe deeply the phenomena under investigation, which comprise all undertakings of the unit being studied, and generalisations of a broader population would be probable. Third, case studies might produce subjective suggestions, which sometimes illustrate the overall findings. Fourth, case studies might function as a means to contest generalisations. Fifth, a case study method is favoured when related patterns are difficult to manipulate. Last, a case study could be the best option conceivable in describing a historical event that is unique (Gering, 2006).

According to Rahi (2017), case study research can be conducted using an interpretive or positivist position, and using an inductive approach or deductive approach, and it can examine a single case or numerous cases. Case study research can be highly structured, using quantitative or quantitative approaches; positivist, deductive investigation of multiple cases; it can also be applied on an interpretive, unstructured, inductive investigation of the unique case; and it can be any combination of these.

Some scholars advocated that case studies can be used in research areas that are still new and have not yet had enough information to start with, and chiefly, where dynamics and analysis of the context of a condition are significant (Darke, Shanks, and Broadbent, 1998). Scholars tend to argue that the case study research technique is not useful if the studied phenomena are well-known and have previously been researched by others. This also applies when the area is well-developed, where understandings of how and why the particular phenomenon occurs are not of interest, and where understandings of the contexts of action, and the experiences of individuals in a single setting are not relevant.

However, this view of case study research does not take into account the various and different ways case study research can be conducted. The compelling point in case study research is not to find a location, but rather to find meaning. However, such a view refutes the idea that while a certain research phenomenon or object might be greatly understood from within a specific theoretical and ontological perspective, possessing this knowledge must not refute the importance of alternate perspectives (Darke, Shanks, and Broadbent, 1998).

The ideal characteristic of case studies is that their focus is placed in the direction of a holistic understanding of a collection of interconnected activities brought together by the performers in a social situation (Feagin, Orum, and Sjoberg, 1991). Yin (2011), in a positivist approach to case studies, recognises five components of design that are vital regarding case studies. The first one is a study's research question, which mostly starts with "how", "which" or "why". The researcher's first task is their definition. The second component is propositioned (if any), which is sometimes derived from the "how" and "why" questions that help to guide the study toward the realisation of the stated goals.

Yin’s (2011) third component is the unit(s) of analysis, which presents the case. The case might be groups, a department of an organisation, or even countries, but it is the primary unit of analysis. In the case study, the unit of analysis is an important factor. It is normally not a system of a group of individuals or an individual, but rather of action. Yin (2011) argues that although the fourth and fifth components are, respectively, the logic relating the data to the propositions and the principles for interpreting the outcomes or findings, they are developed features in case studies. Therefore, selecting cases has to be done so as to maximise things that have to be learned in the existing time present for the study (Stake, 2013).

Usually, case studies seem selective, focusing on a single or two matters, which are essential in understanding the system that is being scrutinised. While Yin (2011) approaches this from the positivist school of thought, some of his views, such as the ones applied in this case study research, cannot be ignored. Stake (2013) indicates that a case study could either be a multiple or single case study design, whereby multiple case study designs follow a replication instead of sampling logic.

Researchers use single case designs when no other cases are available for replication; which was the case in the present research study. Some criticisms against case studies usually target single case studies. Such criticisms focus on statistical matters rather than analytical generalisation, which is the centre of case studies. Yin (2011, 2015) and Stake (2013) state that generalisation of outcomes, from either multiple or single designs, is made to the theory and not to populations. Yin's view of the generalisation of results made to theory is what was applied in the present research study.

Crowe, Cresswell, Robertson, Huby, Avery, and Sheikh (2011) point out that theory is equally a way of seeing and not seeing. A certain theoretical viewpoint can blind or misdirect researchers to other viewpoints at its moment of presentation. The best criticism of the theory is that one frequently takes action, while lacking the awareness use of theory. In support of Crowe, Cresswell, Robertson, Huby, Avery, and Sheikh's views, Walsham (2006:6) stated that individuals are conditioned throughout their lives with theories, and as early as from childhood.

Yin (2011) is of the opinion that single cases could be used to challenge or confirm a theory or represent an extreme or unique case. Single case studies are also ideal for revelatory cases, whereby an observer might gain access to a phenomenon, which had been inaccessible before. Yin (2011) indicates that single-case designs such as the one used in this research dissertation, require a careful investigation approach to maximise the investigator's access to evidence and avoid misrepresentation of data.

Case studies might be embedded or holistic; the later occurs when the same case study contains only a single unit of analysis. The case study method is very valuable in the circumstances where contextual situations of the events being studied are critical, and where the investigator lacks control over events as they happen (Yin, 2011).

As a research strategy, a case study ought to include specific techniques for collecting and analysing data, guided by clearly stated theoretical assumptions. In the case of a single case, such as in this research study, data had to be collected from different sources in the single unit, so that its integrity was ensured. In the next section, the case study approach in IS research is discussed.

5.4.1.2 Case study approach in IS research

There were suggestions that as information system research topics usually include the study of institutional systems, a case study method is frequently appropriate. Walsham (1995) revealed that the case study approach was the most popular and common research strategy from a universe of 997 journal papers surveyed in the years from 1970 to 1995.

This approach was contested by the social determinist campaigners in earlier years, who held the view that somewhat stable social classes might be used when explaining technical change (Law and Callon, 1988). Law and Callon (1988) argued that by concentrating on examining social relations, technology could be relegated to context.

Brey (1997) proposed an approach that uses a particular form of social constructivism, whereby the investigator has no need to assess claims made by various groups regarding any 'real' properties of the technology under study. However, Brey (1997) cautioned that if this approach were to be applied, then the researcher could not invoke such properties to describe the technological change. In its place, change then has to be described by analysis of the various groups participating in it after a succession of negotiations and controversies.

IS case study research frequently adopted a positivist perspective (Benbasat, Goldstein, and Mead, 1987; Lee, 1989; Yin, 2009); however, there was an increasing trend toward a positive stance (Walsham, 1995). Benbasat et al. (1987) pointed out that the case study research approach was mainly compatible with IS research, since the purpose of the IS discipline was to study IS in institutions.

Criticism of case study research was directed specifically at its lack of reliability and validity, but most of the criticism focused on the extrapolation from an individual case study to social processes in general. Walsham (1995), very importantly, argued that extrapolation validity did not depend on representativeness or typicality of the case, but upon the intensity of theoretical cognitive. Some of the chief difficulties of case study research recognised by

Walker (1974) were the extent to which the researcher was involved with the conditions being studied, in addition to data confidentiality, matters of obscurity on publication, the possibility of the political use of data, and the need to simplify and clarify what are data and what is the investigator's understanding of that data.

According to Rowley (2002), the validity of case studies, when correctly understood, depended on how they were used and the logic of their analysis. Altheide and Johnson (1994) argued that validity depended on the readers of the investigation, and on research objectives, and might not be similar for different audiences. The readers will realise whether the case study's discoveries were satisfactory and appropriate, and whether its topic had substantial meaning for their context.

Wainwright (1997) argued that it is in the nature of positive research to work on pre-conceived hypotheses, since positive research is not set out for testing a pre-conceived hypothesis, but that it develops or advances an on-going synthesis of observation and analysis of educational literature. Wainwright (1997) indicated that when negotiated intervention arranges the structure of the research guidelines, the data evaluation and analysis design are unavoidably developing instead of being pre-set.

Given the philosophical assumptions of this research and the nature of the research questions to understand the non-technical factors to align diverse interests due to knowledge management system implementation in parastatals, it was assumed for this topic that the use of the case study method was appropriate for this study.

The case study method was chosen because of the advantage of gaining an understanding of the phenomena via the meanings that people ascribe to them by studying non-technical factors for the application of knowledge management system to organisation X.

The following section addresses the suitability for this research of a single-case study method that was selected.

5.4.1.3 Suitability of the single-case study approach to the current study

The researcher posited that due to the study's aim and objectives, a mixed-research method, a combination of quantitative and qualitative approach, was appropriate. The study sought to uncover the objective social and physical reality of influence on the implementation of KM systems, by recognising and operationalising exact measures that will foresee the proportions

of reality sustaining the research interest at hand (Orlikowski and Baroudi, 1991). The single-case study approach was suitable for the present research, because it could ensure homogeneity of the study population. Therefore, the demography, geography, ethnicity, and socioeconomic status of the participants would not confound the findings of the study. The ontological assumption was that the reality of such reform driven by factors (conceptual framework) as the embodiment of the aligned interests of players or actors was a social creation via human actors (Walsham, 1995), and that a conclusion given by human actors, and demonstrated behaviour by human actors being observed, justified the single case study approach (Myers, 1997; Lee, 1991).

5.5 Purpose of the Research

Neuman (2013) clarifies that the purpose of research is classified into three groups, regarding what the investigator is aiming to attain: Discovering a new phenomenon or topic; describing a social occurrence; or stating the reasons why certain phenomena occur. Hence, research can either be descriptive, explanatory or exploratory.

The research adopted was exploratory, since it explored a new or fresh phenomenon. Saunders et al. (2009) proposed that exploratory research offers a path of seeking out what might be happening, to measure a new phenomenon and obtain an understanding of a new phenomenon.

The research focused on exploring relations between organisational politics, organisational culture and people, and how KMS is affected by them, as well as ways to recognise appropriate combinations from the three variables that provide good performance. The investigator believed that exploratory research would be the most suitable in gaining a new understanding of a phenomenon.

5.6 Research Design

In order to explore the context of research, an appropriate research design was needed. Research design is defined as the overall on-going strategy, including data collection and analysis, which a researcher deploys throughout the study to effectively address the research problem (McDaniel and Gates, 2018; Robson, 2002). A research design is viewed as a tentative guide of action or inactions that enable the researcher to learn in response to

observed changes in the research environment (McDaniel and Gates, 2018). Thus, the research design for this dissertation was a single case study, which was a dynamic system of inquiry that co-evolved during the research.
It is significant to differentiate among the two frequently used terms, that is to say, "research design" and "research methodology", and explain the difference between them.

Research design can be defined as a blueprint that permits the investigator to produce solutions to existing problems and performances as a regulation in several phases of a study (Yin, 2011, 2017). Furthermore, research design stands as a curriculum, which directs an investigator when analysing, collecting, and interpreting research observations (Gill and Johnson, 2010; Hallebone and Priest, 2008). It focuses mostly on four problems when trying to achieve a successful study: Which questions should be studied; which data are to be seen as relevant; which data are to be gathered; and how those data are going to be analysed (Yin, 2011). Therefore, research design could be said to cover tactical choices regarding the selection methods of data collection, and more strategic resolutions concerning scaling and measurement procedures, data analysis, scales and questionnaires (Hallebone and Priest, 2008).

On the other hand, research methodology is seen as a collection of rules and techniques that direct research and also guide it against what it claims can be measured (Hallebone and Priest, 2008). Hallebone and Priest (2008) proposed that a research methodology arrangement must contain data collection, sampling design, data analysis, and constraints or limitations, which the current investigation met.

Selecting an appropriate research methodology depends on a particular standard; for example, as the study's aim, the kind of material desired, participants' character, independent variable manipulation, the researcher's degree of control over the case under research, and limitations of money and time (Saunders et al., 2009). The research design offers a theoretical outline that can be used for the study.

Research methodology also looks at tools that are used in the research to achieve sound research that attains all aims. It offers an outline that directs the processes of data analysis and data collection. Given these arguments, research design can be defined as being more

holistic in nature and comprising research methodology, because it is a strategic approach (Saunders et al., 2009).

Although the present research was based on a single case study design, a mixed methodology approach was used to help with the interpretation of the data. A mixed methodology approach is one whereby qualitative and quantitative data are used together to address a research question. In such approaches, often, the qualitative data need to be integrated with quantitative data for deducing and understanding the results. The quantitative data in this study included the subjective responses of the participants who were obtained through a survey. The responses were obtained based on closed-ended questions, which were rated on a 5-point Likert scale. Obtaining the responses on a 5-point Likert scale helped to analyse the subjective data in quantitative (objective) terms. The reason for framing closed-ended questions was to ensure that the researcher and participants remained focused on the variables that would help to answer the research questions that were considered in the study. Based on the responses to the closed-ended questions, open-ended interviews were conducted, which formed the basis of qualitative data. Such approaches were necessary to understand the cause-and-effect relationships between the independent variables with each other as well as with the dependent variable that was considered in this case study. The focus group interview also helped to identify new themes that were incorporated in the cross-sectional survey questionnaire.

A single case study is often considered as the lowest level of evidence in the field of evidence-based literature. Hence, the present study adopted a methodology triad, whereby the primary data (that were obtained from the semi-structured questionnaire) were compared with secondary data (that included evidence-based literature pertaining to the people, culture, and politics-related attributes and their influence on KMS in parastatal organisations). The primary data were compared with secondary data to draw an interpretive analysis. The methodology triad approach helped to enhance the reliability and reproducibility of the study, because the secondary data were used either to challenge or support the primary data. The methodology triad that was considered in this analysis is depicted in Figure 5.

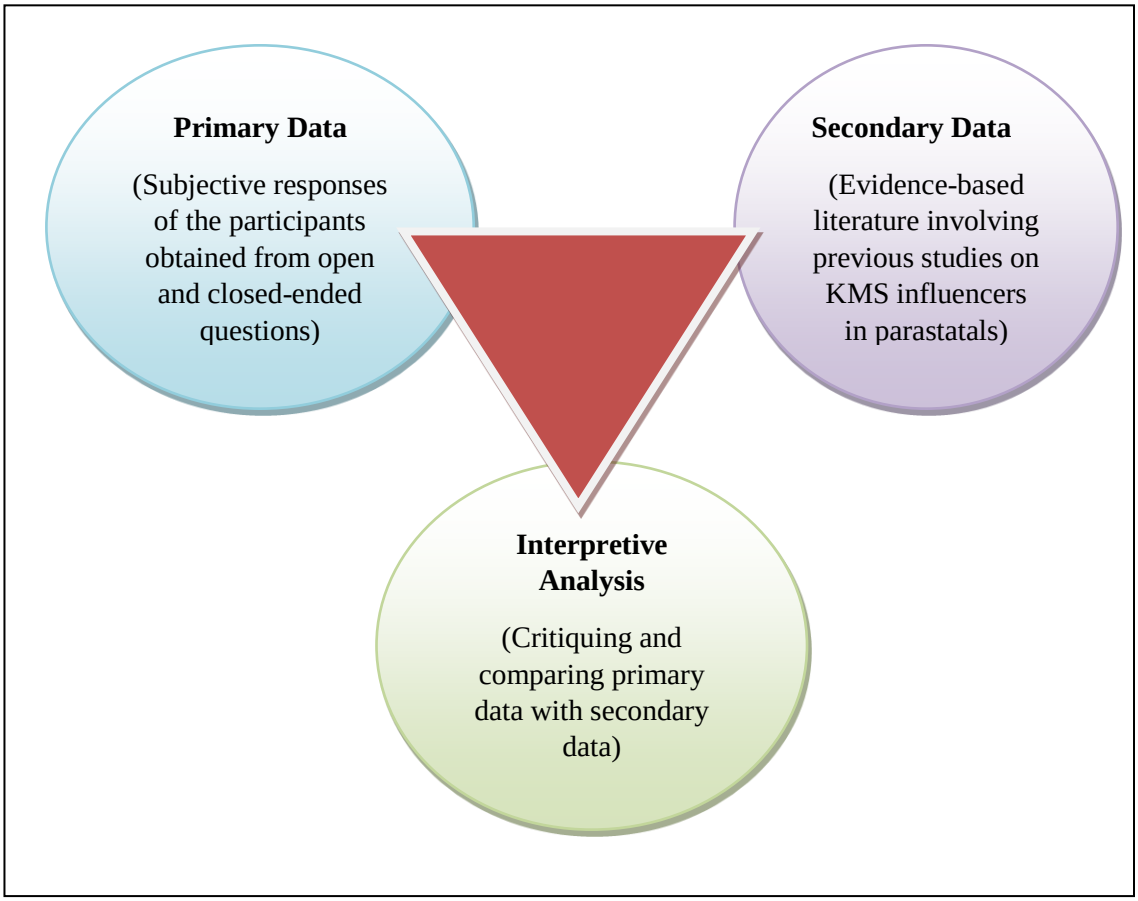


Figure 5: Methodology Triad

5.6.1 Data collection

Gathering of the data was done following the construction of two hypotheses, the research instrument development, and after receiving approval to conduct the research from the ethics committee of the researcher's faculty. An important aspect of quantitative studies was the data collection phase, such as selecting factors and ways in which the researcher communicated with participants, analysis, budget constraints, sampling, and timeframes. The techniques adopted in this research will be discussed next. The closed-ended questionnaires that were administered to the participants are presented in Table 5.1. The negative attributes of people, organisational politics, and organisational culture were reverse-coded to align the referred constructs as the positive mediators for KMS implementation. The tagging of the positive and negative attributes to the people, politics, and culture-related factors were based on evidence-based literature. The respective attributes were tagged to be positive and negative for KMS implementation, based on different organisational structures, and they

were not restricted to parastatal organisations. The literature had suggested that some of the negative attributes of non-technical factors could turn out to positively influence KMS implementation. However, no study challenged or supported such notions, based on studies conducted on South African parastatal organisations.

For the qualitative analysis on the focus group interview, the researcher utilised the N-Vivo software for identifying the themes from the responses gathered in the interviews. Thematic analysis is a suitable method for the analysis of qualitative data to assess the set of text that comprises the interview transcripts. The focus group interview included individuals (employees and supervisors) with different designations. All focus group participants were posed the same question: "What are the challenges of implementing effective KMS within your organisation?"

a. Data collection method

Numerous approaches are available for a researcher when collecting data using a quantitative approach. The use of a survey instrument is common in the quantitative research approach (Onwuegbuzie et al., 2012), and it is frequently applied in a paper-based or online version. When a researcher plans to examine a phenomenon that needs clarity, the use of surveys is helpful. Data are normally gathered using questionnaires that have closed-ended questions, and the present study employed such questionnaire.

b. Sampling

Sampling can be defined as a statistical process of selecting a part of a targeted population with the goal to inspect and make statistical implications about the whole population (Bhattacherjee, 2012:65). It can be seen as a scrupulous trait of an investigator to embrace everything subtle and relevant to the study, and apply it to the sampling process (Darke, Shanks, and Broadbent, 1998; Babbie, 1990). Providing information on the sampling procedure allows an audience to conclude the validity, rigour, and the extent of the sample's representation according to the study's results. Sampling offered the researcher a tactical lens, in which he was able to choose or select participants for the research of a phenomenon, and subsequently gather their replies and make a generalisation of the whole targeted population under sampling (Pinsonneault and Kraemer, 1993).

This study adopted a stratified sampling method. The sampling processes employed in this study are discussed next.

c. Sample population

A sample population can be seen as all the items or individuals holding features that an investigator pursues for examination (Bhattacherjee, 2012:65). The knowledge and ability to identify a unit of analysis in research helps the investigator classify an exact unit aimed for investigation (Terre Blanche et al., 2008; Yin, 2011). Hence, it can be asserted that the unit of analysis is recognised by the length at which gathered data capture features of the selected object (for example, individuals, groups or organisations) (Zikmund, 2000; Hossain, 2011).

The population of the present study referred to the number of approximately 17,000 employees of the parastatal organisation, organisation X, working in the different departments and divisions, subsidiaries and business units. These are managers, employees, middle managers, and executives.

The present study focused mostly on determining non-technical factors influencing the KMS implementation in organisation X. Thus, the unit of analysis was at an organisational, group and individual level, since it aimed to examine the degree at which cultural and political forces may be used in a parastatal organisation to derive at an effective KM system implementation and knowledge sharing and transfer.

d. Sampling frame

A sampling frame is a subsection of participants of a targeted population, where a sample is obtained (Wright, 2005). Furthermore, it is a reachable fragment of the targeted population, where a sample is taken (Bhattacherjee, 2012).

e. Sample size

When the researcher was choosing an appropriate sample size to be used for this study, the investigator carefully considered that generalities of the targeted population be based on collected data and the use of a probability sample dependent on statistical or numerical probability (Saunders et al., 2009). A bigger sample size reduces the prospect of error when the generalisation of the population is taking shape (Saunders et al., 2009). Investigators frequently target a 95% confidence level to make a considerable statistical inference,

suggesting that a smallest possible of 95 of samples would conform to the features of the population was a sample chosen 100 times (Saunders et al., 2009).

To achieve a small margin of error in the present work and a positive confidence level, the researcher followed procedures mentioned by Saunders et al. (2009:219), and based on the fact that organisation X had an approximate number of 17,000 employees and millions of passengers, the researcher managed to achieve a total of 380 responses for a 5% margin of error.

f. Research instrument

The questionnaire can be defined as "a general term to include all techniques of data collection, in which each participant is asked to respond to the same set of questions in a predetermined order" (Vaus, 2002:94). Questionnaires are used to collect data and to give participants more time to reflect on their answers, and when the questions are more sensitive or confidential (Collies and Hussey, 2003:281). Questionnaires offer an effective way of gathering data from a well-sized sample preceding to quantitative analysis (Saunders et al., 2009:281). Using questionnaires is a time-efficient way of conducting a study. This was also partially a reason why this study had to use questionnaires when gathering information or data, so as to garner as much information as possible within a very limited period of time.

According to McDaniel and Gates (2002), a questionnaire survey is a collection of questions intended to produce evidence essential to achieve the research objectives of the study. Questionnaires are a tool that aims at getting answers and responses from participants on certain matters or issues (Alsadhan, 2007). The benefits of using questionnaires are that it is cheaper to use them as a research instrument of collecting primary data; it allows the easy collection of data from a very large sample; analysis of responses is fast and easy, since closed questions are used; there is no pressure for an instant reply from the participants; participants remain unidentified; there is no bias from the interviewer; and standardised questions might offer expressive data aimed at testing hypothesis (Gillham, 2000; Saunders et al., 2009).

Despite the advantages, disadvantages of questionnaires are present such as, the potential poor response rate from participants; the lack of control over who will complete the questionnaire; the absence of some chance to check the answers' accuracy; ambiguous answers cannot be clarified; participants might have poor reading skills and lack the

understanding of the questions posed; there may be missing data; simplicity must be present when constructing the questions; and usually, there is poor development; hence, the investigator will not gather data at great depth (Gillham, 2000; Neuman, 2004).

The adopted research strategy and research philosophy influenced the choice of the research instrument adopted in this study. The research instrument adopted for this study was a questionnaire, and it was used for data collection for this research. The study's questionnaire was based on a number of past surveys conducted by other scholars whose studies relate to this research. The scholars' work comprised the work done by Denison and Mishra (1995); Butcher and Clarke (1999); Arora (2011); Choy Chong, Salleh, Noh, and Syed (2011); Bahadur and Tanner (2014); Clayton and Myers (2015).

The study's questionnaire included both open-ended and closed questions, which created the items measured in the theoretical framework. As explained earlier in this work, a number of items were examined on a 5-point Likert scale, with 1 being the lesser value and 5 signifying the uppermost value. The study questionnaire had five sections, and a short description of what all the sections cover follows:

A. Section A focused on demographics; for example, participants' gender, age, and level of education;
B. Section B measured the organisational functions such as organisational size, the business unit, the department within the organisation, the position of the participants, and the number of years the employee had been working in the organisation;
C. Section C measured availability of the system in the organisation in two parts. The first part involved getting information of the participants, using a yes or no answer. The second part involved indication of the system such as manual, computerised, Excel spreadsheet, intranet SAP, and any other;
D. Section D:
    a) Measurement of the human (people) construct using 9 items, and a 1-5 Likert scale, where 1 = strongly disagree and 5 = strongly agree;
    b) Measurement of the cultural construct using 13 items and a 1-5 Likert scale, where 1 = strongly disagree and 5 = strongly agree;
    c) Measurement of the politics construct using 7 items and a 1-5 Likert scale, where 1 = strongly disagree and 5 = strongly agree;

d) This measured the EKMS construct using 4 items and a 1-5 Likert scale, where 1 = strongly disagree and 5 = strongly agree;

e) The survey questionnaire that was considered for the cross-sectional survey is depicted in Table 4.

E. Section E measured non-technical aspects and improvement in the organisation with an open-ended question.

Table 4: Cross-sectional survey questions

People Constructs
DA1 - I feel that I have to do things on the job that are against my better judgement in this organisation.
DA2 - Feeling that you may not be liked and accepted by the people you work with is very stressful.
DA3 - My job gets to me more than it should.
DA4 - I have too much work and too little time to do it in the time available.
DA5 - Individualism should be avoided within the organisation for achieving outcomes.
DA6 - I would not get the proper opportunity if I left my current organisation.
DA7 - I am highly committed to serving my organisation.
DA8 - I have enough information to make good decisions.
DA9 - People in this organisation are the first priorities.
Culture Constructs
DB1 -When it comes to work-related activities, everybody puts in their full energy and creativity.
DB2 - Relationships and communications are not good with executives.
DB3 - Senior management develops strategies in conflict with the organisational culture.
DB4 - Senior management deals appropriately with cultural issues.
DB5 -The organisation's employees are valued for their individual expertise.
DB6 - I feel "part of the family" at my organisation.
DB7 - I feel that I have too little authority to carry out the responsibilities assigned to me.
DB8 - I do not know what opportunities for advancement or promotion exist for me in this organisation.
DB9 - I am involved in the decisions in this organisation.
DB10 - The company is open to challenges, suggestions, and change.

DB11 - Employees can make suggestions about others' tasks.
DB12 -The organisation's employees understand the importance of knowledge.
DB13 - The organisation's employees can communicate not only with members of their own department, but also with members of other departments.

Politics Constructs

DC1 - Relationships at work are matured.
DC2 - Since I have worked in this department, I have never seen either an executive or a manager coaching or training staff.
DC3 - There has always been an influential group in this department that no one ever crosses.
DC4 - When it comes to organisational strategy and promotion decisions, there is a clear direction aligned to the existing company policies.
DC5 - The pay and promotion policies this organisation have are not applied politically-based.
DC6 - Employees are encouraged to speak out honestly, even when they are critical of well-established ideas in the organisation.
DC7 - Who you know and how much you are liked carries a lot of weight in this department.

KMS Constructs

CE1 - The organisation's employees use technology (ICT) to search for new knowledge.
CE2 - The organisation's employees use technology (ICT) to retrieve knowledge about its products and processes.
CE3 - The organisation's employees use technology (ICT) to access knowledge about markets and the competition.
CE4 - The organisation's employees use technology (ICT) to cooperate and communicate with fellow employees.

5.6.2 Reliability and validity of the research instrument

Reliability focuses on determining if measures for constructs are consistent or dependable (Neuman, 1994; Bhattacherjee, 2012). Creswell and Clark (2017) state that when a researcher has modified a research instrument or joined several research instruments to carry out a study, original reliability and validity might not be embraced on the new instrument; hence,

there was a need for regenerating reliability and validity during the analysis of data. Bhattacherjee (2012) suggested that there are four forms of reliability tests: Split-half reliability; test-retest reliability; internal consistency reliability; and inter-rater reliability.

An internal consistency reliability test was conducted for the present study. The investigator's familiarity with and knowledge of the test made the researcher select it above others. It must be noted that this was an internal consistency reliability test for consistency by measuring different items of a construct. Cronbach's alpha was used for measurements. The calculations were done using the Statistical Package for Social Sciences (SPSS) software. The investigator used SPSS software to calculate Cronbach's alpha, and Chapter 6 shows the results.

Additionally, in reaction to Neuman's (1994) proposition, the investigator made sure that reliability was improved through enforcing three principles: Using multiple indicator tests; conceptualising constructs; and using a precise level of measurement. The investigator strictly followed two principles to guarantee reliability when using the research instrument, and also conceptualised the constructs. Though the constructs that were measured were unique, the researcher made sure that vibrant definitions were given in the literature review for each construct. Neuman (1994) suggested clear theoretical definitions must be present in each study, and that a single measure must indicate one concept.

Validity refers to the level of suitability of a measure when it comes to representing the construct it was designed to measure. According to Bhattacherjee (2012), validity tests are concerned with or focused on measurement of procedures or propositions/hypothesis testing procedures.

In this study, content validity, construct validity, and face validity were accounted for in terms of the validity of measurement procedures. Face validity checks if a fit exists between a measure and its primary construct. Content validity checks if a solid definition of a construct is fully embodied in a measure. Construct validity establishes if measurement questions can bring generalisation to the constructs; therefore, it truly seeks to see if measurement questions measure the existence of the constructs they are intended to measure (Bhattacherjee, 2012).

The researcher had to seek advice from the supervisor of the research study and also other department experts to attain the validity tests cited above. Hence, this trails the proposition by Bhattacherjee (2012) that validity tests lack direct measurement, but this can be solved through consulting experts in the field.

The investigator was attentive to and cautious of potential threats to validity that could arise; hence, statistical validity, internal validity, and external validity were tested and accounted for (Creswell, 2009). Internal validity checks the suitability and ability to draw implications from the directed population (Bhattacherjee, 2012). The research sampling technique was chosen to make sure the features of the participants were fairly distributed. The investigator also ensured that an appropriately-sized number of participants who are relevant for this research, and targeted regions were chosen.

External validity checks aim to ensure that the sample data do not have incorrect inferences (Bhattacherjee, 2012). Therefore, the researcher ensured that proper representation was met in the sample, due to the demographics segment of the research instrument, which covered a number of key classifications, and was based on the sample frame. Finally, statistical conclusion validity was cautiously carried out by the researcher, with the assistance of the supervisor.

5.6.3 Secondary data collection

The secondary data for the present study was obtained from evidence-based literature on knowledge system implementation in parastatal organisations. The respective evidence was searched through a keyword search strategy. The keywords and Boolean connectors that were considered in this study include employees AND organisational culture AND organisational politics OR Leadership OR policies AND knowledge management OR knowledge sharing. The keywords and Boolean connectors were used to access various search engines that provided published articles and industry white papers. Only evidence that was published during the past 15 years and in English was considered as the sources of secondary data. The period of selection was to explore the transitions that took place in the field of KMS within parastatal organisations during the past two decades, while the language of publication was limited to language proficiency of the researcher. The articles were finally selected, based on the inclusion and exclusion criteria.

5.6.4 Data analysis techniques

Data analysis can be described as the process whereby a researcher gathers up raw data, which are placed in the data matrix, to generate information that is able to achieve the research objectives. Quantitative measures and techniques helped to analyse the gathered data found on questionnaires due to the nature of the quantitative research instrument.

The data collected from closed questions were cleaned by means of rooting out anomalies on the data. After data cleaning, all the data were coded in the form of numbers or into numerical form, based on scaling that had been mentioned above (for example, 1-5). After the data were organised into numeral arrangements, they were placed into SPSS for additional analysis. All the work mentioned above, such as coding, cleaning and arrangement of the data, used Microsoft Excel. All arranged data were then put into SPSS software for analysis. The reason why SPSS software was selected was that the investigator had used the software before and thus, was familiar with it. Another reason for selecting SPSS was that it is widely used, easy to assess and easy to use. Inferential statistics and descriptive statistics are the two major ways according to which statistical techniques are grouped in terms of quantitative data analysis (Bhattacherjee, 2012).

In this research and to ensure that the researcher was able to describe the data and the overall properties of the variables found in the data, the researcher adopted descriptive statistics such as frequency distribution (to see the distribution nature). Mean and the standard deviation were used to test the propositions and check inferences.

5.6.5 Quantitative

Both descriptive and inferential statistics were used to interpret the raw data (subjective responses to the closed-ended questions that were obtained on a 5-point Likert scale) that were considered in the study. The descriptive statistics that were used in this study included mean and standard deviation. The inferential statistics that were considered in the analysis included correlation coefficient and regression models. The correlation coefficients were initially conducted for people, culture, politics, and KMS implementation status as a whole. Correlation analysis was also constructed between each construct of people, culture, politics, and KMS to understand which constructs interacted with each other to influence KMS. The major objective of conducting an elaborate correlation analysis with each attribute of people, culture, politics, and KMS implementation was to identify the positive and negative attributes

of KMS among the independent variables. The correlation analysis measures the direction of the relationship between two variables, but it cannot predict the magnitude of one variable from the related variables. Under such circumstances, regression models are constructed with the dependent variable and independent variables. The regression models analyse whether the magnitude and direction of the dependent variable are dependent on the magnitude and direction of the independent variables. The dependent variable in this study was the effective KMS implementation, while the independent variables included the constructs of people, culture, and politics.

The regression model that was explored in this study was as follows:

KMS = B1 + B2* People + B3* Culture +B4*Politics

Where KMS = attributes related to effective implementation of KMS

People = positive and negative attributes of employees related to the effective implementation of KMS.

Culture = positive and negative attributes of organisational culture related to the effective implementation of KMS.

Politics = positive and negative attributes of organisational politics related to the effective implementation of KMS.

B1 = intercept of the regression model

B2 to B4 = individual beta-coefficients of people, culture, and politics.

5.6.6 Qualitative

The researcher examined the data, looking for common themes, ideas, and patterns. Various themes related to politics, culture, and people emerged. Codes in N-Vivo are an umbrella term for themes, sentiments, and relationship nodes. The iterative analysis of the open-ended answers not only helped to understand the cause-and-effect relationship between the dependent and independent variables, but also helped to identify them as well as to fine-tune the closed-ended semi-structured questionnaire. The themes were the nodes that emerged from the respective coded data in the N-Vivo software. N-Vivo is an effective software for identifying complex and latent relationships between two qualitative responses that are not possible to be conducted manually.

Braun and Clarke (2006) proposed guidelines for carrying out thematic analysis that consists of six stages of analysis:

1. The first stage is familiarisation, which refers to the process of immersing oneself in the data and becoming familiar through repeated readings.
2. The second stage, generation of initial codes, is a method of distilling key points and interesting features of the data, and listing these as data points in a constantly growing codebook.
3. The third stage is searching for themes when the researcher reviews the list of initial codes and determines how they work together into broader concepts, which are the themes.
4. In phase four, which Braun and Clarke (2006) referred to as reviewing themes, the researcher reads the supporting excerpts for each theme, and examines them in reference to the themes overall, determining whether any themes should be collapsed into broader categories, or whether some themes are actually representative of more than one sub-theme.
5. Phase five is the stage when the researcher defines and names these finalised themes.
6. Phase six is the production of the report.

5.6.7 Secondary data analysis

The secondary data were analysed, based on the background and the context of conducting the study, the methodology adopted along with the sample size, the statistical tests used for reporting the results or the end-points of the study, and the inference drawn by the authors of the respective articles. The secondary data were analysed not only to draw an interpretive analysis of the primary data, but this also helped to fine-tune the attributes (constructs) of people, politics, culture and KMS that were not included initially for the primary data analysis. However, the qualitative studies that were considered for secondary data analysis relied on the interpretation of the researchers regarding the end-points, if the qualitative data were not depicted or interpreted quantitatively in the respective studies. The secondary data analysis was undertaken, because the present study included only one parastatal organisation and was a case study analysis. Therefore, the reliability and reproducibility of the study were enhanced by integrating and analysing the findings in light of the secondary data analysis.

5.6.8 Motivation for selected statistical packages

In quantitative studies, investigators have numerous needs when it comes to data analysis, and also wide-ranging degrees of statistical training and education. Aware of this, numerous statistical software packages are offered on the market (for example, Minitab, SAS, R, Statistica, SPSS, and so forth). A number of software programs provide for simple statistical analysis, while others hold techniques that are more advanced. Hence, in this study, the researcher had to select a suitable statistical package that was in line with the objectives of the study. With the aim of achieving sound research, the researcher decided on the most appropriate statistical package among those available to produce sound work.

The tools used for this study to handle data analysis were a distinct statistical package, IBM's version 24 of the SPSS statistics software for the exploratory and descriptive segment of data analysis. SPSS is a tool that is advanced and is widely used for analysing a variety of statistical data.

5.6.9 Timeline

The research timeline can be either longitudinal or cross-sectional. A cross-sectional time aspect comprises the gathering of data on a specific period of time, and does not surpass months; while the longitudinal time aspect comprises the gathering of data over a lengthy period of time (frequently years) when studying a phenomenon (Correia et. al., 2003).

This research used a cross-sectional time aspect, since the study aimed at acquiring an understanding of present time and precedent occurrences (Saunders et al., 2009). This was thought to be suitable, since the time available for the research for the study programme was limited, and thus, the survey approach also had little time available (Saunders et al., 2009).

5.7 Ethical Considerations

The researcher was required to maintain the highest ethical and safety standards in conducting the research, particularly as human subjects were involved. It remains the responsibility of the researcher to comply with all relevant regulations in this regard, including those of the institution for which the research is carried out. An ethical approval letter (where applicable) was submitted to the institution in respect data collection and the letter of consent, request for data collection, approval letter and confidentiality agreement were requested by and granted to the researcher by the organisation as per Appendices 2, 3

and 4. The researcher maintained ethical standards at all times. This involved: Permissions for obtaining ethics approval from the appropriate ethics committees; obtaining permission from interviewees (and if appropriate, their managers); treating people with respect (before, during, and after the interview), respecting their time, respecting their position within the organisation, respecting their knowledge; and fulfilling commitments to individuals and organisations as this may involve keeping confidences, keeping transcripts or records or and the technology confidential and secure.

5.8 Summary of the Chapter

The chapter offered an overview of the research methodology and design, which were adopted for this study; it also highlighted philosophical theories of research, which played an important role in deciding the selection of research methods, techniques, paradigms, and approaches implemented in the study. The study embraced a survey strategy, positivist paradigm, exploratory research and the implementation of quantitative approaches during data collection, and used qualitative and quantitative methods during data analysis. The research instrument used both open-ended and closed questions. Collected questionnaires amounted to 400. They were collected from a single parastatal institution in SA, resulting in 380 returned questionnaires that were used for the research. The table below provides a summary of the applied research methodology.

Table 5: Summary of the Research Methodology

Methodology	**Approach**
Ontology	Objectivism
Epistemology	Positivism
Type of research	Mixed-method
Research strategy	Case study
Target population	South African parastatal organisation
Research purpose	Exploratory
Data collection techniques	Questionnaire open- and closed-ended
Data analysis	Focuses on quantitative and qualitative analysis: Statistical tests using qualitative and quantitative software such as N-Vivo and SPSS, respectively
Timeframe	Six months

CHAPTER 6: DATA ANALYSIS AND RESULTS

6.1 Introduction

This chapter provides the research findings and a discussion of the key findings of the research study in accordance with the research question and the aims and objectives of the study. The main purpose of this study was to assess how technical factors such as organisational culture, organisational politics, and people (individuals or groups of employees) interact with each other or independently influence the effective implementation of a KMS in parastatal organisations in SA. Descriptive statistics are presented first, followed by the inferential tests from the data analysis.

6.2 Primary Research Question

Which non-technical aspects/s, such as people, organisational culture, and organisational politics, significantly predict the influence of successful implementation of a KMS in parastatal organisations in South Africa?

6.2.1 Secondary research questions

1. What challenges do organisations face regarding the non-technical aspects such as people, organisational culture, and organisational politics in the absence of an EKMS?
2. How does leadership influence the effective implementation of a KMS?

6.2.2 Study objectives

The objectives of this study were to:

a) Investigate the role of non-technical factors such as people, organisational culture, and organisational politics in implementing an effective KM system in parastatal organisations in SA;
b) Explore best practice that can be deployed by parastatal organisations in SA to implement EKMS;

c) Generate and test a model that indicates how people, organisational culture, and organisational politics could be involved in implementing an effective KMS.

Questionnaires were sent via email to all employees of organisation X who have access to emails. Some questionnaires were printed and delivered by hand. A total of 380 responses were received.

6.2.3. Hypotheses

Hypothesis 1: Attitudes of employees will not influence EKMS implementation in parastatal organisations.
Hypothesis 2: A positive organisational culture will not be positively related to the EKMS.
Hypothesis 3: Organisational politics will not be positively related to EKMS in parastatals.
Hypothesis 4: People, organisational culture, and organisational politics will holistically influence KMS.

6.3 Data Analysis

The researcher collected the data through the use of a questionnaire and analysed them by using SPSS version 22. The questionnaires were coded in an Excel spreadsheet and imported to SPSS for data analysis. Each questionnaire was assigned an ID for ease of data cleaning and to ensure the anonymity of the study's participant. All the sections were assigned identifiers with the instruction of an experienced statistician. The researcher entered all the data for all questionnaires manually.

6.4 Data Cleaning and Screening Procedures

In this study, the researcher removed all inaccurate and incomplete cases from the data set and conducted an analysis of the remaining or corrected data. Human judgement was used to establish valid and invalid data on the coded data. The entered data were compared against the questionnaire, and since the items on the questionnaire were numbered, it was easy to refer back to each one in cases where a mistake in the data entry was identified. Mistyped values were corrected against the identified list of entities.

To assess the presence of outliers, the variables were standardised, and descriptive analyses were conducted. Cases with values greater than the absolute value of 3.29 were eliminated. The following steps were also followed;

a) Duplicate data entries were checked for using the SPSS "Identify duplicate cases";
b) Descriptive statistics were carried out to determine if the data was relevant;
c) Value labels such as typos were adjusted, and the researcher made sure that all recorded variables were of the appropriate type (numerical), and variable measures were coded in the correct level of measurement such as scale, ordinal, and nominal;
d) Data analysis was carried out to determine any missing data or survey fatigue, and to identify if there was any pattern to the missing data. Missing data were coded correctly, and any unanswered sections were also checked. Fortunately, only a few missing data items were identified, and the researcher assigned values according to his own discretion;
e) Descriptive statistics were run again to ensure that the results were still making sense.

6.5 Demographic Information of the Participants

This section presents the biographical and business information of the study's participants, which involves age, gender, highest educational qualification, organisational size, business unit, role in the organisation, and tenure. The importance of knowledge management, people's view of the organisation, organisational culture, organisational politics, and the use of available management systems is also presented. These are all highlighted in section A of the questionnaire.

6.5.1 Gender

Table 6: Distribution of Gender

Gender	Frequency	Percent
Male	241	63.4
Female	139	36.6
Total	380	100.0

Table 6 and Figure 6 illustrate the gender of the study's participants. The table shows that 241 (63%) of the people who participated in the study are male, and the other 139 (37%) are female.

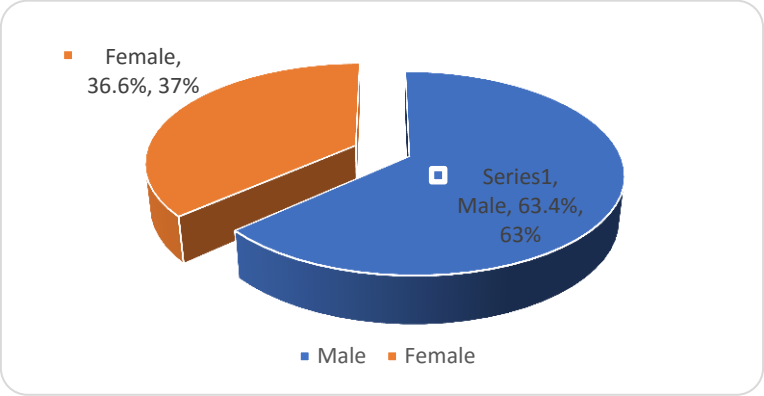


Figure 6: Gender of participants

6.5.2 Age

Table 7: Distribution of Age

Category	Frequency	Percent
≤ 30	67	17.6
31-40	120	31.6
41-50	118	31.1
51-60	66	17.4
> 60	9	2.4
Total	380	100.0

Table 7 and Figure 7 show the age distribution of the study's participants. It shows that 67 (18%) of the study's participants are ≤ 30 years old. Of the participants, 120 (32%) are within

the age range of 31-40; 118 (31%) are between 41-50 years old; 66 (17%) are between 51-60 years of age; and 9 (2%) of the participants are over 60 years of age.

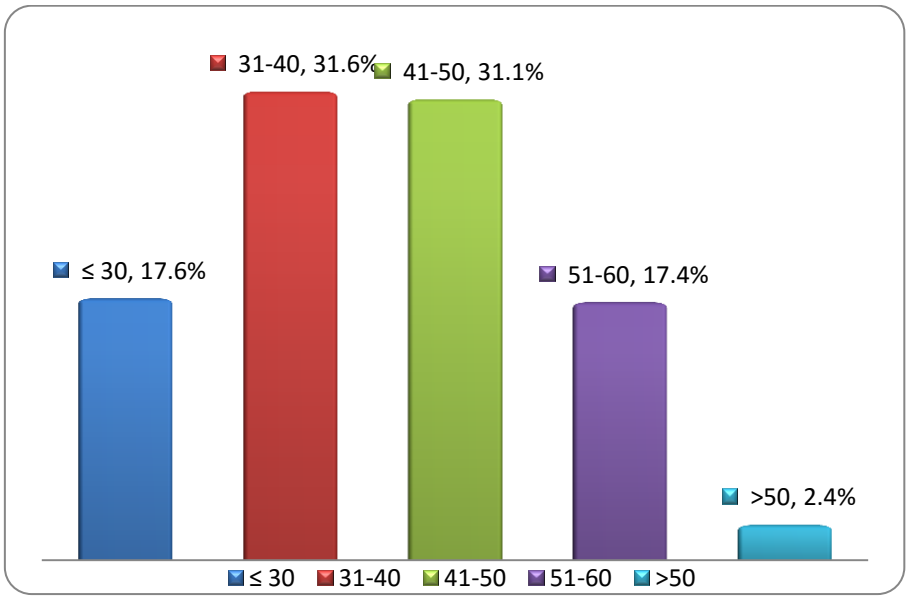


Figure 7: Age of participants

6.5.3 Highest qualifications

Table 8: Distribution of Qualification

Education qualification	Frequency	Percent
Matric	83	21.8
Diploma	93	24.5
Degree	138	36.3
Master	53	13.9
PhD	8	2.1
Others	5	1.3
Total	380	100.0

Table 8 and Figure 8 indicate the educational qualification of the study's participants. It shows that 83 (22%) of the participants have Matric as their highest educational qualification; 93 (25%) have a diploma; 138 (36%) have a degree; 53 (14%) have a Master's degree qualification; 8 (2%) of the participants have a PhD qualification; and 5 (1%) have other unspecified educational qualifications.

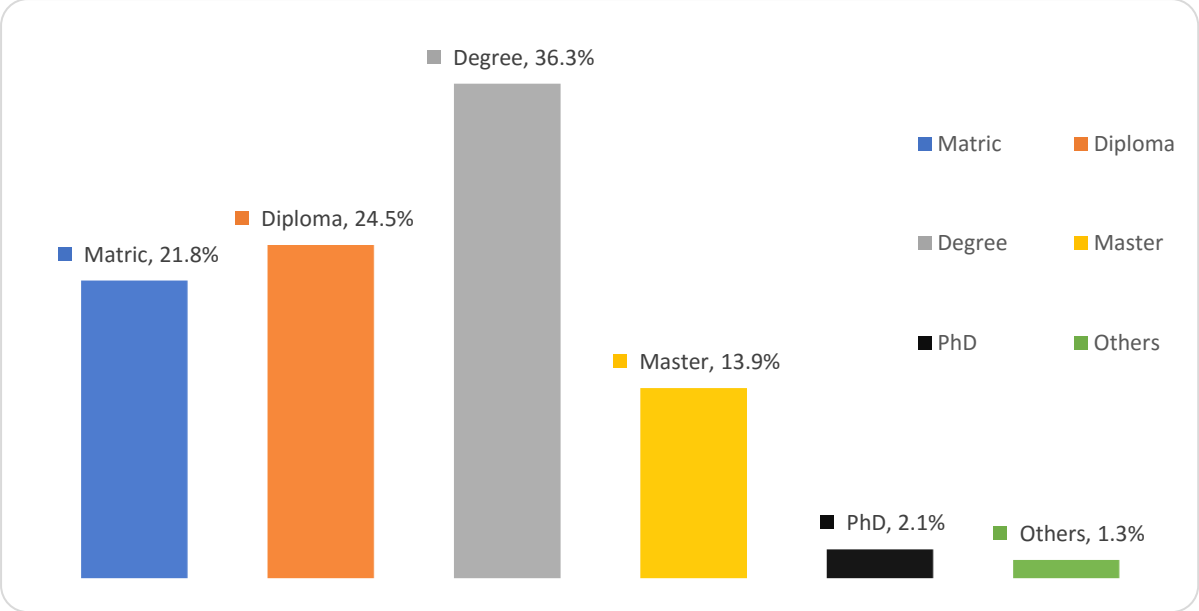


Figure 8: Qualifications of participants

6.5.4 Size of the organisations

Table 9: Distribution for the Organisations' Size

Organisation's size	Frequency	Percent
≤ 1,000	158	41.6
1,000-10,000	122	32.1
10,000-15,000	66	17.4
16,000-20,000	8	2.1
<25,000	26	6.8
Total	380	100.0

Table 9 and Figure 9 indicate the distribution of the organisations' size in the study. It shows that 158 (42) of the organisations have ≤ 1,000 employees; 122 (32%) organisations have between 1,000-10,000 employees; 66 (17%) organisations employ between 10,000-15,000 people; 8 organisations range from 16,000-20,000 employees; and 26 (7%) organisations employ over 20,000, but less than 25,000 people.

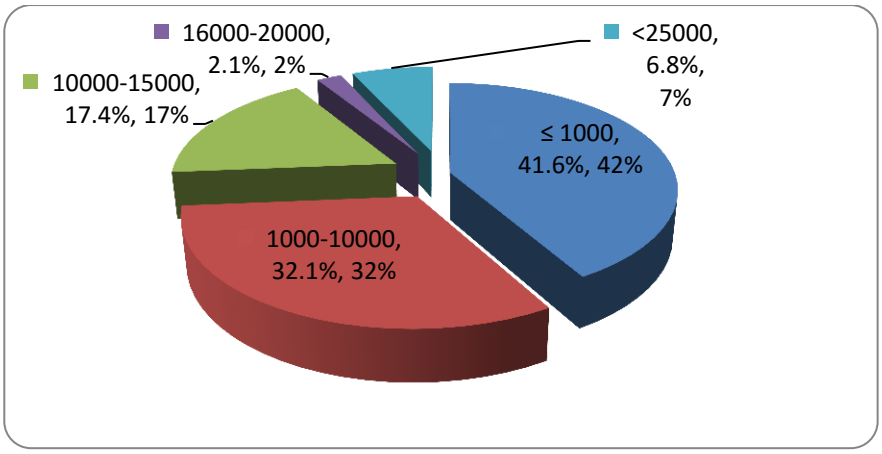


Figure 9: Distribution of the organisation's size

6.5.5 Distribution of business unit

Table 10: Distribution of Business Unit within organisation X

Business Unit	Frequency	Percent
Finance	73	19.2
Marketing	103	27.1
ICT	113	29.7
Rail engineering	81	21.3
Infrastructure	10	2.6
Total	380	100.0

Table 10 and Figure 10 illustrate the distribution of the business units among the participants of the study. It is shown that 73 (19%) of the participants work in the Finance department; 103 (27%) of the participants work in the Marketing unit; 113 (30%) of the participants work in the ICT department; 81 (21%) of the participants work in the Rail Engineering unit; and 10 (3%) of the participants work in the Infrastructure division.

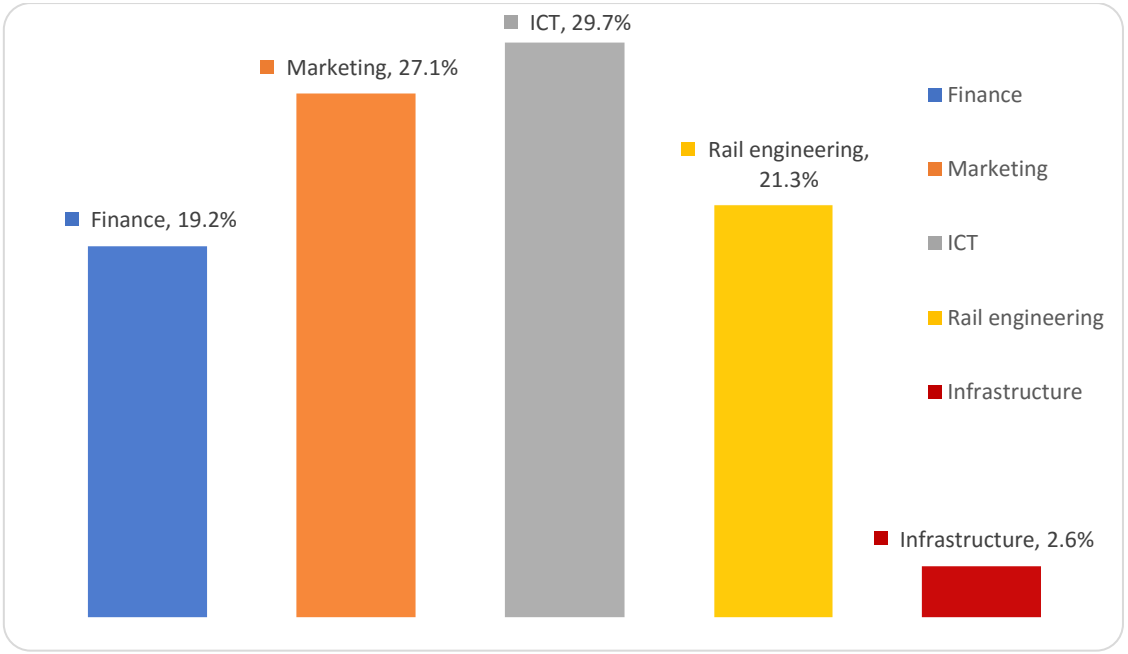


Figure 10: Distribution of business units within organisation X

6.5.6 Distribution of role in the organisation

Table 11: Distribution of Role in Organisation X

Role	Frequency	Percent
Executive	20	5.3
Senior manager	55	14.5
Middle manager	96	25.3
Employee	86	22.6
Other	123	32.4
Total	380	100.0

Table 11 and Figure 11 illustrate the role played by the participants in the organisation. It is indicated that 20 (5%) of the participants exercise an executive role in the organisation; 55 (15%) are senior managers of the organisation; 96 (25%) of the participants are middle managers in the organisation; 86 (23%) of the participants are staff employees in the organisation; while 123 (32%) of the participants hold a different role within the organisation.

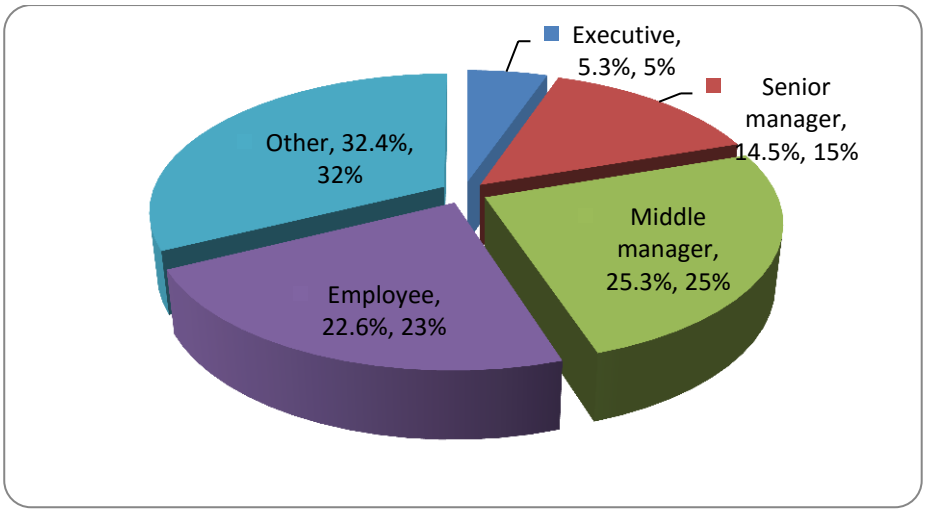


Figure 11: Distribution of role in organisation X

6.5.7 Distribution of tenure

Table 12: Distribution of the Participants' Number of Years in Organisation X

Number of years in the organisation	Frequency	Percent
Less than a year	74	19.5
1-3 years	49	12.9
4-6 years	61	16.1
7-10 years	117	30.8
above 10 years	79	20.8
Total	380	100.0

Table 12 illustrates the distribution of participants in terms of the number of years they have worked in the organisation. It indicates that 74 (20%) of the participants have worked less than a year in the organisation; 49 (13%) participants have been working in the organisation for 1-3 years; 61 (16%) of the participants have been with the organisation for 4-6 years; 117 (31%) of the participants have been there for 7-10 years; and 79 (21%) of the participants have been with the organisation for longer than 10 years.

6.5.8 Importance of implementing a knowledge management system in the organisation

Table 13: Importance of Implementing a Knowledge Management System in the Organisation

	Frequency	Percent
Not important at all	40	10.5
Not very important	45	11.8
Important	101	26.6
Very important	102	26.9
Extremely important	92	24.2
Total	380	100.0

Table 13 illustrates the importance participants attach to the organisation implementing a knowledge management system. The results indicate that 40 (11%) participants believe that the implementation of a KMS is not important at all; 45 (12%) participants indicate that the KMS is not very important; while 101 (27%) participants indicate that the KMS is important; 108 (26.8%) participants indicate that the KMS is very important; and 92 (24%) participants

indicate that the implementation of a KMS is extremely important. This means that only 22% believe that the implementation of a KMS is not important.

6.5.9 Average scores

Composite scores were created for the three independent variables (People, Culture, and Politics) and the dependent variable (effective knowledge management system − EKMS) by averaging the items within each scale. The average was taken in order to determine the central tendency of the items involved within the variable. With reference to the findings of Saidi (2018), the use of taking the average is considered essential when determining the central tendency of the items of a similar group. In the current study, the questionnaire encompassed different variables within which sub-items had been involved.

Based on the fact that a greater number of items were involved in the variables along with the high standard deviation of some items, it made the task of executing the regression analysis more complex and challenging. Thus, the researcher looked for a manner to achieve an equal representation of each item within the variable, forming the basis of the questionnaire.

6.5.10 Cronbach's alpha

Cronbach's alpha coefficients were calculated to assess the internal reliability of the scales. Based on the guidelines put forward by George and Mallery (2016), the Cronbach's alpha coefficients were evaluated as follows, where greater than 0.90 = excellent, greater than 0.80 = good, greater than 0.70 = acceptable, greater than 0.60 = questionable, greater than = 0.50 poor, and less than or equal to 0.50 = unacceptable. Some studies regard the value of 0.60 still as acceptable, although this is debatable (Taber, 2012; Yadegaridehkordi, 2014; Griethuijsen et al., 2014). A Cronbach's alpha of 0.60 is considered acceptable if the study includes subjective data, a smaller number of constructs, and if the sample size is small (Griethuijsen et al., 2014). Subjective responses can always introduce an element of bias, and so is a small sample size. With reference to the findings by Trizano-Hermosilla (2016), the minimum value for Cronbach's alpha must be 0.70. However, the lower value of Cronbach's alpha can also be considered for less than 10 items (Taber, 2012).

The items for 'People' have a Cronbach's alpha coefficient of 0.79, indicating acceptable reliability. The items for 'Organisational Culture' have a Cronbach's alpha coefficient of 0.87, suggesting good reliability. The items related to 'Organisational Politics' exhibit a Cronbach's alpha coefficient of 0.84 that suggests good reliability. The Cronbach's alpha

coefficient for the items relating to the KMS is 0.75, representing an acceptable level of reliability.

Table 14 presents the results of the Cronbach's alpha analysis.

Table 14: Reliability Table for People, Culture, Politics, and KMS

Scale	No. of Items	Cronbach's α
People	9	0.79
Culture	13	0.87
Politics	6	0.84
KMS	4	0.75

6.5.11. Descriptive statistics

The descriptive statistics such as mean, median, mode, skewness and standard deviation were undertaken to summarise the raw data of the cross-sectional survey. The descriptive statistics also helped to identify the positive and negative attributes of people, politics, and culture that are pertinent to the parastatal organisation X in which this case study was undertaken.

Table 15: Descriptive statistics of Cross-sectional survey

	N	Mean	Std. Deviation
DA1	380	3.6395	1.20203
DA2	380	3.3605	1.29502
DA3	380	3.1211	1.17182
DA4	380	3.1026	1.12889
DA5	378	2.9841	1.24025
DA6	380	3.2105	1.40030
DA7	380	2.7079	1.29804
DA8	380	2.7658	1.05039
DA9	380	2.7132	1.21092
DB1	380	2.8421	1.31816
DB2	380	2.9763	1.32241
DB3	380	2.7632	1.29203
DB4	380	2.6947	1.27756
DB5	373	2.8177	1.27592
DB6	380	2.7632	1.27766
DB7	380	2.9711	1.34800
DB8	380	2.9684	1.24729
DB9	380	3.2395	1.25318
DB10	380	2.7868	1.30529
DB11	380	2.6079	1.21183
DB12	380	2.5553	1.24963
DB13	380	2.7026	1.30293
DC1	380	2.7421	1.30427
DC2	380	2.7526	1.31838
DC3	378	2.8413	1.27043
DC4	380	2.8421	1.34589
DC5	380	2.5000	1.36581
DC6	380	2.4526	1.10187
DC7	380	2.4526	1.10187

CE1	380	2.7263	1.22801
CE2	380	2.8553	1.12894
CE3	380	2.9026	1.14329
CE4	380	3.0789	1.25783

The people-related attributes in the case study are primarily negative in nature, with the highest mean of 3.64 for the DAI construct and the lowest mean of 2.71 for the DA 7 construct. These findings imply that the employees exhibit the highest agreement with the construct "I feel that I have to do things on the job that are against my better judgement me in this organisation" and lowest agreement with "I am highly committed to serving my organisation." Since the latter is a result regarding job attitude and job engagement, the lack of commitment by the employees is one of the detrimental forces that might prevent employee engagement (meaningful use of KMS) in the parastatal organisation X. The stated lack of encouragement and regard for one's autonomy is a strong negative people-related attribute that might impede people-related outcomes (job engagement and knowledge-sharing attitude). From the perspective of culture-related attributes, the highest mean is noted for the DB9 construct (mean = 3.24), while the lowest mean is noted for DB12 (mean = 2.56). These findings suggest that individuals are rarely involved in the decisions of the organisations. The individuals rate such attributes of the organisational culture negatively, because the organisation does not nurture an inclusive environment regarding decision-making. The finding matches the observation for the people-related construct that shows that individuals believe they are less valued in the organisation, and they feel left out and less committed toward their job. The mean of 2.55 for the response indicates that the employees mostly agree regarding the importance of knowledge.

The political constructs that were considered in this case study are primarily negative, because the mean score for the responses associated with the constructs are lower than 3. The highest mean is noted for the political construct DC4 (2.84), while the mean is lowest for the political constructs DC6 and DC7 (2.45). These findings suggest that there is agreement that promotional policies are not violated, and employees are not discriminated against. However, the greatest disagreement is that employees are encouraged to speak honestly and are valued. These findings, once again, support the report-back that organisation X has leadership problems, because employees are not encouraged to share their thoughts and are therefore not

committed to working for the organisation. The KMS construct that exhibits the highest mean is for CE4 (mean = 3.08). The mean suggests that employees and management are not effectively and routinely using KMS. This finding suggests that the employees are using ICT and other knowledge-sharing platforms, but they are perhaps not doing so in a structured and meaningful manner. Such assumptions are based on the observation that most of the employees agree that they hardly receive any training or motivation from their managers, and this impedes the effective implementation of KM practices. These findings are aligned with the observation for CE1, which shows that the employees in organisation X rarely use ICT or technology to search for new knowledge. Rather, they use the platform for interacting with each other. However, the important take-home point from the descriptive statistics is that the employees in the parastatal organisation X are interested in sharing knowledge and learning to fully understand the value of sharing knowledge. Appropriate management support and structured training and talent management services could help them to use KM in a more meaningful manner.

6.5.12. Inferential analysis – regression analysis

Inferential analyses were conducted regarding the Research Question: Which non-technical aspects (people, culture, and politics), either alone or in interaction with each other, significantly predict the effective implementation of a knowledge management system for a parastatal organisation in SA? The major inferential statistics analysis undertaken to answer this research question was regression analysis. Regression analysis includes the independent variable constructs (people, organisational culture, and organisational politics), while the composite construct of KMS was considered as the dependent variable. The individual independent variables were constructed based on composite scores from several items. The mean of the composite item score was considered for each independent variable.

Next, the dependent variable of KMS had to be constructed. KMS was measured using a multi-item scale, with all items collectively intended to result in a single measurement on the same variable (that is, KMS). Therefore, averaging across the items to generate a single value of KMS for each participant was the appropriate method of analysis (Evans, 1996).

In the current study, the primary focus was concerned with analysing the influence of non-technical aspects that predict the effective implementation of a knowledge management system within a parastatal organisation in SA. Therefore, the researcher utilised regression

analysis for determining which non-technical aspects affect the implementation of an EKMS. With reference to the findings of Montgomery (2012), regression analysis is considered an essential statistical technique that helps in determining how the dependent and independent variables are related to each other. The regression model was evaluated from the perspective of the beta-coefficients and their respective p-values for each non-technical measure. If the p-value for the beta-coefficients of the independent variables is less than 0.05, it will signify that each one of the non-technical constructs independently influences the KMS measures. One of the key questions of the current research was to determine whether non-technical aspects influence the effective implementation of a knowledge management system. For that reason, the researcher had planned to execute a regression analysis, which is considered mandatory when aiming to comprehend the relationship between the variables. However, prior to applying the regression analysis, the researcher executed a correlation analysis.

6.6. Regression Analysis

As already discussed, regression is considered an essential statistical technique that helps to determine whether an independent variable influences the dependent variable. The following is the summary output that highlights the essential characteristics of the developed regression model, which encompasses three independent variables (people, culture, and politics). The only dependent variable concerned with effective implementation of a KMS was knowledge management.

6.7. Reliability and Reproducibility of the Regression Model

Assumptions of normality of residuals, homoscedasticity of residuals, absence of multicollinearity, and the lack of outliers were examined preceding the linear regression analysis.

Normality was evaluated using a Q-Q scatterplot (Field, 2009; Bates et al., 2014; DeCarlo, 1997). The Q-Q scatterplot compares the distribution of the residuals with a normal distribution (a theoretical distribution, which follows a bell curve). In the Q-Q scatterplot, the solid line represents the theoretical quantiles of a normal distribution. Normality can be assumed if the points form a relatively straight line. The Q-Q scatterplot for normality is presented in Figure 19.

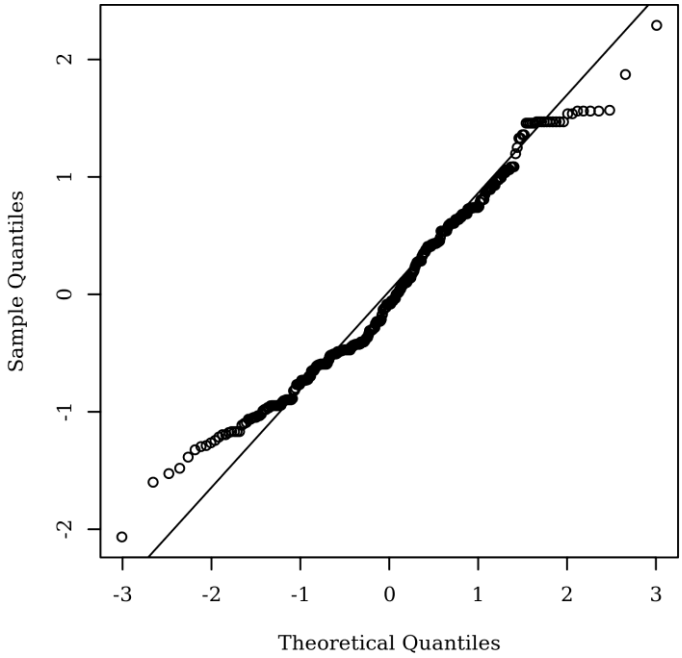


Figure 12: Q-Q scatterplot testing normality

Homoscedasticity was evaluated through plotting the residuals against the predicted values (Field, 2009; Bates et al., 2014). For the homoscedasticity assumption to be met, it was required that the points appear randomly distributed with a mean of zero and no apparent curvature. Figure 12 presents a scatterplot of model residuals and predicted values.

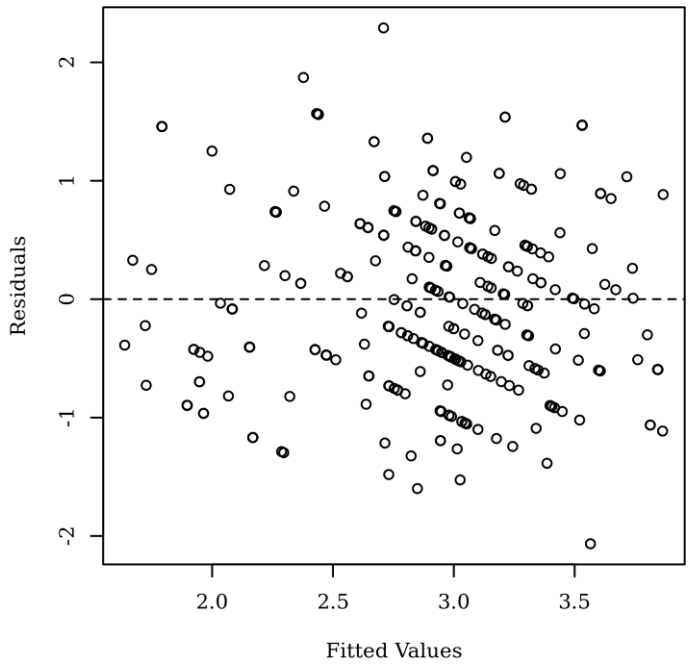


Figure 13: Residuals scatterplot testing homoscedasticity

Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. High VIFs indicate increased effects of multicollinearity in the model. VIFs greater than 5 are a cause for concern, whereas VIFs of 10 should be considered the maximum upper limit (Menard, 2009). All predictors in the regression model have VIFs less than 10. Table 16 presents the VIF for each predictor in the model.

Table 16: Variance Inflation Factors for People, Culture, and Politics

Variable	VIF
People	1.99
Culture	2.43
Politics	2.09

***Outliers*:** To identify influential points, studentised residuals were calculated and the absolute values plotted against the observation numbers (Field, 2009; Stevens, 2009). Studentised residuals are calculated by dividing the model residuals by the estimated residual standard deviation. An observation with a studentised residual greater than 3.11 in absolute value, the .999 quartile of a *t* distribution with 379 degrees of freedom, was considered to have a significant influence on the results of the model. Figure 16 presents the studentised residuals plot of the observations. Observation numbers are specified next to each point with a studentised residual greater than 3.

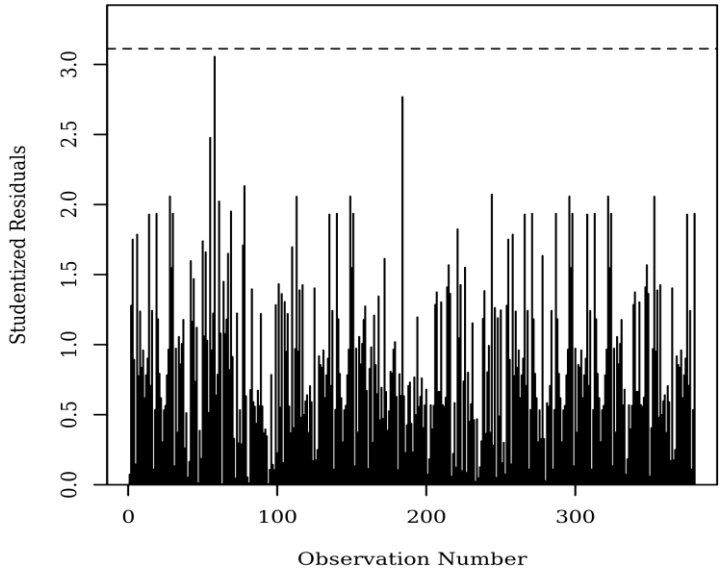


Figure 14. Studentised residuals plot for outlier detection

Hence, the regression model reflects that it is reliable and reproducible.

Table 17: Model Summary Regression Analysis

Regression Statistics	
Multiple R	0.54571
R-Square	0.2978
Adjusted R-Square	0.2922
Standard Error	0.75977
Observations	380

Table 17 indicates the coefficient value of determination (R-square and adjusted R-square). Faraway (2016) stated that the R-value determines the extent to which the model is fit for analysis. In Table 15, the R-value appears as 0.55. Multiple R represents the extent of correlation between the independent variables considered holistically and the dependent variable. A multiple R-value of "1" represents that there is a perfect positive relationship between the independent variables and dependent variables. Multiple R represents the correlation between actual and predicted values of the dependent variable. As the multiple R

is 0.55 for the regression analysis, it signifies that the correlation between the actual and predicted values of EKMS is 55%.

R-square defines the percentage of variance in the dependent variable that is explained collectively by independent variables. R-square measures the strength of the relationship between the model and the dependent variable. Akossou et al. (2016) suggest that the value of R-square is an essential statistical measure that helps to examine the extent to which the model centred on the dependent variable is influenced by the independent variable. The value of R-square in this study is 0.30, indicating that 30% of the changes in the magnitude and direction of the dependent variable are influenced by the changes in magnitude and direction of the independent variables. Although Cheng et al. (2014) suggest that this R-square suggests poor goodness of fit for the developed linear regression model, the significance of the model cannot be undermined, considering it is an exploratory analysis and restricted to a specific organisation. Hence, this regression model depicts the relation between the independent and dependent variables that are specific to parastatal organisations.

The R-square and adjusted R-square values indicate the extent to which the fluctuations in the magnitude and direction of the dependent variable in the sample and the population can be explained by the fluctuations in the magnitude and direction of the independent variables that were considered in the regression analysis. The values presented in the regression model reflect that the regression model's fit is poor, as only 30% and 29% fluctuations in the dependent variable (KMS) in the sample and population can be explained by the fluctuations in the magnitude and direction of the independent variables (non-technical aspects). The poor fit of the regression model is well-justified if the intercept of the regression model is analysed. The intercept of the regression model is statistically significant ($p = 0.000$), which implies that there could be other non-technical constructs apart from people, organisational culture, and organisational politics or some other parameters within the referred constructs that could have influenced the KMS to construct, which had not been considered in the regression model. For example, Merlo (2016) shows that perceived usefulness and end-user satisfaction are strong influencers for implementing KMS in technology enterprises (Merlo et. al., 2016).

Table 18: Summarised Analysis Results

	df	*SS*	*MS*	*F*	*Significance F*
Regression	3	92.04870153	30.68290051	53.15404856	0.00
Residual	376	217.0440616	0.577244845		
Total	379	309.0927632			

The statistical measure used to determine the model's fit is the significance value. As shown in Table 18, the established value is significantly smaller than the threshold of 0.05. Since the p-value of the regression analysis is less than 0.05 ($p = 0.00$), it indicates that the non-technical constructs of people, organisational culture, and organisational politics either independently or in association with each other influence KMS. The role of each non-technical construct in influencing the KM construct was evaluated from the beta-coefficients. The developed regression model demonstrates how independent variables in the form of social, cultural and political aspects influence the effective implementation of knowledge management. Since the R^2 value is low (29.2%), the independent variables that were considered might be insufficient in explaining the fluctuations in the dependent variable. On the other hand, the regression model might be specific to parastatal organisations only.

Table 19: Table of Coefficient

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.8311	0.188956512	4.3983728	0.00	0.459557273	1.202645094	0.459557273	1.202645094
People	0.16996	0.064800349	2.622759067	0.01	0.042539215	0.297372191	0.042539215	0.297372191
Culture	0.48799	0.066308028	7.359466855	0.00	0.357610707	0.61837276	0.357610707	0.61837276
Politics	0.04209	0.051225367	0.821566123	0.41	-0.058639066	0.142809117	-0.058639066	0.142809117

Table 19 reflects the beta-coefficients, which determine whether each independent variable influences the dependent variable. The threshold value described as the p-value is important when determining which variables have a significant influence on the dependent variable. Ayyub and McCuen (2016) state that probability statistics are generally referred to as the threshold for determining the significance of the relationship between dependent and independent variables. Though the significance level relates to the probability of rejecting the null hypothesis and can be set at different levels, the sig-value that is frequently accepted for statistical analysis is 0.05. Therefore, in order to claim a significant relationship between or

influence of the independent variable on the dependent variable, the sig-value must be less than 0.05.

The evaluation of the p-value of the beta-coefficients of the individual non-technical aspects shows that only people and organisational culture significantly and independently influence the KMS to construct, because the p-values for both beta-coefficients are less than 0.05. On the other hand, the study shows that organisational politics do not significantly or independently influence the KM to construct, because the p-value of the beta-coefficient of organisational politics with KM is greater than 0.05 ($p = 0.41$).

6.8 Correlation Analysis

The correlation analysis was conducted to explore whether the independent variables also interacted (related) with each other. Correlation analysis helps to determine whether there is an association between the variables whose relationship is to be measured. Only those variables that have a significant correlation with the EKMS construct would be considered as the composite construct within each non-technical attribute, which would automatically be incorporated into the regression model. With reference to the findings of Schober et al. (2018), the correlation test is centric to determining the association between the variables. Once the association is confirmed, it then allows a researcher to execute the regression analysis, which determines how an independent variable is numerically related to the dependent variable.

6.8.1 Pearson's correlation

The statistical measure that is used for measuring the correlation between the variables is Pearson's correlation, whose value ranges from -1 to +1. Wang et al. (2018) highlight negative and positive values, which suggest that both inverse and direct associations can be established between two variables. The statistical measure used in this study for determining the correlation between the variables was Pearson's correlation. When the value for Pearson's correlation is measured as being between 0.10 and 0.30, it can be inferred that a weak association or correlation exists between the variables. When Pearson's correlation value ranges between 0.30 and 0.70, it can be inferred that a moderate correlation exists between the variables. When the correlation value ranges between 0.70 and 1, it can be inferred that a

strong association exists between the variables. The correlation analysis is important for scenarios where it is required to establish the linkage between two continuous variables. While regression analysis helps in differentiating between the dependent variable and the independent variable, correlation analysis is important when trying to determine the linear relationship between the variables (Schober et al., 2018).

The table below depicts that a moderate correlation exists between the variables people and knowledge management, as Pearson's correlation value is 0.38. The variable organisational culture is also moderately associated with the dependent variable, effective knowledge management, with Pearson's correlation value being 0.52. Lastly, Pearson's correlation regarding the relation between politics and knowledge management is measured as 0.50, and thus, a moderately strong association exists between organisational politics and knowledge management.

Table 20: Correlation Table

	People	*Culture*	*Politics*	*KM*
People	1			
Culture	0.51585	1		
Politics	0.49698	0.62929	1	
KM	0.38186	0.52957	0.38543	1

6.9. Motivations behind the Hypotheses and their Interpretation based on the Regression and Correlation Outputs

6.9.1. Relationship between the knowledge management system and people-related factors

Hypothesis 1: **Attitudes of employees will not influence EKMS implementation in parastatal organisations**

Limited research has been published on whether people-based parameters such as their attitudes in implementing or using KMS play a role in the effective implementation of a KMS within parastatal organisations (Mafabi et al., 2012:57). There is also limited research regarding the extent to which the employees of an organisation influence the implementation

and utilisation of the KMS within parastatal organisations. The regression analysis identifies that people-related factors could have a 20% influence on the development, innovation, and implementation of a KMS within parastatal organisations. The people-related factors might be user satisfaction and perceived usefulness (Merlo et al., 2016). On the other hand, Teh and Yong (2011) state that employees' positive attitudes might not always (against the common belief) lead them to share their knowledge if there is a lack of intrinsic and extrinsic motivation to do so, thus making any KM system ineffective. This is not surprising, because Carolissen (2018) reports that a lack of employee empowerment translates into the ineffective implementation of a KMS. Therefore, a positive attitude in employees without empowerment and substantial autonomy would not motivate them enough to share implicit knowledge. On the other hand, Hirlak and Yesil (2019) report that an employee's ability and the opportunities available to the employees influence a KMS. These findings suggest that a positive employee attitude without the necessary ability to perform, or the opportunity or empowerment offered to employees prevent the effective implementation of a KMS.

The p-value in the relationship between people and an EKMS is 0.01. Since the p-value is considerably smaller than the threshold of 0.05, the hypothesis that individual employees' attitudes do not always influence the effective KMS implementation in parastatal organisations is not supported.

Moreover, Pearson's correlation value is 0.38 for the people variable and KMS, which implies that the relationship between people and the effective implementation of KMS is moderate, but statistically significant. Hence, the hypothesis that "Attitudes of employees will not influence EKMS implementation in parastatal organisations*"* is *rejected.* The role of people-related factors and their interaction in influencing meaningful use of KMS are put forward by Karamitiri et al. (2020). The authors share that knowledge is a valuable resource for aiding the growth of the organisation as well as the growth and opportunities offered to the employees. An effective KMS represents a cognitive framework, which helps to extract meaning and understanding of raw data that sometimes translates into the wisdom of employees (Karamitiri et al., 2020). Sanguankaew et al. (2019) state that as knowledge creation and transfer increase with interaction, it could be articulated and amplified between employees through cooperation to ensure sustainability.

6.9.2. Relationship between the knowledge management system and organisational culture

Hypothesis 2: A positive organisational culture will not be positively related to the EKMS

Alnesr and Ramzani (2019) show that a positive organisational culture that does not moderate knowledge sharing could not lead to innovation. Organisational culture influences not only the sharing of knowledge, but also the methods of accessing such knowledge, and the interaction between employees in influencing knowledge management (Alavi, Kayworth, and Leidner, 2005:191). The regression analysis reflects that organisational culture not only significantly influences KM, but accounts for 42% of its fluctuations in parastatal organisations. This relatively high percentage of organisational culture influencing KM in a parastatal organisation raises the assumption that organisational culture might even influence the people-related factors that facilitate or limit the adoption and implementation of an effective KMS. Hence, the speculation that organisational culture might interact with people-related parameters in influencing KM seems justified.

The findings further imply that positive and effective leadership is vital in a parastatal organisation, and plays an important role in providing the conducive environment for the effective implementation of a KMS, because leaders are an integral part of the organisational culture. Li et al. (2014) state that the strength of the organisational networks, network centrality, and density of the networks or relationships influence the knowledge transfer between employees, as well as their relation with the organisational hierarchy.

The importance of organisational culture in turning the negative attitudes of its employees into positive ones is further endorsed by Karamitiri et al. (2020), who report that organisational knowledge is achieved when organisations are able to sustain a spirit of cooperation, motivate their employees, and encourage them to innovate. In other words, competent management is considered one of the key attributes that ensure the effective implementation of KMS or the sharing of knowledge in a structured manner between employees. Hence, it could be inferred that competent management (which is also an organisational politics-related attribute) could motivate employees to share knowledge, as is evidenced by this study.

Analysing the influence of organisational culture aspects on the effective implementation of KM is another key aspect of the current research. Since the p-value for this relation is also lower than the threshold of 0.05, it means that organisational culture has a significant influence on the effective implementation and use of a KMS. Pearson's correlation value of 0.52 suggests that there is a moderately strong relationship between the variables, as the Pearson's coefficient falls between 0.00 and 0.70, which suggests a moderate relationship. Hence, the hypothesis that "A positive organisational culture will not always be positively related to the EKMS" is *rejected.*

6.9.3. Knowledge management system and organisational politics

Hypothesis 3: **Organisational politics will not be positively related to EKMS in parastatals**

Political behaviour has is important from the perspective of organisational dynamics and workforce management. Leaders and managers are aware of the highly elastic nature of organisations' investment in human capital, and the role of intangibles such as organisational politics in influencing them (Harris, 2008). However, organisational politics are also considered to reflect self-serving behaviours that employees or individuals within an organisation use to increase the probability of obtaining positive outcomes for themselves within the organisation, without affecting the overall operations of the organisation (Harris, 2008).

The regression model used in this study depicts that organisational politics do not seem to influence the adoption, implementation, and development of a KMS within parastatal organisations. The regression model shows that organisational politics only make a 4% contribution to influencing the implementation of a KMS within such organisations. Mass-Machua (2014) states that effective leadership is not enough to foster the relationship between organisational politics and KMS implementation in a favourable manner. These findings are substantiated by Quratulain et al. (2019), who report that the bureaucratic structure of an organisation negatively impacts knowledge sharing.

A regression analysis was also executed to determine whether organisational politics influence the effective implementation of a KMS. The p-value for these specific relationships is 0.41. Since the obtained p-value is greater than the threshold of 0.05, therefore, it can be inferred that organisational politics do not significantly predict or influence the effective implementation of the knowledge management system. Therefore, the hypothesis can be *rejected*. Since Pearson's correlation coefficient is 0.385 for the relationship between organisational politics and the effective implementation of a KMS, it can be deduced that the relationship between organisational politics and the effective implementation of KMS is only moderate. These findings are justified by the beta-coefficient of the regression model, which shows that such a relationship is not only moderate, but non-significant. Hence, the hypothesis that "Organisational politics will not be positively related to effective KMS in parastatals" is *accepted.* In this regard, the role of organisational politics could be viewed as a positive attribute, even if it is perceived negatively by the organisational culture or the employees (Karimitiri et al., 2020). The study endorses that competent management is one that could enhance the aspirations and limitations of the employees. This assumption stems from the observation that employees traditionally view certain organisational politics to be negative, but they are effective in positively driving organisational success by influencing its employees (Popa et al., 2019).

6.9.4. Relationship between KMS and the effects of people, working culture, and leadership (organisational politics)

Hypothesis 4: People, organisational culture, and organisational politics will holistically influence KMS

The fourth hypothesis tested whether the three independent non-technical factors influence the implementation of a KMS holistically across parastatal organisations. As the p-value of the regression analysis is less than 0.05, the hypothesis that "People, organisational culture, and organisational politics will holistically influence KMS" is *accepted.* These findings are in line with the observations of Singh (2008:3), who reported that leadership influences the implementation of KMS by influencing people and creating/enhancing/supporting the appropriate organisational culture. Halim and Ahmad (2019) show all dimensions of organisational culture influencing organisational innovations, while organisational learning in terms of information acquisition, behavioural parameters, and cognitive parameters also

influence an innovative culture. Yoon et al. (2020) report that social and task-related situational attributes within an organisation moderate the impact of hyper-competitiveness on knowledge sharing. These findings substantiate the hypothesis that the positive attitude of people will not always translate into effective knowledge sharing. Yoon et al. (2020) state that low job control impedes the effective implementation of knowledge management systems. In this present study too, it is shown that little interaction between management and employees or training offered (as depicted from the statement 'Since I have worked in this department, I have never seen either an executive or a manager coaching or training staff'), and low job control (as depicted by the statement 'there has always been an influential group in this department that no one ever crosses') are negatively correlated with the effective implementation of KMS. The lack of job control or training is a significant concern in government and parastatal organisations, and if there is no adequate monitoring, employees would be reluctant to use KM within parastatal organisations.

The importance of knowledge sharing on the long-term sustainability of organisations is well-acknowledged. Considering the importance of knowledge sharing, different organisations have implemented efforts for cultivating knowledge-sharing dynamics among employees. These efforts include the EKMS, incentives, or managerial interventions (Yoon et al., 2020). These findings could be equally applicable in the present study, where incentives are rarely provided in parastatal organisations for adopting and implementing innovations in routine work. The study by Yoon et al. (2020) highlights that managerial interventions could be used interchangeably in making employees adopt innovation and knowledge management services. The observation is aligned with the findings of the present study that shows that some negative organisational politics spread through parastatal organisations to impact employees' motivation related to KMS. Such assumptions are substantiated from the observation that the lack of job control or training, and absentee management could limit the effective implementation of KMS. In most instances, organisational politics impair affective commitment, job performance, and organisational citizenship behaviour (Yoon et al., 2020).

6.10. Summary of Quantitative Survey (Closed-Ended Questions)

The closed-ended questions were coded and analysed through correlation analysis and regression analysis. The research questions were interpreted in terms of the acceptance and rejection of the hypothesis that was considered. The first hypothesis that "Attitudes of people

will always not significantly affect the effective implementation of KMS in parastatal organisations*"* is *rejected*. The rejection of the first hypothesis indicates that the attitude of people is an important attribute for driving effective KMS within a parastatal organisation. Hence, other parameters such as empowerment and delegation would not be sufficient if the attitude of people toward effective KMS remains neutral. The second hypothesis that "A positive organisational culture will not always be positively related to the effective implementation of a KMS*"* is *rejected.* The rejection of the second hypothesis indicates that public organisations such as parastatals should practice a positive organisational culture for effective KMS. The third hypothesis that "Organisational politics (such as effective leadership) will not always be positively related to the effective implementation of a KMS in a parastatal organisation" is *accepted*. The acceptance of the third hypothesis reflects that flawed leadership or effective leadership without other aspects of employee satisfaction would impede effective EKMS**.** The fourth hypothesis that "People, organisational culture, and organisational politics will holistically influence KMS" is *accepted*. The acceptance of the fourth hypothesis substantiates the first and third hypotheses, which postulate that people's attitude and people management are influenced by organisational culture and organisational politics that drive effective EKMS.

As the p-value of the intercept regarding the regression model is less than 0.05, it is assumed that there could be other non-technical constructs apart from those considered in the regression model to have influenced the KMS construct.

The non-technical constructs of people, organisational culture, and to a small degree organisational politics either independently or in association with each other are found to influence KMS. However, the regression model's fit is poor, as only 30% and 29% fluctuations in the dependent variable (KMS) in the sample and population could be explained by the fluctuations in the magnitude and direction of the independent variables (non-technical aspects).

The variable organisational culture is moderately associated with the dependent variable, effective knowledge management, with Pearson's correlation value being 0.52. The only dependent variable concerned with effective implementation of a KMS is knowledge management. The value of R-square in this study is 0.30, indicating that the independent

variables influence 30% of the dependent variable. According to Huettner (2012), this R-square suggests a poor fit for the developed linear regression model.

The non-technical aspect of people significantly affects the effective implementation of a knowledge management system. Organisational culture also has a significant influence on the effective implementation and use of a KMS. Pearson's correlation value of 0.52 suggests that there is a moderately strong relationship between the variables, as Pearson's coefficient falls between 0.00 and 0.70. These findings are justified by the beta-coefficient of the regression model, which shows that such a relationship is not only moderate, but also non-significant. People and organisational culture significantly predict KMS. Organisational politics do not significantly predict KMS.

6.11. Qualitative Aspects (Open-ended Question Analysis)

This section provides the results from the analysis of the open-ended questions that captured the challenges an organisation is facing in the absence of an effective KMS, and the improvements or changes needed within the organisation related to managing knowledge. This answers the question of "What challenges do the organisations have in the absence of an EKMS?" The analysis of each question was done through thematic analysis (as discussed in Chapter 5).

a. Familiarisation of the researcher with data

The researcher initially transliterated the written responses on the questionnaire from the participants, and then read (and re-read) the transcriptions to gain an accurate understanding of the content of the responses, and become familiarised with the collected data, helping to provide the foundation analysis that ensued.

b. Generating initial codes

With the familiarisation of the data, the identification of preliminary codes commenced, which can be referred to as the features of primary data collected that seem meaningful for the purposes of the study. Out of 380 participants, only 52 responses were obtained regarding the improvements to be made related to managing knowledge in the absence of an effective system and the qualitative question, "What challenges do the organisations have in the

absence of an EKMS?" These codes are presented in Table 19 on the response column and are more numerous and specific (R1 to R52 codes) than the themes, but they provide an indication of the context of the interviews.

c. Searching for the themes

The researcher then conducted the process of interpretative analysis of the collated codes. This process involved the sorting (combining) of relevant data extracts according to overarching themes. The researcher identified major categories that emerged through the responses gathered from the surveyed challenges facing the organisation in the absence of an effectively implemented KMS. Table 22 shows the categories that were named with guidance from literature. They include KM in an organisation; organisational use of an ICT system; knowledge-based theory; sharing and integration of knowledge; organisational learning, and a technology-based perspective. This alluded to the association between sub-themes, codes, and searching for themes.

Table 21 below lists the profiles of the interviewed participants, where each participant has been assigned code "R". The table explains each participant's position, the business unit in which they are working, their respective qualification, and the department they are working in.

Table 21: Profile of Interview Participants

Codes	Position	Business unit	Qualification	department
R1	Senior manager	Rail	Degree	ICT
R2	Executive	Engineering	Diploma	Rail
R3	Executive	Other	Master	Operations
R4	Middle manager	Rail	Master	Finance
R5	Senior manager	Engineering	Degree	Engineering
R6	Executive	Engineering	Degree	Engineering

Codes	Position	Business unit	Qualification	department
R7	Executive	Rail	Master	Rail
R8	Executive	Rail	PhD	Infrastructure
R9	Employee	Rail	Matric	Operations
R10	Middle manager	Engineering	Diploma	Infrastructure
R11	Middle manager	Rail	Matric	Marketing
R12	Senior manager	Other	Degree	Rail
R13	Senior manager	Rail	Master	Rail
R14	Employee	Engineering	Matric	Rail
R15	Employee	Engineering	Diploma	Finance
R16	Employee	Rail	Diploma	Rail
R17	Employee	Rail	Matric	Rail
R18	Employee	Other	Matric	ICT
R19	Employee	Rail	Matric	Rail
R20	Employee	Other	Diploma	Marketing
R21	Employee	Other	Degree	ICT
R22	Employee	Other	Degree	ICT
R23	Senior manager	Rail	Diploma	Operations
R24	Executive	Rail	PhD	Operations
R25	Senior manager	Other	Master	Infrastructure
R26	Middle manager	Other	Degree	Infrastructure
R27	Employee	Other	Diploma	Infrastructure
R28	Employee	Rail	Diploma	Operations
R29	Employee	Rail	Matric	Operations

Codes	Position	Business unit	Qualification	department
R30	Middle manager	Rail	Diploma	Operations
R31	Senior manager	engineering	PhD	Rail
R32	Employee	Engineering	Degree	Engineering
R33	Middle manager	Engineering	Degree	Engineering
R34	Employee	Engineering	Matric	Rail
R35	Senior manager	Rail	Master	Operations
R36	Executive	Rail	Degree	Operations
R37	Middle manager	Rail	Diploma	Rail
R38	Executive	Rail	Degree	Operations
R39	Employee	Engineering	Degree	Engineering
R40	Middle manager	Engineering	Master	Engineering
R41	Senior manager	Other	Diploma	Finance
R42	Middle manager	Other	Matric	Finance
R43	Middle manager	Other	Other	ICT
R44	Employee	Other	Other	ICT
R45	Employee	Other	Other	Finance
R46	Executive	Other	PhD	Finance
R47	Employee	Engineering	Degree	Infrastructure
R48	Executive	Engineering	Master	Infrastructure
R49	Senior manager	Other	Diploma	Marketing
R50	Senior manager	Other	Diploma	Other(HR)
R51	Employee	Rail	Other	Operations

Codes	Position	Business unit	Qualification	department
R52	Executive	Other	Degree	Other (HR)

d. Reviewing themes

An in-depth review of the identified themes is shown in Table 22, where the researcher determined whether to discard, separate, refine, or combine the initial themes, based on the need for the meaningful coherence of data within themes, in addition to the themes having identifiable and clear distinctions between them. This is usually achieved over two stages, checking of themes in relation to coded extracts (stage 1), and for the complete data set (stage 2). After the themes were searched, new themes were generated, and all codes were aligned to a specific theme, based on the relationship (Table 23).

e. Defining and naming themes

Themes were refined and named with new names within the data. Continuing analysis was done for further enhancement of the themes identified. In Table 22, the researcher needed to provide 7 themes with names and clear working definitions that capture the essence of each theme in a concise manner. At this point, a unified story of the data needed to emerge from the themes.

Table 22: Codebook

Codes	
Code 1	R 1 R4 R 9 R11 R12 H14

	R16 R17 R24 R26
Label	Organisation does not manage knowledge effectively.
Definition	Organisation does not manage knowledge effectively.
Description	In terms of the absence of KMS teams in the organisation, virtually all participants providing information on the teams responsible for developing their organisation's KMS indicate, "executives from each business unit, as well as middle and senior managers and staff, comprise the team". A study by Wang, Noe, and Wang (2014) illustrates that when shared knowledge is used and reused, value is obtained from the management of knowledge. Within an environment characterised by motivation and trust for individuals to make use of and share knowledge; with systematic processes to create as well as find knowledge; and, if need be, technology for the relatively simple sharing and retrieval of knowledge, consistent value is delivered (Tanriverdi, 2005). People within an organisation, their organisational culture and organisational politics will at all-time act as either enablers of or barriers to effective KMS implementation. A study by Singh and Kant (2008) mentioned that barriers need to be identified and managed appropriately within an organisation in order to have an effective KMS. There is also the need for the creation of additional enablers and the enhancement of existing ones. This is often where the greatest KMS effectiveness challenges lie. A study by Terry, Lee, Paek, and Lee (2013) mentions reasons for such challenges as being prestige, reputation, and reciprocity, or every now and then, altruistic motives. There are different levels in a parastatal organisation, such as the individual and organisational or group level. At the level of the individual, employees are presented (through KM) with opportunities of gaining experience and the

	enhancement of skills by sharing or working together with other people, learning from each other, thus enhancing their personal performance, consequently resulting in improved career development (Suppiah and Singh, 2011). Organisations that manage knowledge well claim higher rates of productivity. Through greater access to the knowledge of employees, organisations increase innovation, reduce re-work, have higher data integrity, make better decisions, streamline processes, and achieve greater collaboration as well as coordination. In other words, for the public sector, managing knowledge could reduce the cost of operations and improve customer service (Syed-Ikhsan and Rowland, 2004). Salleh, Chong, Ahmad, and Ikhsan (2012) advise that parastatal organisations should import managerial processes from the private sector to deal with non-technical aspects, emulating their successful techniques (Syed-Ikhsan and Rowland, 2004). Liebowitz (2016) supports this, but there remains the question regarding most parastatals in SA as to whether and to what extent they are affected by organisational politics, organisational culture, and the behaviour of people (Knights and Murray, 1994).
Code 2	R2 R7 R22 R33 R34 R36 R37 R45 R47 R49

Label	Organisation fails to utilise available ICT systems.
Definition	Organisation fails to utilise available ICT systems.
Description	Participants acknowledge that there have been systems working in the organisation over the past 20 years, and the organisation had been operating smoothly. Knowledge is created and shared based on "pull" by individuals and not a centralised technology-enabled "push" of information recorded on and using computers. Some participants think that the intranet and other systems, such as document management, can be used in support of internal management activities. KM involves systematic approaches to find, understand, and use knowledge to achieve the organisational objectives. Managing knowledge creates value by reducing the time and expense of trial and error or the reinvention of the wheel. An ability of an organisation to use its collective knowledge through a process of knowledge generation, sharing, and exploitation is enabled by technology to achieve its objectives. Technology is employed in all the processes of KM, and various technological solutions are already available in the market. The problem is actually a matter of selecting an appropriate technology (Asoh et al., 2002). However, one must bear in mind that technology is only a crucial enabler. It can help connect people with information and people with each other, but it is not the solution in itself. Organisations can have state-of-the-art technologies, but an effective change management strategy must be in place to deal with the organisational culture and people (Mueller, 2014).
Code 3	R3 R10 R13 R15 R18

	R19
Label	Information for employees is decentralised.
Definition	Information for employees is decentralised.
Description	There is a need for seamless integration of the various systems in the organisation that will lead to the role of the internet and internet-based KMS designs becoming more pertinent. It is also essential to have a unified standard of a technology system applied to all knowledge management. It is also obvious that knowledge sharing is not happening at the organisation, as older staff seems to be hesitant to pass on information that they themselves have acquired over decades of work at the organisation.
Code 4	R5 R6 R8 R23 R25 R30 R31 R32 R38 R42 R44

	R46 R52
Label	Lack of knowledge sharing and integration.
Definition	Lack of knowledge sharing and integration.
Description	Participants feel that an effective KMS involves far more than only technology, encompassing broad organisational culture, organisational politics, and people issues in the organisation. In fact, an effective resolution of such issues is identified as a major concern in the deployment of an effective KMS. This advocates the use of organisational and behavioural change management as a critical success factor in the implementation of IS. An organisation-wide KMS usually requires profound cultural, political, and people changes, while organisations commonly reward their professionals and employees based on their individual performance and know-how. Participants think that easy access to internal organisational knowledge sources is also rated relatively highly and desirable. H44 and H52 state: *Access to the legacy systems, platform independence, access to multi-media data formats, a uniform and easy-to-use, point-and-click interface, and capability for easy multi-media publication is essential for knowledge sharing.* This insight is important for the development of an effective KMS because simply delivering or "pushing" information to the users' computers may not be an EKMS due to the limited user attention at this point (Jain and Jeppesen, 2013). This would, however, be required for processing this information and converting it to knowledge. In addition to the provision of the necessary information (the raw material for knowledge creation), KM is based on the concept and assumption that an organisation's most valuable resource is the knowledge of its people. This focus is being driven by the accelerated rate of

	change in today's parastatal organisations and in society as a whole. KM recognises that nearly all jobs involve 'knowledge work', and so all staff is 'knowledge workers' (Drucker, 1993) to some degree or another, meaning that their job depends more on their knowledge than their manual skills. This means that creating, sharing, and using knowledge is among the most important activities of nearly every person in every organisation.
Code 5	R20 R21
Label	Little improvement of the organisation to customers.
Definition	Little improvement of the organisation to customers.
Description	Participants feel that development of a centralised repository will deal with the challenges the organisation has for measuring the value, quality, and quantity of knowledge. This in turn would become a key factor for the long-term success and growth of the organisation. R20 states: *I believe that it will start to have value for our organisation because of more imported knowledge to deal with all operations and service delivery to our customers.* *R21 states: We need to do everything to benefit our commuters.*
Code 6	R27 R29
Label	Fails to utilise available IS.
Definition	Fails to utilise available IS.
Description	An effective KMS seems to require a variety of technological tools in many areas: Database and database management, communication and messaging, browsing, and retrieval. To make a decentralised system more effective, H27

	states: *We need a single technology or product for an effective KMS.*
Code 7	R35 R39 R40 R41 R43 R48 R50 R51
Label	Unwilling to adopt new technologies.
Definition	Unwilling to adopt new technologies.
Description	Participants see a difference between information and knowledge as a challenge in the organisation, although a few of the parastatal's employees are not sure whether there is an implemented KMS or not. This emerges in their discussions that potentially, knowledge creation could create a condition of cognitive overload due to an over-supply of information, countered by the desirability of providing access to people with knowledge, rather than merely the information itself, in cases where the employees are unwilling to adopt new technologies. The Internet of Things, internet-based technologies, and service providers can play a key role in the development of an effective KMS by providing cost-effective access to the external knowledge domains, but non-technical factors could hinder the access to or use of those tools if the whole system is not centrally controlled and integrated.

The following themes were generated from the insights gained from the interviews with the participants, which are listed in the column of participants.

Table 23: Development of Themes

Theme	Participants	Codes
Theme 1 Organisation does not manage knowledge effectively	R1 R4 R9 R11 R12 R14 R16 R17 R24 R26	There is a lack of monitoring Mandatory implementation is not required
Theme 2. Organisation fails to utilise available ICT systems	R2 R7 R22 R33 R34 R36 R37 R45 R47 R49	Lack of training Meaningful use is not established Perceived benefits low
Theme 3. Information for employees is decentralised	R3 R10 R13 R15 R18 R19	Employee needs and skills remain unidentified
Theme 4. Lack of knowledge sharing and integration	R5 R6	Lack of motivation and reward systems for employees

Theme	Participants	Codes
	R8 R23 R25 R30 R31 R32 R38 R42 R44 R46 R52	Organisational culture not positive Lack of leadership approaches in enforcing
Theme 5. Little effort to improve the organisation to customers	R20 R21	Lack of reward and motivation Timely promotions without an appraisal
Theme 6. Fails to utilise available IS	R27 R29	Lack of competence among leaders and employees Preoccupation
Theme 7. Unwilling to adopt new technologies	R35 R39 R40 R41 R43 R48 R50 R51	Chances of professional growth are minimal No separate appraisal for implementing KM

f.Thematic report

After the analysis was complete, the researcher had to transform each theme into an interpretable piece of writing by using compelling extract examples that relate to the themes based on the research question and quotation.

For Theme 1, 10 participants contributed to the creation of the theme. The codes represent each participant who was assigned a code. For instance, R1 is a senior manager in the

business unit of the Rail Department. All interview participants were codified with "R" as the initial letter of the participant.

Theme 1: Organisation does not manage knowledge effectively

In terms of the absence of KMS teams in the organisation, virtually all participants provide information on the teams responsible for the development of their organisations' KMS and indicate, "Executives from each business unit, as well as middle and senior managers and staff, comprise the team". Less consistency emerges about the individual/s responsible for the KMS.

> *Middle management regards knowledge management as an organisation-wide initiative by involving the technical infrastructure, deploying workstations to professional staff, and implementing large-scale communication and groupware tools (R1).*

Two participants highlight that,

> *The executive in the ICT department (CIO) is responsible for leading the KMS development initiative (R4).*
>
> *On the other hand, with the appropriate technology and information infrastructure in place, the average KMS development budget is substantially very low due to political interference by higher authorities (R11).*

A study by Wang, Noe, and Wang (2014) illustrates that when shared knowledge is used and reused, value is obtained from the management of knowledge. A study by Singh and Kant (2008) mentioned that barriers needed to be identified and managed appropriately within an organisation in order to ensure an effective KMS. There is also the need for the creation of additional enablers and the enhancement of existing ones. This is often where the greatest KMS effectiveness challenges lie. A study conducted by Kim, Lee, Paek, and Lee (2013) mentions that the reasons for such challenges are that many people wish to retain their perceived prestige, reputation, and reciprocity or sometimes altruistic motives. This suggests that knowledge sharing is not a natural act among all employees working in a parastatal organisation.

The participants feel that the development of a centralised repository will deal with challenges the organisation is experiencing regarding the measurements of the value, quality, and quantity of knowledge, as this is a key factor for the long-term success and growth of the organisation through their KMS.

> *Knowledge management initiatives should be directly linked to explicit and important aspects of organisational performance (for example, customer services, and service innovations). In other words, organisations need to find leverage points, where enhanced knowledge can add value and then develop an effective KMS to deliver the required knowledge (R9).*

Some participants believe that effective knowledge management needs to be initiated at the highest level in the organisation:

> *Executives and senior managers are supposed to be the champions of KMS (R14).*

> *The knowledge management strategy needs to come from the top management and not from an ordinary employee (R16).*

> *Employees need to implement what their seniors initiate (R17).*

Through greater access to the knowledge of employees, organisations increase innovation, reduce re-work, have higher data integrity, make better decisions, streamline processes, and achieve greater collaboration as well as coordination. In other words, for the public sector, managing knowledge could reduce the cost of operations and improve customer service (Sun and Chen, 2017).

> *In any organisation, strategies come from the top…senior managers need to sit with their middle managers to make the strategy visible (R17).*

There are different levels in a parastatal organisation; these include the individual employees and the organisational or group level. At the individual level, employees are presented with opportunities for the enhancement of their skills by sharing expertise or working together with other people, learning from each other, thus enhancing their personal performance, which can result in improved career development (Suppiah and Singh, 2011). At the level of the organisation, KM provides major benefits for a parastatal organisation.

Improvement of an organisation's performance takes place through enhanced quality, innovation, productivity, and efficiency. Organisations that manage knowledge well can claim higher rates of productivity. Salleh, Chong, Ahmad, and Ikhsan (2012) advise that parastatal organisations should import managerial processes from the private sector to deal with non-technical aspects, emulating their successful techniques (Syed-Ikhsan and Rowland, 2004).

Theme 2: Organisation fails to utilise available ICT systems

A total of 10 participants contribute to the creation of Theme 2. They claim that the organisation fails to use available systems, and business units and departments are not interested in using business systems where they are available. These participants acknowledge that there have been systems working in the organisation over the past 20 years, and the organisation had been operating smoothly, but without computer systems. Liebowitz (2016) agrees that an institution can function smoothly without owning or using ICT.

Consistent value is delivered within an environment characterised by motivation and trust for individuals to make use of and share knowledge, with systematic processes implemented to create as well as find knowledge, and, if need be, technology for the relatively simple sharing and retrieval of knowledge (Tanriverdi, 2005).

Knowledge is created and shared based on "pull" by individuals and not a centralised technology-enabled "push" of information recorded on and using computers. Some participants think that intranet and other systems such as document management can be used so long in support of internal management activities.

> *Most of our members are used in old railway systems, but not in computers* (R2).
>
> *It is not easy to just leave and change what you know is working (R7).*
>
> *I started working systems in this organisation ages ago. This organisation is collapsing, and everybody (executives, senior management) knows that most of our colleagues are due to go on pension, and they like the old way of working* (R22).

*Executives can create a good structure and strategy for the organisation to address challenges at hand on a KMS (*R33).

Experienced individuals must be willing to give away information to young blood (*R34).*

Organisational intranet must also play a role in support of internal knowledge management activities due to cost-effective technological capabilities (R47).

KM involves systematic approaches to find, understand, and use knowledge to achieve organisational objectives. Managing knowledge creates value by reducing the time and expense spent on an approach of trial and error or the 'reinvention of the wheel'. The ability of an organisation is to use collective knowledge in the process of knowledge generation, sharing, and exploitation enabled by technology to achieve its objectives. However, one must bear in mind that technology is only an enabler and does not produce the final solutions to all challenges. ICT can help connect people with information and people with each other, but it is not the solution to the final use of such shared knowledge.

Theme 3: Information for employees is decentralised

Six participants contribute to the creation of Theme 3, referring to information being decentralised. Participants feel that their manuals and systems are out-dated. There is a need for seamless integration of the various systems in the organisation that will lead to the role of the internet and internet-based KMS designs becoming more up-to-date and pertinent. It is also essential to have a unified standard of a technology system applied to all knowledge management in an organisation. Technology is employed in all the processes of KM, and various technological solutions are already available in the market. The problem in most organisations is the challenge of how to select an appropriate technology (Shehabuddeen et al., 2006).

…this hinders the organisation from being up-to-date. To personally change that status quo, I have to take the initiative (R3).

…brainstorm with other international rail organisations (R10).

*There is no single dominant technology system or product for effective KMS in our organisation (*R13).

No standard to the technology used in organisation X (R15).

Organisations can have state-of-the-art technologies, but an effective change management strategy must be in place to deal with addressing and potentially changing the organisational culture and people (Mueller, 2014).

*Everybody is only using whatever he thinks is good for him/her (*R18).

It is also obvious that knowledge sharing is not happening at the organisation, as older staff seem to be hesitant to pass on information that they themselves have acquired over decades of work at the organisation.

This form of knowledge is of vital importance, because it cannot be found in books and manuals but only by experience (R19).

Theme 4: Lack of knowledge sharing and integration

For Theme 4, 13 participants contribute to the creation of the theme. They feel that an effective KMS involves far more than only technology, encompassing broad organisational culture, organisational politics, and people issues in the organisation.

Our organisation has a problem of culture…to have effective ways to motivate knowledge sharing in our organisation (R5).

Finding an effective solution to the organisational culture, organisational politics, and people issues are being identified as a major concern in the deployment of an effective KMS.

This problem can be dealt with through the organisational reward and incentive mechanisms (R6).

In the modern world, nearly all jobs involve 'knowledge work,' and so all staff by implication are 'knowledge workers' (Drucker, 1993) to some degree, meaning that their job depends more on their knowledge than their manual skills.

> *The organisation needs to implement motivating employees to be part of any initiative in the organisation (R8).*

This advocates organisational and behavioural change management as a critical success factor in the implementation of IS. An organisation-wide KMS usually requires profound changes to the organisational culture, organisational politics, and people, while organisations commonly reward their professionals and employees based on their individual performance and know-how, and not based on their ability to share knowledge.

> *A systems integration strategy by seniors is needed, where everybody will happily comply with the initiative (R23).*

> *People need to get incentives in order to release information. I think a change management strategy is needed most (*R25).

Participants think that easier access to internal organisational knowledge sources is desirable.

> *Access to the legacy systems, platform independence, and access to multi-media data formats* (R44).

> *A uniform and easy-to-use, point-and-click interface and capability for easy multi-media publication is essential for knowledge sharing* (R52).

Learning is the process of internalising and converting information to knowledge. Such learning is very important for the development of an effective KMS for the following reason; simply delivering or "pushing" information to the users' computers may not be an EKMS due to the limited user attention to such information (Jain and Jeppesen, 2013), which would, however, be required for processing this information and converting it to knowledge. In addition to the provision of the necessary information (the raw material for knowledge creation),

> *Individuals should also be motivated to convert it to knowledge (i.e., learn and internalise the information)* (R46).

To change people's behaviour and attitude, and thereby reducing barriers to learning, there is the need for a mental modal change through the creation of a culture of knowledge sharing.

The organisation needs to install team building to motivate working as teams (R31).

The organisation needs to share small things using our emails, then that will motivate the sharing of ideas (R32).

This is supported by the participants' view that information is the raw material for knowledge, while more information does not necessarily lead to enhanced knowledge sharing and knowledge creation.

Social collaborations with each other in departments can assist (R30).

KM is based on the concept that an organisation's most valuable resource is the knowledge of its people. This focus is being driven by the accelerated rate of change in today's parastatal organisations and in society as a whole. This means that creating, sharing, and using knowledge is among the most important activities of nearly every person in the organisation.

Theme 5: Improving the organisation to customers

Two participants contribute to the creation of Theme 5. They feel that the development of a centralised repository will deal with the challenges the organisation has for measuring the value, quality, and quantity of knowledge.

Our organisation will start to recognise the importance of the knowledge that is related to all operations and service delivery to the customers (R20).

This, in turn, would also become a key factor for the long-term success and growth of the organisation.

The organisation needs to do everything for the benefit of our commuters (R21).

Theme 6: Fails to utilise available IS

Two participants contribute to the creation of Theme 6. An effective KMS seems to require a variety of technological tools in many areas: database and database management,

communication, messaging, browsing, and retrieval. To make a decentralised system more effective, participants comment as follows:

> *There is a need for adequate technology (R27).*
>
> *There is a need for a user-friendly KMS for old employees in the organisation (R29).*

Theme 7: Unwilling to adopt new technologies

Two participants contribute to the creation of Theme 7. They see a difference between information and knowledge as a challenge in the organisation, although a number of organisation X's staff seem to be unsure whether there is an implemented KMS in their organisation or not.

> *Integrated technology development/architecture is more important for KMS. Without it, there is…we have challenges regarding access to information for creating reports (R35).*

Potentially, knowledge creation could create a condition of cognitive overload due to an over-supply of information, countered by the desirability of providing access to people with knowledge, rather than merely the information itself, in cases where the employees are unwilling to adopt new technologies.

> *A change management plan is important (R39).*

Organisational change agents are necessary if the organisation wants to change the attitudes of people, so that the organisational culture can change to suit the use of new technologies in the parastatal organisation.

> *The organisation needs to train change agents from among the employees. The documented output of a KMS, when it is implemented, is important (R40).*

In parastatal organisations, many stakeholders must be involved in turning around a parastatal, for example, the unions (labour) as well as management and employees.

One needs to get labour involved as a key stakeholder in this plan (R41).

The Internet of Things (IoT), internet-based technologies, and service providers can play a key role in the development of an effective KMS by providing cost-effective access to the external knowledge domains, while non-technical factors can hinder the access to or use of those tools if the whole system is not centrally controlled and integrated.

A benefit to employees for easy work needs to be work-shopped (R43).

The executive management team must design a strategy in which they consider employees' participation, as the employees will need to implement the KMS hands-on.

Get the employees' feedback on the initiative (R48).

Inclusion of all user departments, business units, some external stakeholders, and the community will result in the trust being built and will benefit the KMS implementation.

*Planning must include every stakeholder (*R50).

6.12. Discussion

The main purpose of this study was to assess the non-technical factors for the implementation of an EKMS in a parastatal organisation in SA. Based on the findings from the interviews, it was revealed that the majority of the participants are of the opinion that an effective KMS could serve as an integral part of the organisation's growth and success, and it is necessary that there is a well-planned and fully inclusive process implementation process of the KMS in the organisations.

The interviews were carried out mainly with members of management, those in executive positions such as senior managers, executives, and middle managers who provided valuable insights regarding the effective implementation of the knowledge management system within the organisation. It was also revealed from the analysis that the apparent lack of knowledge sharing within the organisation would probably lead to inefficiencies in the organisation through a lack of passed-on know-how, which could cause the organisation to regress due to ineffective systems.

This was validated by the quantitative findings when the employees were asked about the importance of implementing a knowledge management system, and a majority of participants stated that a KMS should be implemented and was important for the organisation. The findings of the qualitative analysis support the findings from the regression model and the quantitative analysis that was undertaken based on the model. The qualitative and quantitative analysis both showed that the individuals working in parastatal organisation believe that an effective KMS can be a key to the success of the organisation, as long as such implementation involves all stakeholders during the planning stage. This includes leadership that effectively takes on the task of role model and helps to create an organisational culture of knowledge sharing. Moreover, the stakeholders also agreed that it was imperative to use change management so that all stakeholders buy into the effective implementation of a KMS across the parastatal organisations and help to make the system workable across the organisation.

Therefore, people-related factors such as their intention and willingness to create, adapt, and implement effective KMS are extremely important. The qualitative analysis further substantiates that a conducive organisational culture is necessary for the effective implementation of a KMS. To recall, the regression model reflected that the organisational culture was positively related to the effective implementation of a KMS. The qualitative analysis also reflected that individuals felt that the lack of an effective KMS could lead to organisational inefficiencies.

These findings are aligned with the observations made by Mafabi et al. (2012:57), who show that organisational resilience is directly related to an effective KMS. Hence, people employed by parastatal organisations recognise the importance of a conducive organisational culture in influencing an effective KMS, but they believe that such a conducive environment can only be created through the leadership setting an example of sharing knowledge, and that knowledge sharing is recognised as an essential aspect in the organisation, and being rewarded.

Finally, the qualitative responses were obtained from the leadership team, which signified that leaders in parastatal organisations had been aware of the need to change the attitude of people and the organisational culture if they wished to implement an effective KMS. While the attitudes held by employees (individuals and groups/teams) played an important role, as did

those held by the leadership, the regression output suggested that organisational politics might not directly influence the adoption of a KMS, but might do so by interacting or influencing individuals and their roles in the organisational culture.

6.13 Secondary Data Analysis

This chapter depicts the evidence related to the influencers of KM in parastatal or public organisations as a function of politics, culture, and people. The chapter also evaluated the evidence that explored the interaction between politics, people, and culture on KM practices. The secondary data analysis was undertaken to substantiate or challenge the findings of the present study, because the present case study included only one parastatal organisation. Therefore, the reliability and reproducibility of the study were enhanced by integrating and analysing the findings in light of secondary data analysis.

Table 24: Synopsis of studies considered for secondary data analysis

Study	Methodology	Findings
Mensah et al. (2018)	The participants for the study hailed from the parastatal organisations (n = 23) and the banking sector (n = 15). The moderating effect of effective talent management services on the impact of psychological contract on talented employee performance was explored through structural equation modelling	Although the correlations and positive effect of psychological contract and the mediating effects of TM services on employee outcomes followed a similar trend in both participating groups, the effect was stronger for the banking sector compared to the parastatal organisations.
Kuo et al. (2011)	Explored the relationship between service innovation and job satisfaction in people-oriented organisations. They conducted a cross-sectional survey across participants (n = 26) in the	There was a significant and positive correlation between service innovation and job satisfaction and job attitudes ($p < 0.05$), while there were positive correlations between job attitude and job satisfaction with turnover intention.

Study	Methodology	Findings
	hospitality industry	
Yeo et al. (2014)	The impact of job attitude in driving knowledge-sharing practices in organisations in Saudi Arabia	Knowledge-sharing attitude of employees could be driven separately by employee attributes, politics, and culture. Management support is perceived to be a commitment and investment of the organisation in developing and shaping employees.

6.14 Discussion on Secondary Data

The secondary data analysis showed that the effectiveness of politics and the congeniality of culture could vary between organisations, which directly manifests as a lower moderating effect on the referred variables. The effect of TM services on PC and employee outcomes was less for parastatal organisations, which once again substantiated that parastatal organisations are less effective than private or corporate organisations, and even certain public service entities that are directly accountable to the public in terms of employee management and employee outcomes. Hence, it is not surprising why talented employees in parastatal organisations respond less to TM practices, even if such exist within the organisational culture. The finding further endorsed the need for effective organisational politics in improving employee outcomes. Another major finding in the Mensah et al. (2018) study that could be extrapolated is that the lower the employee outcome; the lower the impact of TM services. Such relationships were primarily observed for parastatal organisations. The finding of the Kuo et al. (2019) study is important from the perspective of the present study, because KMS could be considered a service innovation, and service innovation was shown to directly influence employee attitude (people-related factors). It was speculated in the present study that the lack of opportunity outside parastatal organisations compels employees to adopt KM practices, irrespective of their likes and dislikes. However, it could also be possible that the quality and utility of service innovation (KM practices) could influence their engagement with such services. Such assumptions were substantiated by the present study that showed that the lack of shared knowledge (inability to access the hierarchy due to barriers) can impede the implementation of KMS. Such experiences could develop negative job attitudes in employees, and might lead to higher turnover intention. The lack of job opportunities beyond their organisation might be a problem for older employees; such apprehensions might

not be present for younger employees, because Mensah et al. (2018) show that the psychological construct and talent of employees in parastatals and the banking sector are comparable. Although Yeo et al. (2014) do not emphasise that the positive attributes of the respective constructs could alleviate the negative attributes of respective or different constructs in influencing knowledge-sharing attitude, the lack of willingness of employees to share knowledge could be driven by managerial support into a knowledge-sharing attitude. Studies suggest that positive management support improves the willingness of employees to share knowledge. These findings suggest that the hierarchical management structure practised in South African parastatal organisations should provide employee support that could prompt the effective implementation of KMS. However, the present study showed that for effective implementation of KMS within South African parastatal organisations, organisational politics might not play a significant role, possibly caused by the structured, bureaucratic reward and promotion systems.

6.15. Chapter Summary

The closed-ended questions were coded and analysed through correlation analysis and regression analysis. The research questions were interpreted in terms of the acceptance and rejection of the hypothesis that was considered. The first hypothesis that "Attitudes of people will always not significantly affect the EKMS in parastatal organisations" was *rejected*. The rejection of the first hypothesis indicated that the attitude of people is an important attribute for driving effective KMS within a parastatal organisation. Hence, other parameters such as empowerment and delegation would not be sufficient if the attitude of people toward effective KMS remains neutral. The second hypothesis that "A positive organisational culture will not always be positively related to the EKMS" was *rejected*. The rejection of the second hypothesis indicated that public organisations such as parastatals should practise a positive organisational culture for effective implementation of a KMS. The third hypothesis that "Organisational politics (such as effective leadership) will not always be positively related to the EKMS in a parastatal organisation" was *accepted*. The acceptance of the third hypothesis reflected that flawed leadership or effective leadership without other aspects of employee satisfaction could impede effective EKMS**.** The fourth hypothesis that "People, organisational culture, and organisational politics will interact with each other in impeding EKMS" was *accepted.* The acceptance of the fourth hypothesis substantiated the first and third hypothesis,

which postulated that people's attitude and people management are influenced by organisational culture and organisational politics that drive effective EKMS.

As the p-value of the regression model's intercept was less than 0.05, it was assumed that there could be other non-technical constructs apart from those considered in the regression model to have influenced the KMS construct. The non-technical constructs of people, organisational culture, and to a lesser degree organisational politics either independently or in association with each other were found to influence KMS. However, the regression model's fit was poor, as only 29.7% and 29.2% fluctuations in the dependent variable (KMS) in the sample and population could be explained by the fluctuations in the magnitude and direction of the independent variables (non-technical aspects).

The variable organisational culture was moderately associated with the dependent variable, effective knowledge management, with Pearson's correlation value being 0.52. The only dependent variable concerned with effective implementation of a KMS was knowledge management. The value of R-square in this study was 0.30, indicating that the independent variables influenced 30% of the dependent variable. According to Huettner (2012), this R-square suggests a poor fit for the developed linear regression model.

The non-technical aspect of people significantly affects the effective implementation of a knowledge management system. Organisational culture also has a significant influence on the effective implementation and use of a KMS. Pearson's correlation value of 0.52 suggests that there is a moderately strong relationship between the variables, as Pearson's coefficient falls between 0.00 and 0.70. These findings were justified by the beta-coefficient of the regression model, which shows that such a relationship is not only moderate but also non-significant. People and organisational culture significantly predict KMS. Organisational politics do not significantly predict KMS.

The findings of the primary data analysis were substantiated by secondary data analysis, which showed that people, politics, and culture could individually influence people-related attributes (which is primarily the knowledge-sharing attitude or job attitude). Once such attributes are inculcated in the employees, it would lead to superior KM practices and knowledge-sharing behaviour. However, the secondary data analysis also challenged the hypothesis that a positive organisational culture might not be a significant driver of KM practices unless the knowledge-sharing attitude of employees is ensured in such

organisational culture. On the other hand, the present study also challenged the secondary data pertaining to the positive impact of organisational politics on KM practices. The present study showed that organisational politics were unrelated to the effective implementation of KM practices. Such observations were supported by the fact that the parastatal organisation X had more negative attributes of politics compared to its positive attributes. For this reason, the positive effects of politics were not realised for effective KM practices in the referred case study, unlike what was observed in secondary data analysis.

CHAPTER 7: DISCUSSION AND CONCLUSION

7.1. Chapter Introduction

The previous two chapters of this document concentrated on analysing the qualitative and quantitative data derived from primary and secondary data analysis. The present chapter discusses the study's findings in light of the provided evidence in terms of KM practices in the public sector and private organisations. The chapter discusses the unique challenges and opportunities concerning implementing KM practices in a South African parastatal organisation. The chapter concludes from the salient points that emerged from the findings and their discussion. This section is followed by the study's limitations regarding its reproducibility. Finally, the chapter sheds light on future research directions and recommendations to improve KM practices in South African parastatal organisations.

7.2. Findings and Discussion

The present study focused on the independent influence and relationship between the people-linked attributes as well as the interrelationship of the three selected aspects on the implementation of KM practices. The research question that was explored in this study was "Which non-technical aspect/s such as people, organisational culture, and organisational politics significantly predict the influence of successful implementation of a KMS in parastatal organisation in South Africa? The study involved primary data analysis obtained through a case study approach conducted in one parastatal organisation of SA. The secondary data analysis was based on evidence-based literature of white papers published in any industry sector. The research questions led to four hypotheses that comprehensively addressed the research question.

The concept of knowledge management is not new to SA's private or public sector. In Southern Africa, KM can be traced back to the 1960s when the Rhodesian Railway Corporation implemented various KM practices to solve problems related to employees and business operations' rigidity, and when they tried to address their aim to enhance cost-effectiveness and managing time constraints. However, the manner in which KM services were implemented, and whether such implementation was efficient, effective and sustainable

remained debatable, raised questions regarding the various leadership theories and employee engagement. These queries also prompted researchers to explore the ways KM was implemented in public sector organisations.

KM is understood to create, acquire, capture, share, and use implicit and explicit knowledge to enhance organisational learning and productivity. KM is recognised as the primary intellectual capital of any organisation. It is contended that KMSs should be designed in such a manner that they do not only form the knowledge asset of an organisation, but also support employees and communities of practice, and focus on different areas of knowledge and expertise that connect employees, and people to the organisation. Therefore, effective KM practices are referred to as identifying, utilising, nurturing, sharing, fostering, facilitating, transforming, and managing knowledge that pivots around the employees' skills in alignment with the organisation's vision and mission.

These findings suggested that on the one hand, people within an organisation are the major stakeholders of effective KM practices. On the other hand, the organisational culture and organisational politics provide the environment and opportunity for people to share their knowledge. Unless the employees or leaders in an organisation are motivated to adopt, apply and use knowledge-sharing practices, it will remain difficult for such organisations to ensure a sustainable environment for KM to create organisational resilience and productivity. Although various studies have explored the role of people, organisational culture, and organisational politics in the private sector, there was limited literature available regarding the KM practices in public sector organisations, including parastatals.

Most previous studies highlighted that KM practices were ineffective in the public sector and parastatal organisations (Karamitiri et al., 2020; Yoon et al., 2020; Shahin et al., 2019). One of the primary reasons for ineffective KM practices in these organisations was the lack of committed leadership, and the employees' poor attitude toward sharing their knowledge or even recording their knowledge in official systems. In addition, the nature of specific jobs and the organisational culture in a parastatal (bureaucratic systems and records) acted as barriers regarding the efficient and practical implementation of KM practices within the parastatal organisation.

The present study explored the influence of different constructs (people, organisational culture, and organisational politics) in implementing an EKMS within a large South African parastatal organisation. The study was based on a case study approach, and explored different hypotheses based on the constructs and their impact on KM practices.

7.2.1 Impact of employees' attitude on EKMS practices

The first hypothesis contended that employees' positive attitude might not always be enough to lead to the effective implementation of KM practices in a South African parastatal. This assumption was grounded on the concept that employees' positive attitude might become undermined by a negative organisational culture, and detrimental or over-bearing organisational politics (as well as government interference). The people-related factors depicted that there were positive and negative attitudes related to the effective implementation of KMS in a parastatal organisation.

Organisation X had been experiencing a number of operational challenges in the past that were still present to date, and there had been a number of employee protests/unrests, leading to the assumption that if there was a lack of employee motivation and no continuous employee development, training or empowerment, then such employees also would not support an effective KM implementation (Hasani and Sheikhesmaeili, 2016). Findings indicated that employee development or empowerment positively correlates with the sharing of knowledge. A lack of employee development, training or empowerment also often correlates with the challenge of technical deficiencies (no funding available for an upgrade of systems) and poor or absentee leadership. In such circumstances, KM projects were not timely completed due to inadequate follow-up, insufficient staffing numbers, a lack of experienced staff, and delays in fiscal allocation for KM infrastructure and implementation (Yin, 2016). Findings indicated that relevant employee training and empowerment practices positively influence the sharing of knowledge and the implementation of effective KM systems. On the other hand, problems arise if an organisation's employees experience any job ambiguities, and where internal working structures are unclear. These challenges indicate that inappropriate employee deployment could also lead to poor acceptance and implementation of a KM system.

The present study and the evidence regarding the importance of people in the successful implementation of a KMS suggested that circumstances where employees are less engaged in an organisation and exhibit low job satisfaction, and there is poor leadership and some political interference, this could negatively correlate with the goal of an effective KMS implementation. The study also showed that employees' attitudes were positively related to the effective KMS implementation.

Probably caused by the different work ethics found in a parastatal (not profit oriented, not working to tight deadlines, and increases and promotions being given according to tenure and not output efficiency), many participants in the study claimed to find it difficult to find external job opportunities with similar or better fringe benefits and working conditions. This seemed to lead them to accept that they had no choice other than to remain with their current employer, and accept the organisation's demand for knowledge sharing. This led to the positive correlation of a lack of external job opportunities with the effective implementation of KMS in parastatal organisations.

Problems arise in many organisations based on poor formal communication between employees and management. Conflicts can be generated by the lack of appropriate, timely, and clear communication; this will also reduce an organisation's efficiency, productivity, and the whole work environment. Failure to resolve these problems timely can affect the achievement of the organisation's business objectives, its profits, and its reputation. It is the responsibility of the leadership to recognise any communication challenges at an early stage, and then to intervene, and improve the communication flow.

While the role of people-related factors and their influence on the meaningful use of KMS is also put forward by Karamitiri et al. (2020), who state that knowledge is a valuable resource for personal growth and opportunities created for employees, Sanguankaew et al. (2019) state that knowledge creation and transfer increase with employees' interactions, and their cooperation to ensure the KM sustainability. It was interesting to note that the people-related factors that influence the effective adoption and implementation of a KMS in the examined parastatal included employees' request for less supervision and more autonomy, despite their complaint having been lodged that management did not interact often enough.

7.2.2. The influence of organisational culture on effective KMS implementation

The second hypothesis considered in this study was, "A positive organisational culture will not be positively related to EKMS." The motivation behind this hypothesis was triggered by the findings of a study conducted by Li et al. (2014), which shows that network centrality, the strength and density of these networks influence the knowledge transfer between employees, and between employees and the organisation through the hierarchy. These networks operate within organisations, but also with and through external contacts. Positive internal networks enhance the organisation's ability to achieve effective communication, knowledge sharing and productivity.

Quratulain et al. (2019) report that an organisation's overtly bureaucratic structure will negatively influence knowledge sharing. A bureaucratic environment is very often found in large organisations and particularly in parastatals that are influenced by their major shareholder, government. Studies suggest that organisational culture and organisational politics tend to influence the effective implementation of any knowledge sharing by modulating employees' knowledge-sharing attitudes (Yeo et al., 2015). The role of organisational culture in driving employee attitude has already been shown by other studies (Karamitiri et al., 2020; Carolissen et al., 2018). Based on the findings of this study, it was inferred that a positive organisational culture is very important, although it might not always automatically lead to the effective implementation of KMS, because some individuals may still have a negative orientation toward knowledge sharing, particularly if they feel that their personal leverage is based on their knowledge and thus providing them with a competitive advantage. Thus, while a positive organisational culture enhances the chances of EKMS adoption and implementation, and a positive people-orientation toward EKMS implementation might be present in an organisation, these two positives can still be impaired if organisational politics are not favourable, which could reduce the employees' intention to share their knowledge.

The present study showed that employees' perceived lack of external alternative job opportunities was correlated with their (perceived forced) motivation to share their knowledge, as they saw no alternative employment option for themselves and thus wanted to be seen to be compliant with their current employer's requirements. While the heuristic knowledge held by the employees and the sharing thereof should be part of the organisational

culture, acknowledging this fact does not always ensure the effective implementation of KM practices across the organisation. For example, when older employees retire from the parastatal organisation, it is seldom considered that they hold important information and knowledge that should have been recorded or shared with younger employees, therefore leading to a significant gap in knowledge (which was based on long experience) in the parastatal. Whenever retiring employees shared their experiences with juniors, it tended to take place only through unstructured methods and on informal platforms. However, this could also be due to older employees being less comfortable with new digital systems.

Although the detailed correlation analysis of people-related attributes showed that positive people-related attributes had a positive and significant correlation with the effective KMS implementation, some negative people-related characteristics were also correlated positively and significantly with the effective implementation of a KMS. These findings suggested that the organisational culture or the organisational politics had played a role in modulating the negative people-related attributes so that the concerned stakeholders felt forced to share their knowledge. Yeo et al. (2019) suggest that employees are more likely to share their knowledge effectively if their knowledge-sharing attitude is improved through coaching, training or rewards. However, the present study showed that the lack of relevant training was a negative factor, but it did not impede the KMS implementation. This finding suggested that other organisational culture attributes might have been perceived to be more influential for the effective KM implementation. The case study also showed a lack of management/employees interaction, which might have led to employee empowerment by default. Carolissen et al. (2018) show that employee empowerment through appropriate and relevant training and coaching creates a significant and positive organisational culture for driving KM.

The importance of different tenets of organisational culture in influencing KM is also described by Halim and Ahmad (2019). The authors state that all managerial innovations and dimensions, organisational learning in terms of information acquisition, behavioural parameters, and cognitive parameters influence a positive organisational culture (Halim and Ahmad, 2019). Halim and Ahmad (2019) also state that resource-limited organisations are better equipped to implement organisational culture innovations through people-orientation and organisational politics. In this regard, the findings were aligned with the present study, which also showed that management (a negative attribute of organisational politics) did not directly influence the effective implementation of KMS. The positive organisational culture

found in this specific parastatal included job security, less job stress (no profit motive, no tight deadlines, guaranteed promotion based on tenure, and a range of fringe benefits), and even the fact that management were often absent.

7.2.3. The role of organisational politics on the effective KMS implementation in South African parastatal

The third hypothesis examined in this study was "Organisational politics will not be positively related to EKMS in parastatals". The motivation for this hypothesis was grounded on the observations made by Mass-Machua (2014), who states that there is a positive relationship between leadership and EKMS implementation, but who also states that leaders on their own cannot dictate the relationship between organisational politics and KMS implementation. The present study depicted that while organisational politics did not influence the effective implementation of a KMS, the beta-coefficients for the attributes related to organisational politics suggested that some attributes were negatively associated with implementing a KMS, while others were positively associated with the effective implementation of a KMS. This is an essential corollary, because parastatals are influenced by external politics (government being the major shareholder) as well as organisational (internal) politics.

Therefore, the present study showed that the negative attributes of organisational politics might have interacted with the positive qualities of organisational politics in influencing the implementation of a KMS. The assumption stems from the observation that organisational politics were not significantly correlated with EKMS ($p > 0.05$). Moreover, the literature suggests that effective leadership (a feature of organisational politics) improves knowledge sharing, while ineffective leadership impedes knowledge sharing, especially for sharing tacit knowledge (Obrenovic et al., 2020).

These findings suggested that negative organisational politics could sometimes negate positive organisational politics on implementing EKMS, at least in parastatal organisations. As evidenced in the present study, negative organisational politics within the parastatal included indifferent or ineffective, and often absent leadership.

7.2.3.1 The role of leadership

Singh (2008) referred to the importance of the appropriate leadership style applied by management to achieve the appropriate organisational culture. It should be noted that a supportive leadership style was significantly and negatively related to the implementation of a KMS. In contrast, a delegating leadership style was significantly and positively associated with knowledge management in organisations. Although the effect of a specific leadership style on KMS was not reflected in the regression model of the present study, there were comments made by participants that the leadership style of the researched organisation might have negatively influenced the implementation of a KMS by mediating people-related factors and the organisational culture. However, managers' limited hands-on control or lack of appropriate and timely managerial interventions, a lack of coaching and training, and the lack of incentives for adapting innovations will impede the effective implementation of a KMS within the parastatal.

Organisational politics that are believed to discriminate against individuals (irrespective of whether they are factual or not) based on perceived lack of a pay increase or a promotion could lower employees' morale in some organisations. However, the study showed that the pay and promotion policies in the parastatal and the effective implementation of KMS were positively and significantly correlated. The finding was not surprising because most federal structures or semi-federal structures (Western Cape Government) have guaranteed seniority increments and promotions. Such policies are different for private sector organisations, where the payment structure is correlated with the employees' performance. This does not apply in parastatals.

However, unless the management in parastatal organisations can exhibit competent leadership, it will not translate into effective KM implementation within such organisations. Shahin et al. (2019) endorse the liberal form of organisational politics related to learning and KM. These include career advancement policies, recognition of employees, enhanced empowerment and situational leadership, attainment of personal and professional goals, the reward for successful implementation of a policy, and enhancing the employees' self-worth and treating everybody with respect. While these factors are essential in the private sector, as they form the basis of assessments and rewards, they are not applied in a parastatal organisation, as depicted in the qualitative results and statements made by participants. For

example, the present study showed that if employees were to be allowed to apply innovation and share their ideas without fear of rejection, it could lead to a more effective KM implementation. On the other hand, as innovation and autonomy did not lead to a reward, most employees did not go beyond what was demanded of them. Also, employees shared that they were not offered any relevant training or coaching to enhance their knowledge base and that there was no manager or resource person responsible for enhancing their job competency.

Shahin et al. (2020) suggest that there is a strong correlation between successful managers and the appropriate use of organisational politics, because organisational politics ensure that a variety of voices are heard within an organisation, which could ultimately benefit the organisation. While organisational politics is not all about ensuring job satisfaction, loyalty, or the endorsement of positive organisational values, and thus not improving an organisational culture, there was a significant and positive correlation between factors such as "Who you know and how much you are liked carries a lot of weight in this department," and the effective implementation of a KMS within parastatal organisations.

7.2.4. The combined influence of people, organisational culture, and organisational politics on KM implementation

The fourth hypothesis in this study was “People, organisational culture, and organisational politics interact with each other in hindering KMS.” The motivation for Hypothesis 4 was based on the findings by Erhardt (2011). The author shows that teamwork or group effectiveness is not always required for the effective implementation of a KMS. Hendryadi et al. (2019) state that there is a contradictory relationship between organisational culture, organisational politics (empowering leadership), and a knowledge-sharing behaviour. The regression analysis supported the hypothesis, because all three attributes together influenced KM ($p < 0.01$), while the factor organisational politics on its own did not play a significant role. The significant relationship between the three features and KM could be explored based on the trait theory (Yoon, 2020). Knowledge management is more people-centric, as the extra tacit knowledge can be captured by using experts, and can be transformed into a specific experience. Knowledge is a human asset and an organisation’s asset base, which contributes to the actual strength of and benefit for an organisation, and thus is a key for attaining a competitive advantage.

The qualitative part of the study also established that many departments do not want to have to deal with multiple systems. The lack of an effective connection or standardisation between the various departmental systems within an organisation is a problem faced by many organisations. Thus, the organisation will have to find an approach to departments effectively interacting with each other, as separate systems and separate meetings waste time and do not address the parastatal's strategies. Interaction between different departmental systems can mitigate or eliminate the challenges experienced by some departments, which could extensively enhance the interdepartmental decision-making system. In business processes, the lack of system knowledge in specific specialisation areas, and a lack of recorded information or documentation is another big challenge. This highlights that many organisations, particularly also SMEs, do not fully understand the benefits of an efficient knowledge management system (Carmen and Alexandra, 2012).

As per the trait theory, individuals express their specific characteristics according to trait-relevant situational cues, which operate at the social, organisational, and task levels. Yoon (2020) highlighted that these levels do not exist in isolation, but that these levels interact and modulate each other to develop a holistic environment that influences the individual's behaviour. In most instances, organisational politics impair employees' commitment, their job performance, and their organisational citizenship behaviour (Yoon et al., 2020). The study showed that people's negative attributes become more prominent if there is high uncertainty at social and task levels. A negative organisational culture or interference by organisational politics could have an impact on employees' motivation regarding the implementation of a KMS or even any knowledge sharing. Shahin et al. (2020) also highlight that organisational politics depend on the causes and consequences, and whether they are found to work constructively or destructively. The present study showed a positive relationship between the parastatal's structured and guaranteed pay and promotion policies, and the implementation of a KMS. This finding endorsed that negative organisational politics might not impede the effective implementation of a KMS in a parastatal organisation. However, low levels of motivation, poor job satisfaction and poor performance by employees can hinder the effective implementation of KM practices in the parastatal. Since employees' attitudes (people factor) and organisational culture played a positive role in the practical implementation of the parastatal's KM practices, and organisational politics did not correlate with the data in any significant manner, it could be inferred that positive employee attributes

and a positive organisational culture could also overcome any potentially negative characteristics of organisational politics.

Fully understanding and moderating organisational politics are critical leadership attributes that can positively influence an organisation and improve employees' efficiency. The study showed that certain organisational cultures that are positive could modulate some potentially negative organisational politics. Shkoler and Kimura (2020) state that a high job engagement does not necessarily indicate that workers have a favourable attitude toward their job. Instead, these employees feel compelled to be engaged with their jobs (and knowledge sharing) to showcase to their company and the senior leadership team that they are committed (fear based) and thus, do not risk their jobs.

7.3. Outcomes and Deliverables for the Present Study

The present study's findings challenged the concepts of positive and negative attributes related to people, organisational culture, and organisational politics, because specific negative features related to people positively influenced the effective implementation of KMS within a parastatal. Hence, it could be inferred that various linkages between people, organisational culture, and organisational politics influence the adoption and successful implementation of a KMS in a parastatal organisation.

Employees advocated that structured, standardised approaches and incentives (particularly for innovation) could motivate them more to share their knowledge, because currently, knowledge sharing did not affect their appraisals either positively or negatively. However, some employees were unwilling or unable to accept new technologies for KM practices, while employees' negative attitudes still led to effective KM practices as long as the organisational politics and culture were appropriate and solutions were easy to apply and practical.

Regarding the need for innovation, the study highlighted that KM initiatives (the recording and sharing of knowledge by more experienced employees with those who still need to gain that experience and knowledge) within the organisation can add real-life experience and knowledge regarding business targets with well-tested customer solutions that can be escalated to similar circumstances. This can save organisations significant development time

for value-added services or products, allowing more time to build better customer relationships, and enabling departments to work on new service or product prospects. It can also shorten the client involvement or solution development cycle, and encourage more staff participation by encouraging their contributions and customer visibility, thus improving customer service. Having a positive customer relationship and focusing on value creation by optimising the time saved would allow an organisation to develop innovative customer solutions that can also be made available for organisation-wide use, regardless of the location of the department or the customer. This, in itself, can create new income streams for a parastatal organisation.

In instances where organisations have to use consultants, knowledge management initiatives can help save consulting fees, as the recorded and shared knowledge and analyses of external consultants' reports should be made accessible to all appropriate staff, wherever possible. Besides consultants' reports, knowledge management can offer similar benefits to customer organisations by allowing the networking of their frontline employees from different locations to contribute and enhance their capabilities. This would assist the organisation and its employees to appreciate any changes in market trends, technology developments, and customer requirements, and ensure immediate and appropriate responses.

Knowledge management projects should ensure that organisational memory is always current, and up-to-date. Such knowledge is usually provided via senior staff, and this approach could be used to make older, more experienced employees feel more valued, as they would provide such input to senior staff members, and thus they would feel that they were contributing something important.

Knowledge management tools offer the necessary competencies to system data stored inside the organisational memory, and this makes it essential for the organisation to undertake expertise-sharing activities for managerial and expert workers. They will have to help mine and filter the statistics, while identifying incorrect, obsolete or irrelevant information. As a result, the organisation’s knowledge management team could become more competent, and the organisation could become more powerful by increasing its efficiencies, enabling profitability, and more texture in decision-making.

7.4. Strengths and Limitations

This study employed a mixed methodology approach to evaluate the employees' subjective responses of a large parastatal organisation. The study helped explore the cause-and-effect relationships that prompted or impeded the effective KM implementation in an in-depth manner. Thus, the findings of the study were both conclusive and comprehensive. The study's primary strength was that it substantiated the conclusions drawn from the quantitative questions with a detailed qualitative analysis. The qualitative part of the study helped to identify the causal relationships that remained unidentified from the quantitative analysis.

The major limitation of this study was that it was based on a single case study approach. Therefore, the participants' subjective responses might be biased, based on the organisational culture and politics prevailing in the respective parastatal organisation. Thus, the reliability and reproducibility of the findings of the study to other parastatal organisations might be challenged. Further, the quantitative analysis did not reflect whether the attribute of a user-friendly ICT system is a significant determinant of effective KM practices in parastatal organisations. Instead, the closed-ended responses depicted that the employees expressed a lack of training in the organisation.

While the qualitative findings helped to relate that the lack of a user-friendly ICT system demanded the need to train the parastatal's employees, this qualitative finding regarding employee training on ICT systems as a determinant for the effective KM implementation cannot automatically be extrapolated to other parastatal organisations. Each organisation would have different types of ICT systems and employees' expertise in IT systems. One of the major strengths of this study was that it undertook a correlation analysis between each of the constructs' positive and negative attributes. Such a correlation analysis helped identify how the positive qualities and negative characteristics of different constructs influenced each other and the EKMS implementation.

However, a major limitation that emerged from this study was that it failed to identify any moderating effect of people, organisational politics, and organisational culture on the practical implementation of KM. Previous authors had shown that various moderating variables, for example, a knowledge-sharing attitude among employees influences the various

factors and the practical implementation of KM practices. It will still be necessary to identify the moderating variables.

Another limitation of the study design was that the sampling distribution was not tested for normality. As a result, the responses of the participants on specific questions could have been skewed. Skewed reactions of the participants could have reduced the reliability and validity of the study. Moreover, a power analysis was not undertaken to evaluate the sample size and the research's reproducibility.

One of the significant limitations of this study was that the positive and negative attributes of the survey questionnaire's constructs were not standardised. As a result, the study's findings could be limited to the parastatal organisation considered for the case study. These assumptions were substantiated from the coefficient of determination (R2) value of the regression analysis below 30%. Such matters of the coefficient of determination meant that the regression analysis (for the relationship between the dependent and independent variables) estimated in this study could not be extrapolated to other organisations. Such findings further endorsed the need for surveying in a multi-centric manner, involving different parastatal organisations. However, the low coefficient of determination value reflected that the regression model was specific to the parastatal organisation considered in this study.

7.5. Future Directions

Future studies should be considered as cross-sectional surveys to enhance the reliability and reproducibility of the findings depicted in the present case study. Future studies should also include other psychometric tools to evaluate employees' and management’s attitudes in place of structured questionnaires. The evidence suggested that effective leadership and motivation could improve KM practices in parastatal organisations (Yoon et al., 2020; Shahin et al., 2019). Therefore, future studies should explore the leadership styles that would be most suitable for improving the effective implementation of KM in parastatal organisations.

Future studies should also examine in a quantitative manner the way organisational politics (and politics having an impact from government’s influence), the organisational culture, and people interact with each other in influencing the implementation of a KMS. The respective

interaction and interrelationship would streamline organisational operations or the organisational culture in South African parastatals. The current focus of KM in organisations in Africa is to ensure its meaningful use for business performance. Byukusenge and Munene (2017) report that poor implementation of KM in parastatal organisations and the lack of comprehensive compliance is a significant cause for their poor performance and lack of sustainability. Such findings also hold true for the organisation considered in the present study. Byukusenge and Munene (2017) report that organisational innovation could play a positive and significant role in influencing the effect of KM on business performance. Hence, future studies should explore the impact of organisational design in mediating the effective implementation of KM and its translation into sufficient account in other parastatal organisations. However, the bureaucratic nature of most parastatals and the different work ethic caused by job security, guaranteed pay structure and promotion based on tenure will have a strong influence on individuals' motivation to become more innovative, as there will not be a performance-linked reward system overriding the current structure. Thus, the people factor and the organisational culture will tend to override any potential development need to move into the digital era and stressing efficiencies, profits, and innovation.

Future studies should aim to identify the leadership styles and leadership attributes that would be most effective in parastatal organisation in increasing EKMS, especially if organisational culture and organisational politics impede EKMS. Such attributes would help to define the job responsibilities and selection criteria of leaders in parastatal organisation. This is particularly important, as the present study highlighted the absentee role of management within the bureaucratic rules and regulations set for employees.

7.6. Conclusion

The present study reflected that the implementation of EKMS practices in parastatal organisations differs from KM practices in private sector companies. The significant difference is that in the private sector, innovation and the efficient implementation of KM practices tend to be acknowledged and rewarded. In parastatals, there is no profit motive for employees or the drive for better time management or efficiencies, as salaries are guaranteed and promotions are linked to tenure. Simultaneously, there is no additional recognition of the employees if they try to apply innovation, which would encourage them to share tacit knowledge with their peers or motivate them to perform better than others. Such differences

tend to affect KM practices, and could be attributed to the organisational culture. KM practices in parastatals and public sector organisations lack the appropriate professionalism and structure that tend to impede their effective implementation. Hence, it was concluded that people-related attributes (whether positive or negative) influenced the KM implementation within parastatals.

The present study also showed that a positive organisational culture tends to influence the effective KM implementation in parastatal organisations, while organisational politics did not play a significant role. The findings contradicted previous studies' observations, which showed that both politics and culture influence the KM practices by influencing the employees' knowledge-sharing attitude. A detailed investigation reflected that positive organisational politics certainly favoured effective KM practices, while negative organisational politics tended to impede the KM implementation. Since the positive and negative organisational politics are co-existent in parastatal organisations, the net effect of politics on KM implementation in South African parastatals was non-significant.

The qualitative responses depicted that the parastatal failed to manage the KM project effectively. Inefficiencies were attributed to negative people-related factors and incompetent organisational matters such as training, supervision to enable improved performance or mentorship. Also, low KM project budgets in parastatal organisations impede the possibility of rewards and the introduction of state-of-the-art ICT systems that could have driven KM practices. The information provided to the employees regarding the content and context of sharing knowledge is often decentralised and ambiguous. Hence, it is not surprising that the knowledge sharing and KM integration is still not effective in parastatals.

7.7. Recommendations

The present study examined what led to effective KM practices in a parastatal organisation in SA. Different proposals were planned for ensuring the effective KM project implementation.

Implementation: KM practices should be made mandatory and be implemented through well-planned, tested and structured approaches in a parastatal. The leadership team should ensure that user-friendly and meaningful ICT systems are installed to foster such KM practices and systems. All users of the system will need to be fully trained. In this regard,

employee profiling for assessing altruistic traits and willingness to share knowledge could be measured through psychometric tools. Based on employee profiling, organisational culture factors could be designed to ensure the exchange of social capital (Obrenovic et al., 2020).

Organisational politics: These should involve influential leaders who will have to ensure that employees will be motivated and trained for effective KM practices (Mass-Machua, 2014, Obrenovic et al., 2020). Organisational politics should also look into the career growth and compensation of the employees to ensure their engagement with the organisation (Bindu, 2011), but at the same time consider the role of carefully selected leadership to achieve such motivation through depicted role modelling.

Organisational culture: A positive and innovative organisational culture should be instilled to ensure an inclusive environment, where older and more experienced employees would be encouraged to share their knowledge and experiences, while younger and more techno-savvy employees would be expected to share their technical skills. Organisational culture plays a role in integrating employees with each other and the management (Carolissen, 2018)

Rewards: Employees should be rewarded and appraised based on their implemented KM practices as well as their overall performance. Such reward does not need to negate the current payment system or promotion system, but could be added to the structure so that innovation and finding solutions will be encouraged. Sajeva (2014) shared that both extrinsic and intrinsic rewards encourage knowledge sharing across employees, but the rewards should be employee and situation specific.

Leadership training: A significant initiative should be taken to improve leadership skills across senior management. The appropriate leadership style should be encouraged to motivate employees to engage in the effective implementation of a KMS. The concerned stakeholders should be subjected to leadership style profiling to enhance their effectiveness. Leaders should understand the factors that drive the sharing of tacit and explicit knowledge in employees, and orient their leadership style to encourage such knowledge that would ensure increased organisational productivity (Obrenovic et al., 2020).

Strategies: The senior leadership team of the parastatal should devise the appropriate strategies to monitor that no partiality or negative politics are interfering with the added

system of providing rewards and recognition for engaging in effective KM practices. Employees should also be shown the specific beneficial effects of KM practices on their own routine job functions. All relevant employees should be provided with the opportunity to be trained in the correct use of and application of the KM system. Negative organisational politics should be discouraged to enable equity among employees (Cacciattolo, 2015).

7.8 Contributions

This study contributes to the literature on the facilitators and barriers of the effective KMS implementation in a parastatal organisation in SA. The novel finding of this study was that organisational politics might not significantly influence the effective implementation of a KMS. The observation could be explained from the theories of knowledge sharing, which mandate that trait theory and social engagement theory might interact in influencing knowledge sharing across employees of parastatal organisation. This finding differs from the general perception that politics in parastatal organisations impede work processes. Such assumptions were substantiated by the report that the parastatal organisation considered in the study appointed a new leader to prevent vandalism of the KMS and ensure knowledge transfer for its smooth operations. Another contribution of this study was the novel finding that organisational politics in the parastatal actually resulted in absentee management and reduced interference by management with employees.

The study was the first study that explored the positive and negative characteristics of politics, people, and culture that influenced each other to impact KM practices in a parastatal organisation. Public sector organisations in SA will be able to use the study's findings to understand the facilitators and barriers for implementing effective KM practices. The research could also help develop incentive schemes or appraisal systems for employees who play a role in implementing KM practices across South African parastatals.

In SA's public service, the Department of Public Service and Administration (DPSA) is the national coordinator of KM. Its responsibility is to produce − through the sub-directorate of research, learning and knowledge management (RLKM), an answer to the requirement for knowledge management and for service delivery to be implemented. Their primary challenge is to work on the draft KM framework, which changed into being drafted with the aid of the DPSA and the KM method, and became drafted by means of Government IT Officers

(Council) Knowledge and information (management) (GITOC KIM). The DPSA then agreed with the Department of Communications (DOC) to introduce and market the benefits of KM countrywide. It will be interesting to see whether an effective KM implementation will have any major impact on the current HR approaches or whether the public sector will be forced to have parastatals becoming more geared toward efficiencies, profits and employee rewards based on performance.

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APPENDICES

App. 1: Request for Data Collection

DOCTORAL DEGREES BOARD
UNIVERSITY OF CAPE TOWN
Masingene Building,
Private Bag X3, Rondebosch, 7701
Tel: **+27 21 650 2202**
E-mail: **ddb@uct.ac.za**

13 October 2016

STRICTLY CONFIDENTIAL

Mr MJ Majavu MJVMLU001
MJVMLU001@myuct.ac.za

Dear Mr Majavu

APPLICATION FOR REGISTRATION AS A PhD CANDIDATE

I am pleased to inform you that the DOCTORAL DEGREES BOARD OFFICE has approved your admission as a candidate for the PhD under the supervision of Professor M Kyobe.

The University requires that you are registered for a minimum period of two years, provided you maintain unbroken registration and comply with the rules for the degree. If you first register for the degree after 1 May, you may not count the remainder of the year as part of the minimum prescribed period of study for the programme. Provided you have met with these requirements, the earliest date on which you will be able to graduate is therefore two years after your first registration. I would like to remind you that you must renew your registration every year, not later than the last day of February.

Senate has adopted a set of guidelines for supervision for the information and use of candidates and supervisors. A copy of this is attached and we hope it will be useful.

The rules for the PhD (copy enclosed) give the dates by which you must notify this office of your intention to submit a thesis for examination. Early notification alerts the DDB to prepare for the examination process by getting examiners nominated, approaching them and obtaining their agreement before your thesis arrives. When advising of intention to submit, include the following information - student number, full names, postal address, thesis title, department and name of supervisor/s where any supervisor is not in the same department or at another university please indicate this.

Please note that there is an upper limit of 80 000 words on the main text of your thesis. Any request to exceed this limit must be discussed with the supervisor and final approval must be obtained from the Dean.

We wish you well with your research.

Yours sincerely

Janine Isaacs (Mrs)
Doctoral Degrees Board Office
cc: Professor M Kyobe, Information Systems
FACULTY OF COMMERCE
Ref: CC042016
Attachment

Appendix 2: Ethics Approval Letter

Faculty of Commerce
Private Bag X3, Rondebosch, 7701
2.26 Leslie Commerce Building, Upper Campus
Tel: +27 (0) 21 650 4375/ 5748 Fax: +27 (0) 21 650 4369
E-mail: com-faculty@uct.ac.za
Internet: www.uct.ac.za
@Commerce_UCT **UCT Commerce Faculty Office**

12 June 2017

Mr Mluleki Majavu
Department of Information Systems
University of Cape Town

REF: REC2017/06/001

Dear Mr Majavu

Project: Non-technical factors for implementation of knowledge management systems in parastatal organisations in South Africa

Thank you for submitting your study to the Faculty of Commerce Ethics in Research Committee.

It is a pleasure to inform you that the EiRC has **formally approved** the above-mentioned study.

Approval is granted for the period of 12 months. Should you require an extension or make any substantial changes to the research methodology which could affect the experiences of participants, you must submit a revised protocol to the Committee for approval.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Your sincerely

SAMANTHA ALEXANDER
Administrative Assistant
University of Cape Town
Commerce Faculty Office
Room 2.24 | Leslie Commerce Building

Office Telephone: +27 (0)21 650 2695
Office Fax: +27 (0)21 650 4369
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Website: www.commerce.uct.ac.za<http://www.commerce.uct.ac.za/

App. 3: Letter of Approval from the Organisation

www.prasa.com

prasa

PASSENGER RAIL AGENCY OF SOUTH AFRICA

PRASA HOUSE
1040 Burnett Street
Hatfield
Pretoria

Private Bag X101
Braamfontein, 2017
T: +27 12 748 7000

Ref.: Research permissions/2017

TO WHOM IT MAY CONCERN

Permission to conduct research in the PRASA environment for academic purposes - Student: Mr Mluleki Majavu

Research / Thesis: ***"Non-technical factors for implementation of knowledge management systems in parastatal organisations in South Africa"***.

Permission is hereby granted to Mr Mluleki Majavu to conduct research at PRASA for academic purposes as part of his studies to complete a Doctoral Degree in Information Systems at the University of Cape Town, subject to honouring the Research Fellow Agreement:

"Confidentiality Agreement – for the purpose of conducting research in the PRASA environment and/or using Company information for research purposes"

Mr Majavu has signed the above Confidentiality Agreement with PRASA and agreed that the above research is for academic purposes only and that no part of the research will be published without written approval from PRASA.

Yours faithfully

Signature Removed

Sipho Sithole
Group Chief Strategy Officer
Passenger Rail Agency of South Africa
e-mail: sipho.sithole@prasa.com
Date: 23 February 2017

Directors: Popo Molefe (Chairman), Collins Letsoalo (Acting Group CEO),

Company Secretary:
L Zide

App. 4 Confidentiality Agreement form Case Organisations

www.prasa.com

Be moved

prasa
PASSENGER RAIL AGENCY OF SOUTH AFRICA

CONFIDENTIALITY AGREEMENT

- for the purpose of conducting research in the PRASA environment, or using Company information for research purposes

I, the undersigned

1. herewith undertake that all information disclosed or submitted, either orally, in writing or in other tangible or intangible form by PRASA, (its subsidiaries, business units, its employees, agents and/or consultants) to me, or made available to me, or details of PRASA's business or interest of which I may become aware of in respect of the research being done by myself for study purposes at University of Cape Town (University/College), to keep confidential and not to divulge to anyone either privately or publicly for which PRASA did not give written consent;
2. guarantee that I will apply the information, detail or knowledge in **clause 1** only for the purpose of my academic research;
3. indemnify PRASA against any claims that may be instituted against it, amounts that may be claimed or losses that PRASA may suffer in consequence of a violation by me of any provision included in this agreement;
4. agree that the provisions of this agreement binds me to PRASA, even if I cease to be a student, employee, representative or advisor of the University of Cape Town (University/College), depending as the case may be after ceasing to be such a person.
5. shall immediately disclose in writing all new information in my possession or under my care relating to the research, provided that such new information must have been developed during the course of the research relating to this agreement.
6. agree that PRASA will have a final say on whether my final work gets published, either in journals, university libraries or any arena where such work may be accessed either electronically or physically. I further accept that PRASA reserves the rights to put limitations on which parts of my work may be published, either in full or in sections. This clause is not applicable to the information that is in the public domain, and/or published in the Annual Reports.

App. 5: Cover Letter

01 June 2017

Request to conduct research and interview participation consent form

Dear Sir/Madam,

In terms of the requirements for completing a PhD Degree in Information Systems at the University of Cape Town a research study is required.

The researcher, in this case Mluleki Majavu, has chosen to conduct a case study entitled "**Non-technical factors for implementation of knowledge management systems in parastatal organisations in South Africa"**

The researcher would like to request permission to conduct this case study at your organisation. The objectives of the research are as follows:

- investigate the challenges in implementing KM systems for parastatal organisations in South Africa;
- explore best practice that can be deployed by parastatal organisations in South Africa to implement knowledge management systems;
- identify the challenges faced by parastatal organisations in the use of KM in order for knowledge to be shared in such organisations with the help of ICT;
- determine KMS influence on KM in parastatal organisations and
- generate and test a model that provide more insight into the complex interplay of all elements (human and non-human) which could be involved in or affect KMS implementation.

Your participation in this research is voluntary. All information will be treated in a confidential manner and used exclusively for the purpose of this study. No individual names will be recorded or published. You will not be requested to supply any identifiable information, ensuring anonymity of your responses. You can choose to withdraw from the research at any time for whatever reason, in accordance with ethical research requirements.

The data collection method will be questionnaire with a small group of the staff responsible for decision-making, management users of the system across all departments within the company. The questionnaire will be sent via email and will last 15 minutes. If you are willing to participate in this study, kindly sign the attached form and return to me at your earliest convenience.

Should you have any questions regarding this research, please feel free to contact me on 0732412034 or email: mlulekimajavu@gmail.com

Your participation in this study would be greatly appreciated, but is entirely voluntary.

Sincerely,

Signatures Removed

Researcher \ PhD Student,
(UCT)

Department of Information Systems

University of Cape Town

Email: mjvmlu001@myuct.ac.za

Department of Information Systems

University of Cape Town

Email: michael.kyobe@uct.ac.za

App. 6: Participant Consent Form

Research Participant Consent Form

I, _____, consent to participate in the research on "Non-technical factors for implementation of knowledge management systems in parastatal organisations in South Africa"

I am aware that participation is voluntary and that I may choose to withdraw from this study at any time, should I choose to do so.

_____ _____

Signature Date

App. 7: Questionnaire

Section a: Demographic Information

Gender ☐ Male ☐ Female

Age

☐ ≤30 ☐ 31–40 ☐ 41 – 50 ☐ 51 – 60 ☐ > 65 Prefer not to answer

Education

☐ Matric ☐ Diploma ☐ Degree ☐ Master ☐ PhD

☐ Other…

Section B: Organisational functions

Number of Employees in Organisation:

☐ ≤1000 ☐ 1000 – 10000 ☐ 10000-15000

☐ 16000 – 20000 ☐ 20000+

Department: ☐ Finance ☐ Marketing ☐ ICT

☐ Rail engineering ☐ Infrastructure ☐ Operations

☐ Other……

Role: ☐ Executive ☐ Senior manager ☐ Middle manager

☐ Employee ☐ Other (specialist)…….

Number of years you have worked in a parastatal (public) organisation (Length of service)?

☐ Less than a year ☐ 1-3years ☐ 4 -6years ☐ 7-10years ☐ above 10years

Section C: Importance of KMS implementation for the benefit of knowledge sharing and sources of information

2) How important is implementing knowledge management system in your organisation?

☐ Not important at all ☐ Not very important ☐ Important ☐ Very important

☐ Extremely Important

Section D:

Please answer each one of the following statements by making a cross under the correct number, where: 1= strongly disagree, 2 = disagree, 3 = agree to some extent, 4 = agree, 5 = strongly agree

	Strongly disag	**disagree**	**Agree to some**	**agree**	**Strongly agre**
People in the organisation	**1**	**2**	**3**	**4**	**5**
I feel that I have to do things on the job that are against my better judgement in this organisation (DA1)					
Feeling that you may not be liked and accepted by the people you work					
My job gets to me more than it should (DA3)					
I have too much work and too little time to do it in (DA4)					
Individualism should be avoided within organisation for achieving (DA5)					
I would not get the proper opportunity, if I left my current organisation(DA6)					
I am highly committed to serve my organisation (DA7)					

I have enough information to make good decisions(DA8)					
I see relationships at work matured(DA9)					
Culture in the organisation	**1**	**2**	**3**	**4**	**5**
When it comes to work-related activities, everybody puts in their full energy and creativity (DB1)					
Relationships and communications are not good with executives (DB2)					
Senior management develops strategies in conflict with the organisational culture (DB3)					
Senior management deals appropriately with cultural issues (DB4)					
The organisation's employees are valued for their individual expertise (DB5)					
I feel a "part of the family" at my organisation (DB6)					
I feel that I have too little authority to carry out the responsibilities assigned to me (DB7)					
I do not know what opportunities for advancement or promotion exist for me in this organisation (DB8)					
I am involved in the decisions in this organisation (DB9)					
The company is open to challenges, suggestions, and change (DB10)					
Employees can make suggestions about others' tasks (DB11)					
The organisation's employees understand the importance of knowledge (DB12)					
The organisation's employees can communicate not only with members of their own department, but also with members of other departments (DB13)					
Organisational Politics	**1**	**2**	**3**	**4**	**5**

People in this organisation are the first priorities (DC1)					
Since I have worked in this department, I have never seen either an executive or a manager coaching or training staff (DC2)					
There has always been an influential group in this department that no one ever crosses (DC3)					
When it comes to organisational strategy and promotion decisions, there is a clear direction aligned to the existing company policies (DC4)					
The pay and promotion policies in this organisation have are not applied politically-based (DC5)					
Employees are encouraged to speak out honestly, even when they are critical of well-established ideas in the organisation (DC6)					
Who you know and how much you are liked carries a lot of weight in this department (DC7)					
Effectiveness of knowledge management system	**1**	**2**	**3**	**4**	**5**
The organisation's employees use technology (ICT) to search for new knowledge (DD1)					
The organisation's employees use technology (ICT) to retrieve knowledge about its products and processes (DD2)					
The organisation's employees use technology (ICT) to access knowledge about markets and the competition (DD3)					
The organisation's employees use technology (ICT) to cooperate and communicate with fellow employees (DD4)					

Section E:

What challenges do the organisations have in the absence of an EKMS?

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If you are willing to participate in a short follow-up interview, then kindly state your name and contact numbers below and specify convenient time(s) and dates for such interview.

Name (optional)	
Contacts/email	Phone number: Email:
Best Time and Day	

THANK YOU FOR YOUR PARTICIPATION AND TIME.