Cape Peninsula University of Technology

THE SOCIAL DETERMINANTS FOR THE INSTITUTIONALISATION OF KNOWLEDGE SHARING IN A SELECTED ORGANISATION IN THE WESTERN CAPE, SOUTH AFRICA

by

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DECLARATION

I, Henri Vincent Ndjave-Ndjoy, declare that the contents of this dissertation/thesis represent my own unaided work, and that the dissertation/thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

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I wish to thank:

ABSTRACT

The aim of this study was to explore the social determinants for the institutionalisation of knowledge sharing within an organisation. Institutionalisation offers stabilising benefits and contributes to nurturing a culture of knowledge sharing. Systematic sharing of knowledge cannot take place unless there are procedures, policies and guidelines for knowledge sharing.

Giddens's concept of duality of structure was used as the theoretical lens.

Institutionalisation is considered to be rules that are shared and that recognise categories of social actors and their applicable activities or relationships (Barley & Tolbert, 1997). Challenges arise when knowledge sharing is not as efficient as it should be due to many constraints. One of them is inadequate procedures and policies for knowledge sharing. Systematic sharing of knowledge cannot take place unless there are procedures, guidelines and policies for knowledge sharing (Riege 2005). Sharing of knowledge cannot be effective if suitable procedures and processes are not in place (Riege, 2005:28-32).

The research used a mixed method approach and employed an interpretive case study methodology. A focus group was conducted from a qualitative stance, followed by a survey from a quantitative perspective with senior, medium and junior-level staff members working within the Development Information and Geographic Information Systems department of a selected municipality in the Western Cape, South Africa. The sample represents a hundred percent of the population being all sixty staff members for the DI & GIS department, from which seven were used for the focus group from the qualitative perspective and the remainder for the quantitative survey. For the qualitative side, content analysis was used to analyse data generated from the focus group, while a descriptive statistical analysis was employed to analyse the data gathered from the quantitative survey.

The findings suggest that organisational structure, policies, processes, corporate governance and technology are major enablers for the institutionalisation of knowledge sharing in an organisation. Management support and organisational culture were also recognised as social factors for knowledge sharing institutionalisation. New strategies for reinforcing efforts to nurture and invigorate the institutionalisation of knowledge sharing within an organisation were generated and presented as a general framework.

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GLOSSARY

Terms/Acronyms/Abbreviations	Definition/Explanation
ST	Structuration Theory
SOP	Standard Operating Procedure
ICT	Information and communications technology
IS	Information system
IT	Information technology
DI & GIS	Development Information and Geographic Information Systems

CHAPTER ONE: INTRODUCTION

1.1.   INTRODUCTION

Knowledge management is considered as one of the latest change management approaches in organisations (Bhatt, 2001). The primary objectives of knowledge management are to capture, store, maintain and deliver useful knowledge in a meaningful form to anyone who needs it, in any place and at any time within an organisation (Massingham 2014a:1077). Knowledge management is considered to be a critical success factor for organisational performance (Sokhanvar, Mattews & Yarlagadda, 2014). Knowledge is an important organisational asset. This is because business organisations have an inherent interest in using both the business knowledge owned by the organisation, and personal knowledge of their employees (Gao, Li & Clarke, 2008). Knowledge is, therefore, an important tool for organisations as it creates values that are sustainable over time (Gold, Malhotra & Segars, 2001:186). Knowledge management attempts to harness the knowledge of employees to create a collective memory of the organisation (Wiig, 1997:12-13). In order to facilitate the creation of an organisational memory, knowledge management includes the activities of capturing, storing, sharing and using of knowledge (Liu, Shang & Lai, 2015). However, knowledge sharing is a crucial component of knowledge management (Clarke & Rollo, 2001).

Knowledge sharing is the cornerstone of an organisation's knowledge management strategies (Riege, 2005:18). Over the years, however, knowledge sharing has become an area of concern (Jaegersberg & Ure, 2011). There are many factors reported in literature to impact on knowledge sharing, some of which relate to matters of institutionalisation. For example, a lack of procedures, policies and guidelines are reported to impact negatively on knowledge sharing (Lu, Leung & Koch, 2006). Knowledge sharing is important to knowledge management as knowledge management's goal is to improve or enable knowledge sharing, enabling the transfer of knowledge across units within the organisation (Yang & Wu, 2008:1130). Furthermore, knowledge management can only be sustained through continuous sharing, which is dependent on people (Twum-Darko & Harker, 2014:3). In order to enable knowledge sharing, employees need guidelines on how to share knowledge in an organisation. Procedures, structures and policies should be implemented in order to share knowledge effectively and efficiently (Riege, 2005:12-18). This, therefore, emphasises the need for institutionalisation of knowledge sharing (Barley & Tolbert, 1997:4-8).

1.2.   RATIONALE

1.2.1.   Background

The researcher was a Baccalaureus Technologiae (BTech) student in Financial Information systems, specialising in information systems. Students taking this course were exposed to many current topics of interest within the information systems discipline, one of which was knowledge management. A particular interest was shown in knowledge management because of its positive influence on an organisation's performance. After in-depth reading, it was discovered that the success of knowledge management within any organisation was contingent on knowledge sharing. It was also discovered that knowledge sharing is often seen as problematic because of a lack of guidelines on what to share and how to share, as well as the willingness of people to share. An issue related to knowledge sharing was the lack of an organisational culture for sharing knowledge. There is also a need for a systematic approach to sharing knowledge (Orlikowski, 2000). Institutionalisation plays an important role in enabling an organisational culture to share knowledge and providing a systematic approach to sharing knowledge, thereby enabling the effective and efficient sharing of knowledge (Twum-Darko & Harker, 2014). Institutionalisation is defined as "the recursive intertwining of practices that encourage the travel of ideas across a field and within individual organisations. Ideas are created, transformed and legitimized over time, and take on different linguistic and material forms across organisational settings" (Nielsen, Mathiassen & Newel, 2014:166). Institutionalisation, therefore in the context of this study, is the entrenchment of knowledge sharing practices. Not only does institutionalisation involve policies, rules and procedures, it also encompasses many other aspects of the organisation that could enhance knowledge sharing performance. This is what led the researcher to show an interest in institutionalisation as a means of addressing knowledge sharing problems.

1.2.2.   Problem Statement

Knowledge sharing is not institutionalised in most organisations. This is due to the fact that knowledge sharing cannot be effective unless it is institutionalised. Given the importance of structure and a culture for knowledge sharing, as well as the positive influence that institutionalisation can have on knowledge sharing, systematic sharing of knowledge cannot take place unless there are procedures, guidelines, policies and an organisational culture nurtured for knowledge sharing (Ruppel & Harrington, 2001; Mcdermott & O'Dell, 2003:76; Riege, 2005). Issues such as the lack of organisational culture for sharing knowledge, of social networking, and organisational policies can constitute barriers to knowledge sharing performance (Riege, 2005:29; Ke & Wei, 2007; Wang & Noe, 2010:117-119; Jaegersberg & Ure, 2011). The importance of organisational culture lies in its ability to have a direct effect on employees' knowledge sharing behaviour as well as an indirect effect through influencing managers' attitudes towards knowledge sharing (Wang & Noe, 2010). Institutionalisation is

important not only in terms of systems and structure, but also culture and the influence of management. In the same context, the lack of appropriate infrastructure supporting knowledge sharing, and formal and informal spaces to share impact the effective sharing of knowledge in an organisation (Riege, 2005:25-26). The challenge, then, is to explore the social determinants for the institutionalisation of knowledge sharing. Furthermore, institutionalisation should be considered from all perspectives to determine how knowledge sharing can be entrenched in an organisation.

1.2.3.   Research Objectives

Institutionalisation of knowledge sharing in an organisation is a social construct. As such, the aim of the research is to explore the interplay between the social factors that determine the institutionalisation of knowledge sharing in an organisation. Given the aim, the main research objective, therefore, was to determine the social determinants for the institutionalisation of knowledge sharing in an organisation. To address the main objective, the following subordinated objectives were used:

(a)   To determine the operational factors influencing knowledge sharing in an organisation.

(b)   To investigate the technical factors influencing knowledge sharing in an organisation.

(c)   To determine the value systems for promoting knowledge sharing in an organisation.

(d)   To propose a general framework for the institutionalisation of knowledge sharing in an organisation.

1.2.4.   Research Questions

In order to address the research aim and objectives in the context of the problem statement, the following main research question was considered:

> *What are the social determinants for the institutionalisation of knowledge sharing?*

In order to tease out the main research question, the following sub-questions were considered:

(a) What are the determinants of line of communication for knowledge sharing?
(b) What are the determinants of corporate governance for knowledge sharing?
(c) What are the determinants of facility for knowledge sharing?

1.2.5.   Problem Conceptualisation

The research problem was conceptualised and illustrated as Figure 1 below to address knowledge sharing challenges in an organisation. Institutionalisation cannot take place unless there are policy-driven knowledge sharing strategies leading to guidelines to implement

procedures (Twum-Darko & Harker 2014:290). The institutionalisation of knowledge sharing is driven by the implementation of knowledge management strategies. These strategies, informed by the determinants for the institutionalisation of knowledge sharing, determine the kind of corporate support that the organisation requires to drive knowledge sharing. The process of institutionalisation is achieved through the monitoring and evaluation of knowledge sharing, which serves to inform knowledge management strategies for improvement. Consequently, recommendations are made to management on how to improve the effectiveness of knowledge management strategies, which include the determinants important for the institutionalisation of knowledge sharing.
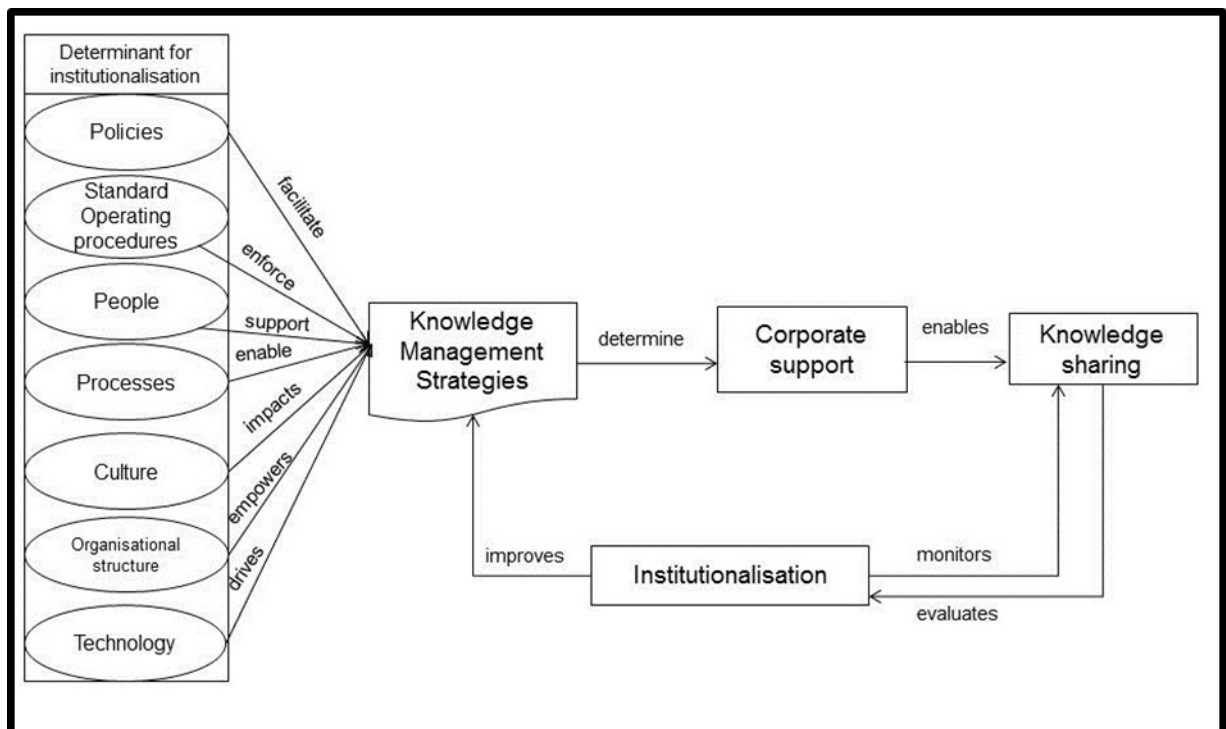
Figure 1: Problem Conceptualisation

1.3.   DELINEATION OF THE RESEARCH

The research focused specifically on the determinants for the institutionalisation of knowledge sharing at a selected organisation in the Western Cape, South Africa. The research was limited to a focus group interview, as well as a survey with managers, professional officers, technicians and intern staff members operating in the Development Information and Geographic Information Systems (DI & GIS) of a public local government organisation.

1.4.   SIGNIFICANCE OF THE RESEARCH

The research attempted to bridge the gap in empirical research on both the social and technical factors influencing the institutionalisation of knowledge sharing in an organisation. Furthermore, it will attempt to provide a general framework that can improve the limited institutionalisation of knowledge sharing at the organisational level. It is envisaged that the outcome of the research will be useful to organisations, managers and knowledge management practitioners.

1.5.   ETHICAL CONSIDERATIONS

The ethical issues related to this study reside mainly in data collection. The data collected via the focus group discussion and the survey was subjected to the approval of the selected organisation to ensure that it does not violate the organisation's privacy and confidentiality policies, nor that it discloses any information that could potentially harm the reputation of the organisation or disclose private information to its competitors. The focus group participants, as well as the participants for the survey, remained anonymous for the sake of confidentiality. The transcribed focus group interview was subject to review by the different group participants to ensure that their responses were captured accurately. This was a way to ascertain the validity of the results of the study. Other ethical considerations were for the accuracy of the information and results presented in the study. Interpretations will be based on the theoretical framework of structuration theory. The statements made by the focus group participants were presented verbatim and were not changed in any way to suit the study or affect the results.

1.6.   OVERVIEW OF REST OF DISSERTATION

Chapter One: Introduction
This chapter establishes the importance of knowledge management and knowledge sharing in particular. The chapter also elaborates on the significance of the institutionalisation of knowledge sharing within an organisation. This enabled the description of the problem statement that led to the aim and objectives of this study, followed by the research main question as well as sub-questions. The problem conceptualisation, as well as the delineation and significance of this research, are also presented.

Chapter Two: Underpinning Theory
Chapter two provides a rationale for the use of structuration theory to underpin the research and outlines the conceptual framework of structuration theory, the relationship between agency and structure, and the significance of this theory in information systems research. This chapter explains the duality of structure as an important concept of structuration theory to enable institutionalisation, drawing on the enactment of Technology-in-Practice (ETiP) perspective of the concept of duality of structure and the process of structuration as the enactment of Knowledge Sharing-in-Practice (EKSiP).

Chapter Three: Literature Review

In chapter three, the review of literature introduces knowledge management in general and goes on to make a case for the focus on knowledge sharing in particular. These two sections are crucial in order to understand and elaborate more on the knowledge management strategies as well as corporate support that would enable addressing the matter of institutionalisation at an organisational level.

Chapter Four: Research Design

Chapter four elaborates on the methodology and approach applied during the data collection process. Emphasis is placed on the research instruments, or techniques used during the data collection process and their importance in the context of this study. The chapter further describes the case study, the units of analysis along with the ethical issues considered during data collection and data analysis.

Chapter Five: Analysis and Interpretations

Chapter five describes the analysis of the data using the concept of the duality of structure as a theoretical lens through which data was collected, analysed and categorised. The findings generated from the data analysis process and supported by existing literature were also elaborated to address the research objectives of this study, namely to address the matter of the institutionalisation of knowledge sharing at the organisational level by developing and providing a general framework for improving the limited institutionalisation of knowledge sharing. The chapter also expresses the significance of the research and its implications.

Chapter Six: Conclusion and Recommendation

Chapter six completes this study by highlighting the importance of the findings gathered as well as the input made to the body of knowledge. Orientations and implications for future research are also outlined. Appendices provide the interview guide as well as the questionnaire used for data collection, the solicitation to take part in the study, the ethical clearance obtained, and the transcribed focus group interviews.

1.7.   SUMMARY

This chapter put the research into context and conceptualised the research problem. The research aims and objectives were outlined, and the research questions formulated. The delineation of the research, the expected contributions and ethical considerations were addressed. The next chapter will explicate the social theory known as structuration theory, used as the theoretical lens through which this study was conducted.

CHAPTER TWO: UNDERPINNING THEORY

2.1. INTRODUCTION

In Chapter 1, the background of this research and the conceptualisation of the research problem were outlined to put the research topic into context. The research objectives, methodology and significance of this study were also outlined. In order to obtain a deeper understanding of the approach undertaken to study the social determinants for institutionalising knowledge sharing at the organisational level, this chapter provides an in-depth description of the underpinning theory which will serve as an interpretive lens for this study.

In this chapter, the objective is to provide a general understanding of structuration theory and its underpinning concepts, including the duality of structure, which is the basis for this study. This chapter also outlines the application of structuration theory in information systems research, demonstrating its affordances and limitations. Finally, the chapter depicts the problem conceptualisation as well as the conceptualised framework that will serve as a basis to answer the main question of this study. This section is structured as follows:

- Overview of structuration theory

- The elements of structuration theory

- The duality of structure

- Structuration theory in information systems research

- Problem conceptualisation

- Conceptual framework: Knowledge Sharing-in-Practice

2.2. OVERVIEW OF STRUCTURATION THEORY

Over the past three decades, structuration theory has helped to generate various debates within the social realm. This is not only because of its importance for understanding the relationship between humans and structure; but also, the role that it plays in empirical research (Pinsonneault & Pozzebon, 2001). Structuration theory can provide substantial guidance through providing sensitising concepts for framing the research, analysing data and interpreting results (Jones & Karsten, 2003). Structuration theory has been used as a social theory to underpin various studies including those within the accounting, healthcare, sociology, psychology and information systems disciplines (Orlikowski & Robey 1991; Moore, 2011; Mackay & Tambeau, 2013; Jones & Karsten, 2003b). In accounting research, Moung Yin Chan (2015:133) supports the application of structuration theory by drawing upon the structural properties of signification, legitimation and domination. It provides culture as structure and the element of accounting standard-setting as action, becoming a theoretical ground for a pattern

analysis of the accounting standard-setting general process. In healthcare, Hardcastle, Usher and Holmes (2005) highlight the importance of structuration theory in nursing research. They (ibid.) contend that the concept of reflective monitoring of the theory of structuration offers another dimension in nursing research. Shilling (1992:84) believes that in sociology studies for instance, structuration theory provides new means to perceive the relationship between social interaction and the reproduction of structural principles which characterise society. Finally, in the context of information systems, Orlikowski and Robey (1991) support the idea that structuration theory helps the development and use of information systems to reproduce the structures of meaning, power and legitimation embedded in technology. Therefore, despite being perceived as complex and involving highly abstract concepts, structuration theory is an important and valuable tool for a rich understanding of management, organisation and related subjects of enquiry (Pozzebon & Pinsonneault, 2005:1353).

The theory of structuration was proposed and elaborated on in The Constitution of Society by Anthony Giddens (1984), one of the most cited contemporary social theorists (Mingers, 2010:297; Coad & Glyptis, 2014:142). A key affordance of his theory is its propensity to reject both positivism and strong interpretivism (Giddens, 1984:1; Barley & Tolbert, 1997; & Heracleous, 2013). This implies that the development of structuration theory was a way for Giddens to resolve and overcome great conflict of pervasive dualism, deficiencies in the two approaches that were dominating social analysis in the late 1970s and 1980 (Moos & Dear, 1986:231; : Jones & Karsten, 2003b:130). From Giddens's point of view (1984:2), the essence of the study of social endeavours, according to the theory of structuration, is neither the experience of an individual actor nor the existence of any form of societal totality, but rather the entrenchment of social practices across space and time. This means that structuration theory can offer insights into how social relations are reflexively structured across time and space within pluralistic and overlapping social systems by drawing on rules and resources (Mackay & Tambeau, 2013:683). Fuchs (2003:140) supports this notion as follows:

> *The rules of social life can be regarded as techniques or generalisable procedures applied in the enactment and reproduction of social practices. Those rules which have to do with the reproduction of institutionalised practices are the ones most important for sociology.*

Therefore, structuration theory emphasises the constitution and reconstitution of social practices (Pozzebon & Pinsonneault, 2005:1357).

Drawing on the aforementioned background, it is clear that structuration theory is constructed by two major aspects: one is the influence of institutional (structural) aspects of social life such as rules, communication and power structures on human interaction; and the other aspect

deals with the production and reproduction of these structural aspects through human interaction (Hussain & Cornelius, 2009:200). Structuration theory proposes that people produce their social systems by employing rules and resources (structure) during their interaction (agency), whether knowingly or unknowingly. They reproduce these structures via routines and rituals that are often taken for granted or unquestioned (Hardcastle et al. 2005:223). As a result it proposes that social structure is not perceived as constraining, impersonal forces which stand above and apart from individuals, but instead is both implicated in and reproduced by actors interacting with others through time and space in their daily lives (Shilling. 1992:77-78). Structuration theory aims to transcend traditional sociological distinctions such as structure and action or subjectivity and objectivity (Wheeler-Brooks, 2009:129). It is considered to be both the medium and outcome of the practices that constitute social systems (Algesheimer & Garau, 2008:233). This is due to the fact that in structuration theory, the moment of action can also be the moment of social reproduction, because in our action we reproduce the conditions of reproductions (Morrison, 2005:313). Therefore, in this study, the theory of structuration provides unique insights into the institutionalisation of knowledge sharing. This view is supported by Timbrell, Delaney, Chan, Yue and Gable (2005:251) who state that:

> *"Structuration theory offers a framework to understand how practices of knowledge and action recurrently transmit within formal and informal communities with reference to collaboration, human involvement and interaction, and the guidance of change."*

Therefore, using this social theory, an understanding of the social determinants for the institutionalisation of knowledge sharing can be achieved. Structuration theory, through the use of the concept of the duality of structure, enables the categorisation of the social determinants for knowledge sharing institutionalisation in terms of the modalities, namely interpretive schemes, norms and resources, which are employed in the production of social interaction, thereby enabling an understanding of how knowledge sharing can be institutionalised through lines of communication, the enactment of governance as norms and by the influence of power respectively (Timbrell et al., 2005:249). As such, structuration theory is applicable to the study of knowledge management, and in particular knowledge sharing. However, it is imperative to understand the relationship between the theory of structuration and knowledge sharing, as well as to describe the elements that constitute the theory of structuration for a better understanding of this social theory.

2.3. THE ELEMENTS OF STRUCTURATION THEORY

Giddens's structuration theory is essential in this study as it highlights the production and reproduction of social practices in the lives of everyday people (knowledgeable agents) (Morrison, 2005:312). Human interactions are determined by rules, common knowledge and recognised norms of social practice that can be unpredictable as human nature itself regulates these social features (Hardcastle et al., 2005:229). It is the condition governing the continuity or transmutation of structure and the recursiveness of practices that create and re-create the social world, emphasising that society and its structure are both conditions and outcomes of the actions of human beings (Wheeler-Brooks, 2009:129). The emphasis of structuration is therefore on the interplay between structure and agency (Hardcastle et al., 2005:223). This means that human agents always act within a structure that simultaneously constrains and enables their activity, enacting the establishment of social practices (Larsson, 2012:256). Giddens's theory therefore attempts to balance structure and agency as two of the central constructs of structuration theory.

2.3.1. Agency (Agent)

The notion of practical consciousness is fundamental to structuration theory as it is that characteristic of the human agent or subject to which structuralism, which is considered dead tradition of thought that failed to generate the revolution in philosophical understanding and social theory (Giddens, 1987:194), has been particularly blind (Giddens, 1986:6). Giddens (Ibid.) emphasises the variation associated with the exercising of agency, as he recognises the structural constraints within which agents operate. This is particularly important in this study as Giddens describes structure, which is brought by actors, as rules and resources which both constrain and enable action (duality of structure) (Bertilsson, 1984:343). To be an agent means being capable of exerting some degree of control over the social relations in which one is enmeshed, which in turn implies the ability to transform those social relations to some degree (Sewell 1992:20). Therefore, for the context of this study, agency is the ability to make a difference (also known as transformative capacity) (Giddens, 1986:14; Twum-darko & Sibanyoni, 2014:4). In other words, agency is the capacity of people to engage in action purposively, with both intended and unintended consequences (Pham & Tanner, 2015:5). Structuration theory portrays individuals as knowledgeable, powerful and able to change social structure through their action (Wheeler-Brooks, 2009:132). Sewell (1992:21) concurs with this view in the following statement:

> *Agency entails an ability to coordinate one's actions with others and against others, to form collective projects, to persuade, to coerce, and to monitor the simultaneous effects of one's own and other activities.*

Drawing on these notions regarding agency, it is reasonable to conclude that for agency, actions must be constrained as well as enabled by the rules and resources constitutive of social systems (Bertilsson, 1984:343). Therefore, with regard to the institutionalisation of knowledge sharing in an organisation, agency encompasses actions that need to be coordinated effectively to enact the structure of Knowledge Sharing-in-Practice. These actions are engendered through modalities, being policies and regulations as interpretive schemes, governances as norms and technology as facilities; and the modes of interaction, being authority for policies and regulation implementation, practices needed for governance and documentation and emails and systems for technology.

2.3.2. Structure

It has been difficult to define structure over the years, despite the fact that it has been addressed in the fields of sociology, anthropology, as well as cultural research (Sewell, 1992:2). Orlikowski and Robey (2015:147) acknowledge that structure is not something concrete, situated in time and space, and that it lacks material characteristics. Observations from literature reveal that structure provides the conditions for action and is constantly recreated, renegotiated and redefined because of what people do and how they think. In particular, Giddens's (Giddens 1986:377) definition of structure does well to describe the existence of structure as an abstract construct:

> *Rules and resources recursively implicated in the reproduction of social systems. Structure exists only as memory traces, the organic basis of human knowledgeability, and as instantiated in action.*

Structure, as understood by Giddens, is a process, not a product or steady state, and it is developed through time and across space (Buhr, 2002:18). This means that structure, as the abstract property of social systems that is not situated in time and space, cannot exist apart from human actors who enact and interpret its dimensions merely through time and space (Orlikowski & Robey, 1991:147) It is thus referred to in social analysis as the structuring properties allowing the binding of time-space in social systems (Giddens, 1986:17). Another observation made by Sewell (1992:2) is that "structure shapes individual practices and it appears in social scientific discourses as intertwined to human agency, to exist apart from, but nevertheless to determine the essential shape of the strivings and motivated transactions that constitute the experience surface of social life". Structure is an unobservable set of rules and resources that are produced and reproduced in social interaction to generate social systems (Algesheimer & Garau, 2008:233).

2.3.2.1.   Rules

Sewell (1992:8) describes rules (schemas) as generalisable procedures that can be applied to enact, regulate or reproduce social life. In addition, rules refer to an actor's view of how things should be done and/or how they have been done (Mackay & Tambeau, 2013:676). Moreover, rules can take many forms: intensive or shallow, tacit or discursive, informal or formalised, weakly or strongly sanctioned. Yet, all contribute to the maintenance of social practices (Giddens, 1986:21; Dixon, 2011:281). Shilling (1992:78) adequately summarises these views by pointing out that rules are norms and techniques, applied in the enactment and reproduction of social practices that include knowledge about social conventions and their contexts of application, and that provide actors with a set of tools to make the interaction possible. Therefore, in the context of this research, rules entail norms, guidelines and procedures that enable the creation and re-creation of social practices.

2.3.2.2.   Resources

Resources can be described as the means by which intentions are realised, goals are accomplished and power is exercised (Chang, 2014:80). According to Giddens (1986:15), resources are also known as structured properties of social systems that are drawn upon and reproduced by knowledgeable agents in the course of interaction. They are something that social actors can rely upon to achieve certain ends (Farrall & Bowling, 1999:256). Resources include human resources, individual traits, abilities, physical strength, knowledge, emotional commitment, objects or possessions that empower individuals to act (Algesheimer & Garau, 2008:233). Furthermore, resources can be allocative or authoritative (Rose & Scheepers, 2001:219; Shilling, 1992:79). Allocative resources refer to raw material, means of production, produced goods, all deriving from the coordination of the activity of human agents (Hardaker & Singh, 2011:224). Authoritative resources, on the other hand, involve the organisation of social time-space, chance of self-development, relationships with people, or the command over people or actors (Giddens, 1986:258). It is derived from power which is socially granted to the agent, and is thus associated with legitimacy (Chiasson & Saunders, 2005:752).

Thus, what constitutes the elements of structuration theory are the role of agency, which is the human capability to make comprehensive decisions and to affect others with consequential actions based on those decisions (Workman, Ford & Allen, 2008:269), and structure, which is described as rules and resources that are produced and reproduced to generate social systems (Algesheimer & Garau, 2008:233). These elements are fundamental in understanding one of the key concepts of Giddens's structuration theory, namely the duality of structure, which is elaborated upon in more detail in the following section.

2.4.   THE DUALITY OF STRUCTURE

The connection between social structure and human action refers to the process of structuration (Bertilsson, 1984). Therefore, structuration theory can be perceived as the process through which the duality of structure evolves and is reproduced over time and space (Rose & Scheepers, 2001:220; Mauerer & Nissen, 2014:118). Another way to understand the duality of structure is to consider Orlikowski and Robey's (1991) interpretation of this concept:

> *The structure of a social system is created by human action, and then this structure determines future action. Agents in their actions constantly produce and reproduce and develop the social structures which both constrain and enable them; the process through which structure is created and recreated as a result of human action over time and space.*

Figure 2.1 below summarises what Orlikowski and Robey (1991) allude to above. It depicts the duality of structure on the basis of structure being both a constraint and an enabler of actions. Those actions change the structure in which human agents act, thus producing and reproducing social systems (Algesheimer & Garau, 2008:233).
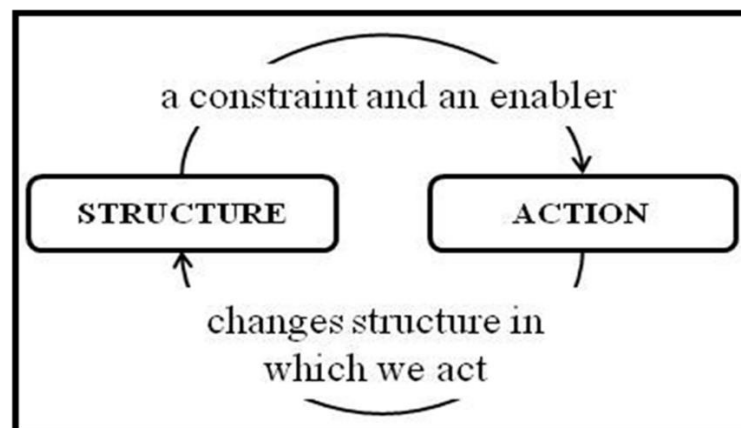
Figure 2.1: Duality of Structure concept (Twum-Darko, 2014)

Giddens (1984) describes the duality of structure as constituting two pillars of duality: the dimensions of structure and the processes of interaction. The three dimensions of institutionalised social structure are: signification, domination and legitimation (Jones & Karsten, 2003b:6). The processes of interaction are known as: communication, power and

sanction (Hossain, Moon, Kim & Choe, 2011:577-578). These two pillars are linked by means of modalities that operate both ways between agency and structure due to their mutual relationship. These modalities are respectively: interpretative schemes, facilities and norms (Twum-Darko, 2014). The three structures are manifested in their respective modalities which are driven by the interaction of communication, power and sanction (Giddens, 1986). Mauerer & Nissen (2014) further argue that the duality of structure involves agents exercising power, communicating and sanctioning their own behaviour and those of others by referring to modalities (stocks of knowledge, rules and procedures), and in doing so produce and reproduce structures of signification, domination and legitimation. Therefore, even though the diagram in Figure 2.2 depicts these structures as separate, the interactions between these modalities occur simultaneously. Mauerer and Nissen (ibid.) add that it is through the interplay of these modalities (the process of structuration) that human actors reproduce or change existing norms of behaviour. The duality of structure concept is depicted in the following illustration:
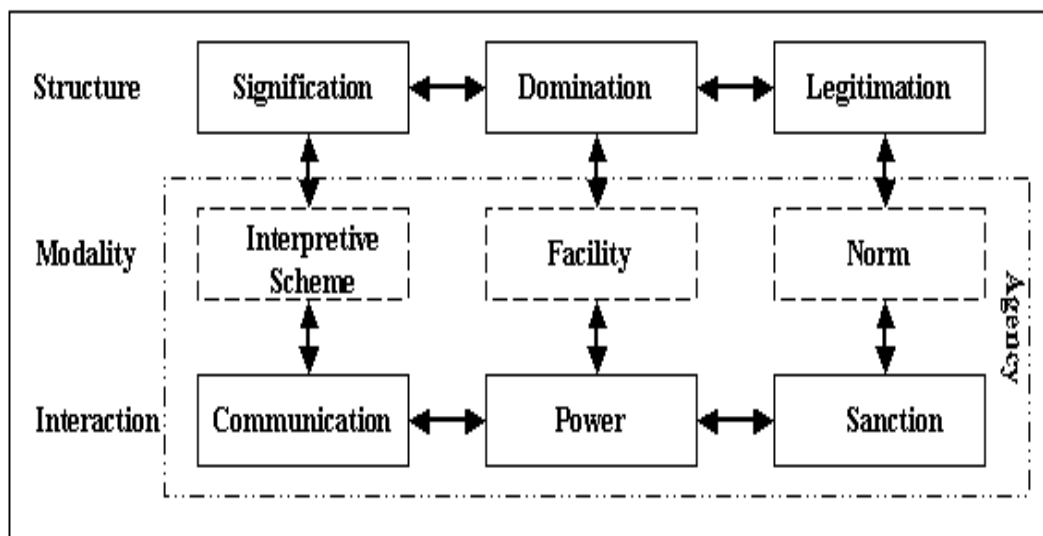
Figure 2.2: Dimensions of the Duality of Structure (Giddens, 1984)

2.4.1. The structure of signification

According to Hardaker & Singh (2011:224), signification refers to how individuals produce meaning through communication and language. It provides general language rules necessary for communication that constitute what people think (Hardcastle et al., 2005:229). Buhr (2002:19) supports this view, but adds that the structure of signification is the abstract cognitive dimensions or reasoning process used by agents for communicating and understanding. He (ibid.) emphasises that signification includes "[an] organised web of semantic codes, interpretive schemes and discursive practices". Signification, therefore, can be used by agents for communicating, understanding and providing the meanings for different types of activities

(Mauerer & Nissen, 2014). For the purpose of this study, as far as the institutionalisation of knowledge sharing is concerned, the structure of signification represents the social rules that enable and inform the communication process (Baroudi & Orlikowski, 1988:149). The signification structure is related to organisational interaction using different kinds of interpretative schemes such as policies, processes, guidelines and regulations enabling knowledge sharing in the organisation (Giddens, 1986).

2.4.2.   The structure of legitimation

The structure of legitimation provides morality. It involves a shared set of values and ideals, normative rules, codes of conduct, mutual rights and mutual obligations (Buhr, 2002:19). This opinion is shared by Hussain and Cornelius (2009:200), who state:

> *"The legitimation structure is comprised of normative regulation such as policies, strategies, methodologies and objectives that involve social agents that monitor the flow of interaction between each other and that can be produced and reproduced to serve as a legitimation framework"*.

The structure of legitimation may define the appropriate dress code in particular settings, the transgression of which may invoke sanctions (Jones & Karsten, 2003:7). The legitimation structure may define the 'Do's and the Don'ts'. The modality of norms can be perceived as organisational rules or conventions governing legitimate or appropriate conduct (Baroudi & Orlikowski, 1988). Furthermore, Twum-darko (2014) refers to it as moral code, leadership, understanding and endorsement for human interaction which ultimately produces legitimation. In the context of this study, norms and proper governance articulate and sustain the establishment of the structure of legitimation (Orlikowski & Robey, 1991:149). The structure of legitimation can be perceived in terms of governance, legal authority, organisational culture and employees' beliefs. These aspects differ from the structure of signification which drives the lines of communication in terms of policies, guidelines and regulation which are all important for enabling knowledge sharing in an organisation (Roux, Rogers, Biggs, Ashton, & Sergeant, 2006:12; Hussain & Cornelius, 2009:209; Blom, Rowley, Bennett, Hitchcock, & Dunbar-Hall, 2014:140).

2.4.3.   The structure of domination

The structure of domination refers to the exercising of power (Becker-Ritterspach, 2006:362). In fact, the structure of domination, which originates from the control of resources (Mauerer & Nissen, 2014:116) both produces and exercises power at the same time, It means that human agents utilise power in interaction by drawing on facilities such as the ability to allocate material or human resources (Gao, 2007:106). Domination involves controlling and using allocative and

authoritative resources, along with power over other people or resources (Giddens, 1986). Orlikowski & Robey (1991) describe 'Facility' (also known as resource) as the means through which intentions are realised, goals are accomplished and power is exercised. Therefore, domination is provided by structures that enforce established rules to regulate the actions and behaviour of individuals (Hossain et al., 2011:520). From an institutional viewpoint, the structure of domination is adopted through structural elements that include control over people, resources and technology (Puron-Cid, 2013:548; Pham & Tanner, 2015:6).

Giddens acknowledges that human agents always act within a structure that simultaneously constrains and enables their activity and that the structure itself is dependent on the human activity it governs (Larsson, 2012:256). Structure does not exist independently from individuals. It shapes individual behaviour, but it is also the behaviour of the individual that reproduces social structure (Sewell, 1992). Therefore, in the context of this study, the duality of structure entails the use of rules and resources that both constrain and enable action (Bertilsson, 1984:343). The three dimensions of structure described above are all intertwined as they are all the medium and the outcome of human interaction (Gurd, 2008:527). This argument is supported by Rose and Hackney (2003:2-3) who state that:

> *"As human actors communicate, they draw on interpretative schemes to help make sense of interactions; at the same time those interactions reproduce and modify those interpretative schemes which are embedded in social structure as meaning or signification. Similarly, the facility to allocate resources is enacted in the wielding of power, and produces and reproduces social structures of domination, and moral codes (norms) help determine what can be sanctioned in human interaction, which iteratively produce structures of legitimation".*

Therefore, each structural dimension has a respective dimension of agency, while also being interlinked, and can thus influence each other. This concurs with the duality of structure concept in the production and reproduction of social systems (Larsson, 2012:256).

2.5.   STRUCTURATION THEORY IN INFORMATION SYSTEMS RESEARCH

Over the years, research in the information systems (IS) field has drawn on a range of different social theories to gain insights into IS phenomena (Jones & Karsten, 2003:127). In particular, structuration theory has become a focal point of discussion within the IS literature given its focus on the role of human agency and the various sources of structure in the development and use of ISs (Chiasson & Saunders, 2005). Despite the lack of technology in Giddens's work, structuration theory has become widely used in IS research (Jones & Karsten, 2003). Structuration theory has been particularly useful for the explanation of unexpected outcomes in information technology (IT) implementation (Pozzebon & Pinsonneault, 2005). The theory provides for an informed account of social practices in a field dominated by technical consideration (Kouroubali, 2000:4).

The first application of structuration theory in IS research was by Barley (1986), examining how the actions of radiologists and the institutionalised traditions or forms within the organisations influenced each other over time for the introduction of computer tomography (CT) scanners into the radiology departments of two different community hospitals. This implies that the influence of structuration theory in IS does not reside on both structure and action but rather their reconciliation in the duality of structure; or the intertwined provision of the three dimensions of structure interacting with their respective linking modalities (Walsham & Han, 1991:56-57). This is why its common application to the IS field is in the analysis of empirical situations using the dimensions of the duality of structure model (Rose & Hackney, 2002:1).

Structuration theory was a means through which the relationship between human action, technological and organisational structure would be addressed in information systems (Orlikowski & Robey, 1991). This application was particularly highlighted by Orlikowski (1992) in her adaptation of Giddens's duality of structure to better fit the IS context by means of the enactment of the duality of technology. According to Pham and Tanner (2015:6), Orlikowski's theory extends structuration theory into the realm of technology in organisations to focus on the roles and influences of technology and the dynamic interactions between technology, institutional structure and people in an organisational context. This is illustrated in Figure 2.3 below.

Through this practice lens, she proposes the use of technology as enacted in the continuous production and reproduction of structure (Larsson, 2012:258). This implies that this duality sees information technology as the social product of subjective human action within specific structural contexts (Orlikowski & Robey, 1991:151). Orlikowski contends that technology is a product and medium of human action, and that those actions produce technology (Orlikowski, 2000). Moreover, in the conceptualisation of the duality of technology, technology is physically

constructed by actors working in a given social context and is also socially constructed by actors through the different meanings they attach to it, and the various features they emphasise and use (Veenstra, Melin & Axelsson, 2014:3).

Figure 2: Structurational model of technology (Orlikowoski, 1992)
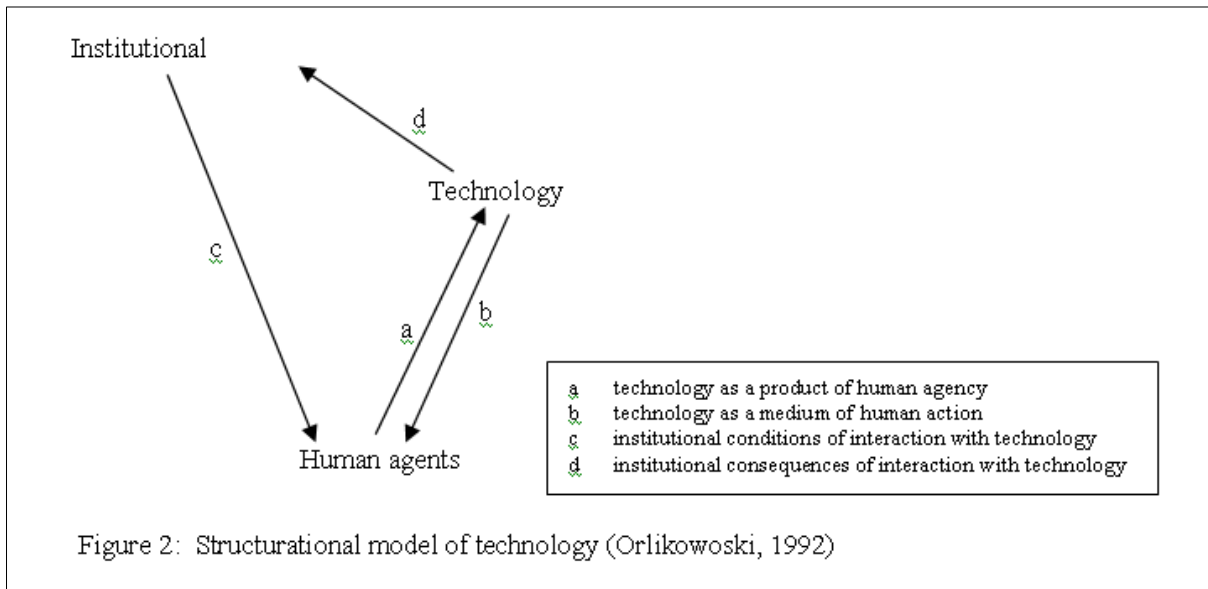
Figure 2.3: Enactment of the duality of technology (Orlikowski, 2000)

DeSanctis and Poole (1994) contribute to another application of structuration theory in the IS field with the adoption of the notion of adaptive structuration theory. They (ibid.) believe that technology properties and contextual contingencies can play critical roles in the outcome of the use of advanced technology (1994:124). Furthermore, Orlikowski (2000:405) asserts that adaptive structuration theory focuses on the structures built into such technologies as group decision support systems. Adaptive Structuration Theory (AST) focuses on social structures, rules and resources provided by technologies and institutions as the basis of human activity (DeSanctis & Poole, 1994:125).

With the intent to refine the concept of duality of technology, Orlikowski (2000) adopts a practice lens identified as the notion of 'technology-in-practice'. In this adoption, Orlikowski refers to the structure of technology use enacted by social actors as they interact with a particular technological artefact over time (Mingers & Willcocks, 2004:320). Orlikowski comes to the realisation that technological structure is enacted every time technology artefacts such as machine, techniques, appliance, devices or gadgets are used in a particular way in our daily activities (Orlikowski, 1999). The interaction between the structure of technology and these artefacts (being elements of agency) enables technologies-in-practice. The prospect is outlined in Figure 2.4 below.
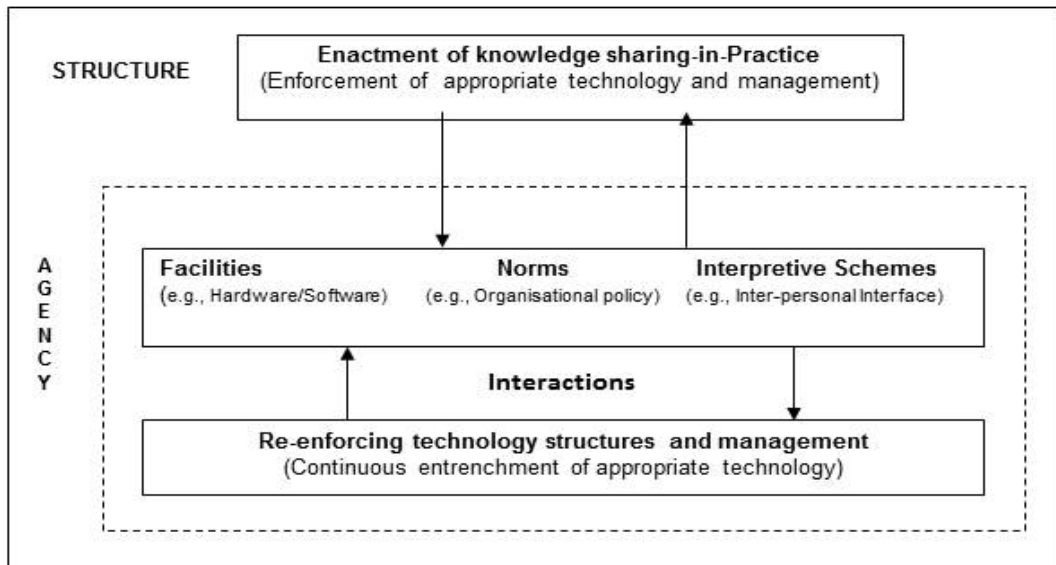
Figure 2.4: Enactment of Technology-in-Practice (Orlikowski, 2000)

Taking into consideration what has been discussed above, it is clear that although distinctive, the Duality of Structure, Adaptive Structuration Theory and Technologies-in-Practice are all concepts derived from the theory of structuration to better suit its application to information systems research (Orlikowski 1992; DeSanctis & Poole, 1994; Orlikowski, 1999). These concepts diversify the use of structuration theory in IS by having:

- The duality of technology, which extends the structuration theory lens in IS by presenting technology enacted by and for people which is produced and reproduced by human actors in social practices (Pham & Tanner, 2015:6).

- Adaptive structuration theory, which is understood as an important way to investigate the chance in users' perceptions about an information system and their relationship with that system once implemented in organisations (Federici & Braccini, 2014:337).

- The enactment of technologies-in-practice, which is a refined model of the duality of technology, is seen as the process of enactment where users, who constitute the structure of technology, in return share their interaction and offer deeper understanding of the emergent and innovative ways in which people engage with new technology in organisations over time (Orlikowski, 1999).

Given that structure is both the medium, outcome and a determination of action, IS researchers believe that structuration theory could help in understanding the relationship between human agencies and structure through the recurrent use of technology (Chiasson, 2002:26). Information systems may be theorised (in structurational terms) as a social system (information practice), supported by material resources (information technologies) designed and managed by a further social system (Rose & Scheepers, 2001:226). However, several critics have

emerged following the application of Giddens's structuration in the IS domain. One major concern is that Giddens's theory, described by Walsham and Han (1991:55) as a meta-theory, has been difficult to apply to empirical studies. This can be observed by the influence of material technology without attributing to it properties of agency or structure (Rose & Hackney, 2002:8). This is due to the fact that from the perspective of structuration, many concepts and other theories (Duality of Technology, Adaptive Structuration, Technologies-in-Practice) have been developed and redefined based on the theory of structuration, making it meta-theory in the sense that it is a complex theory to grasp and all these concepts are applied differently (Lipscomb, 2006; Feldman & Orlikowski, 2011). Moreover, Jones and Karsten (2015:139) believe that structurational IS research has tended to neglect types of ISs and phases of development and use where the scope for human agency is perceived to be limited. This is based on what Barley and Tolbert (1997:112) believe, which is that structuration theory offers little insight into how to investigate the way in which everyday action revises and reproduces an institution.

Despite the complexity around the concept of structuration theory and its application, the challenges do not impede on the importance and contribution structuration theory has made in IS research (Conrad, 2014). The theory provides unique insights on how social systems are produced and reproduced through the intertwined relationship between structure and agency. This process, in the context of this study, facilitates the prospect of the institutionalisation of knowledge sharing in an organisation, following Orlikowski's (1999) acknowledgment of the possibility of having Technologies-in-Practice being institutionalised through the repeated process of production and reproduction of social technology structure (Orlikowski, 1999:13).

It is clear from the aforementioned criticism that the application of Giddens's theory to the field of information systems is not without difficulty (Pozzebon & Pinsonneault, 2005:1355). Concerns related to Giddens's lack of attention paid to technology in his theory, the relationship between agency and structure, or the fact that Giddens had been critiqued for failing to address the effect of a dramatic shock to structure through an external factor like information systems, are amongst the factors causing the applicability of structuration theory to be problematic (Pozzebon & Pinsonneault, 2005; Jones & Karsten, 2003; & Kouroubali, 2000). However, notwithstanding these concerns, structuration theory has been found to be useful to the IS research domain as it provides an informed account of social practices in a field dominated by technical considerations (Kouroubali, 2000:4). Studies from Orlikowski and Robey (1991) and Orlikowski (2000) are amongst the first to explicitly consider the use of structuration theory in the enactment of technology in organisations. They propose a structural model of technology in which the dual nature of IT is at the heart of the structuration process (Pozzebon & Pinsonneault, 2005:208). Therefore, the power of structuration theory to illuminate empirical

situations in IS has been well demonstrated as an important tool for enacting the use of technology at the organisation level (Rose & Scheepers, 2001:229). As such, Orlikowski's (1999) enactment of Technologies-in-Practice, which is derived from the theory of structure, is used as a canvas for the enactment of Knowledge Sharing-in-Practice in the context of this study to better suit the aspect of the institutionalisation of knowledge sharing in an organisation. The implications of adapting the Technologies-in-Practice model to Knowledge Sharing-in-Practice is elaborated on in the next section.

2.6.   PROBLEM CONCEPTUALISATION

As discussed in Chapter 1 section 1.2.5, in order to conceptualise the problem statement, it becomes appropriate to underpin such conceptualisation with theory as a means to provide a deeper understanding and interpretation of the phenomenon to be researched. Giddens's structuration theory examines the dual relationship between human agency and structure in the production of social systems (Workman, Ford & Allen, 2008:269). Its application in Information Systems was achieved through the enactment of other theories such as the duality of technology and adaptive structuration (Orlikowski, 1992; Gopal, Bostrom & Chin, 1992). One of these concepts, derived from the theory of structuration in particular, was used as a canvas in this study for the conceptualisation of the problem concerning the identification of the social determinants for the institutionalisation of knowledge sharing in an organisation. The concept known as Technology-in-Practice, developed by Orlikowski (1999), was used to enact Knowledge Sharing-in-Practice, a model driving the continuous institutionalisation of knowledge sharing by interpretive schemes, which include, for example, policies and rules for communication, norms which involve governance procedures on human behaviour, and facility which deals with resources such as hardware and software, for example, achieved through the influence of power (Orlikowski, 2000).

Given the underpinning theory to enact Knowledge Sharing-in-Practice, the research problem has been conceptualised and illustrated as Figure 2.5 below to address knowledge sharing challenges in an organisation. Institutionalisation cannot take place unless there are policy-driven knowledge sharing strategies leading to guidelines to implement procedures (Twum-Darko & Harker, 2014:290). The institutionalisation of knowledge sharing is driven by the implementation of knowledge management strategies. These strategies, informed by the determinants for the institutionalisation of knowledge sharing, determine the kind of corporate support that the organisation requires in order to drive knowledge sharing. The process of institutionalisation is achieved through the monitoring and evaluation of knowledge sharing, which serves to inform knowledge management strategies for improvement. Consequently, recommendations are made to management on how to improve the effectiveness of knowledge management strategies, which include the determinants important for the

institutionalisation of knowledge sharing. Therefore, with regard to the concept of duality of structure of structuration, the institutionalisation of knowledge sharing would be entrenched through the production and reproduction of the knowledge sharing structure and its agency, represented in terms of the modalities of interpretive schemes. In the context of this study, these are the line of communication, the modality of norms perceived as corporate governance and the modality of facilities perceived as the use of technology infrastructures from which the presented determinants driving the enactment of knowledge management strategies as well as the corporate support for knowledge sharing are assigned within the different modes of interaction.
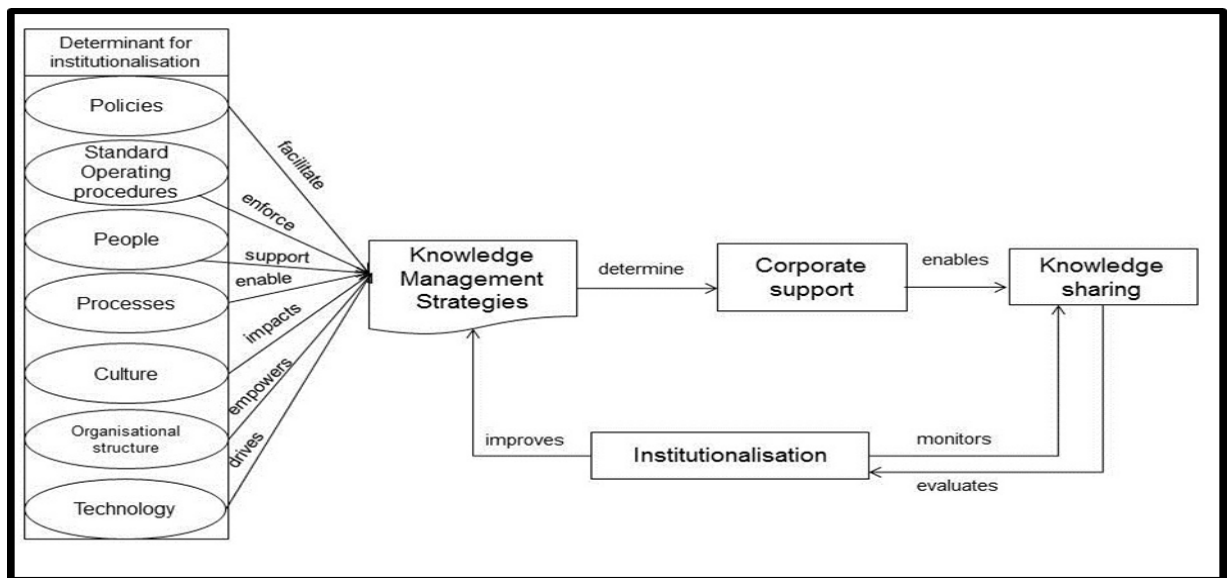
Figure 2.5: Problem Conceptualisation

The implication of adapting Technology-in-Practice, from the duality of structure, to the enactment of Knowledge Sharing-in-Practice in this conceptualisation of the research problem is important. This is because agency, represented by modalities including policies and regulations, governance, and technologies; and the modes of interaction, represented by authority, practices and emails and documentation, determine the knowledge management strategies and corporate support to drive the institutionalisation of knowledge sharing through the production and reproduction of knowledge sharing structure.

2.7. CONCEPTUAL FRAMEWORK: KNOWLEDGE SHARING-IN-PRACTICE

This research draws on Orlikowski's (2000) enactment of Technology-in-Practice (ETiP) perspective of the concept of duality of structure and the process of structuration as the enactment of Knowledge Sharing-in-Practice (EKSiP). Technology-in-Practice is the structures enacted through the recurrent use of technology (Orlikowski, 2000). It shows that information technology has both social and material properties (Orlikowski & Robey, 1988:18). Therefore, it is envisaged in this research that EKSiP will provide a better understanding and interpretation of how knowledge sharing is perceived and utilised within an organisation. In the representation illustrated in Figure 2.6 below, EKSiP is depicted as structure. This structure entails the continuous structuration process for the institutionalisation of knowledge sharing in an organisation. This structure is supported by agency, which involves the duality of structure, modalities and modes of interaction.
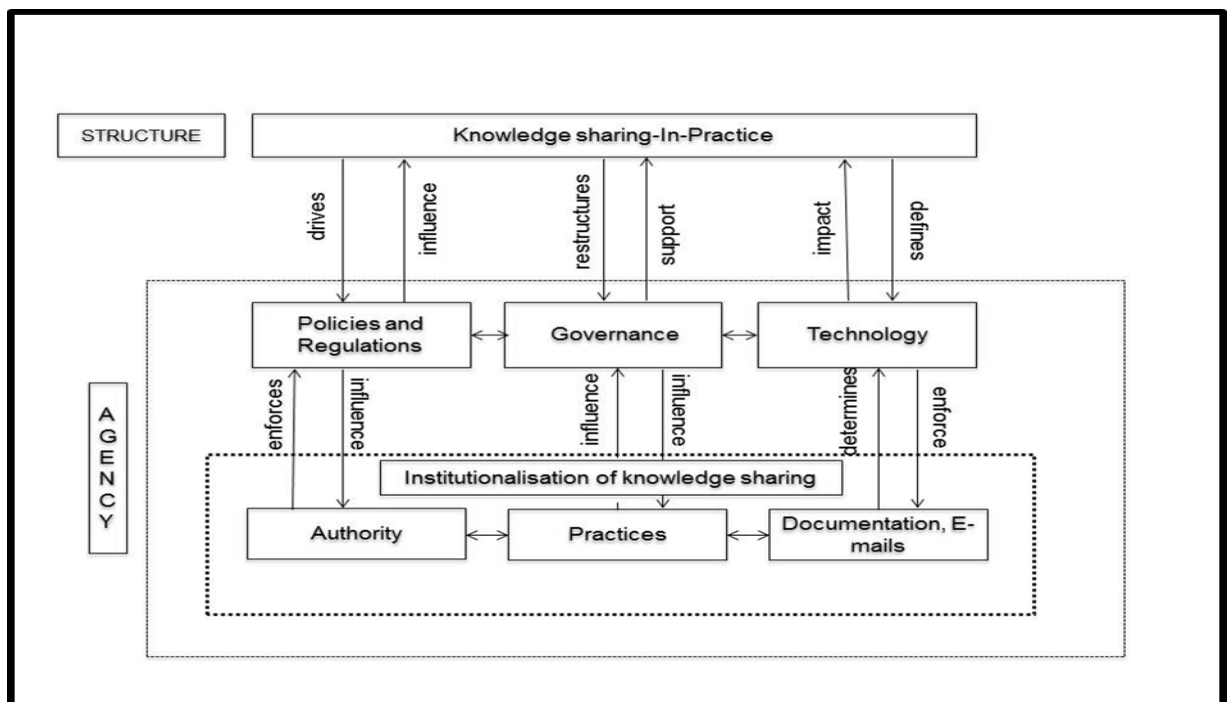
Figure 2.6: Enactment of Knowledge Sharing-in-Practice

Figure 2.6 above effectively depicts what institutionalisation of knowledge sharing in an organisation means for the purpose of this study. In fact, continuous institutionalisation of knowledge sharing to enact Knowledge Sharing-in-Practice is mediated by interpretive schemes, known as the line of communication for knowledge sharing which includes policies, processes, people, standard operating procedures for communication; norms or corporate governance, which involve governance procedures on human behaviour and organisational culture and facility or technology infrastructure which includes technologies such as hardware,

software e.g. Microsoft SharePoint, intranet and internet, knowledge sharing systems, all achieved through the influence of power (Orlikowski, 2000). The interrelated agencies, enacting Knowledge Sharing-in-Practice, continuously institutionalise knowledge sharing. This approach, with regard to the enactment of Knowledge Sharing-in-Practice, confirms the important role of the theory of structuration, especially the duality of structure in the production and reproduction of the knowledge sharing structure (Hussain & Cornelius, 2009:200). Applying the same approach that is used to enact Technologies-in-Practice, which entails the production and reproduction of the structure of technology through the repeated implication of human actions represented by the modalities and modes of interaction (Zahra & Nielsen 2002), facilitates the construct around the institutionalisation of knowledge sharing through the enactment of Knowledge Sharing-in-Practice.

2.8.   SUMMARY

This chapter presented an overview of structuration theory and its importance to empirical research. It outlined structuration theory as a powerful tool to study social life in terms of social practices developed over time by portraying structure as a constraint and an enabler for action, which in turn changes the structure in which we act. This process, called the duality of structure, was also described as it is a key element of this study. The chapter described the different elements of Giddens's theory, as well as their relevance to the information systems domain. It also presented different concepts derived from the theory of structuration that are applied in information systems studies. This chapter explained how structuration theory, through the Technology-in-Practice model (adapted from the duality of structure) was used as a basis for conceptualising the research problem and developing the conceptual framework. The following chapter will elaborate on the literature around the concept of knowledge sharing. This entails expounding on the overview of knowledge management and the description of the determinants gathered from various authors that nurture the culture of knowledge sharing in an organisation, thereby enacting its institutionalisation.

CHAPTER THREE: LITERATURE REVIEW

3.1. INTRODUCTION

3.1.1. Significance of knowledge management

Knowledge management has generated significant interest from researchers and practitioners over the past two decades. This is due to the fact that knowledge management has been found to be significantly important for an organisation's performance, with knowledge as the driving asset for competitive advantage (Wiig 1997:6; Watson & Hewett, 2006:142; Lindner & Wald 2011). Consciously managing knowledge brings about many benefits for an organisation, thus prompting the interest in knowledge management (Ruppel & Harrington 2001; Alavi & Leidner 2011:113). Knowledge management is perceived to make organisations act as intelligently as possible for overall success by realising the best value of its knowledge assets (Wiig, 1997:8). Moreover, knowledge management enables organisations to ascertain the skills and capabilities of employees to improve performance and help companies operate more innovatively, efficiently and effectively (Greiner, Böhmann, & Krcmar, 2007:4). Increased innovation can thus help organisations to introduce cutting-edge ideas, and increased effectiveness and efficiency can enhance their performance, thereby differentiating them from their competitors (Kokt & Roux, 2006:107). Innovation is also perceived as the ability to create and deliver products and services of high quality, using knowledgeable employees who are engaging effectively in aspects of knowledge management across the organisation (Wiig, 1997:8). Therefore, one of the primary functions of a company should be to create the conditions in which individuals can integrate specialist knowledge in order to produce goods and services of increasingly higher value (Clarke & Rollo, 2001).

Knowledge is treated as a vital and significant strategic organisational resource that, as discussed, can influence the competitive advantage of the organisation (Alavi & Leidner, 2001). This is because knowledge is information obtained from individual thinking that is generated from observations, facts or different interpretations and judgments of the individual employees of the organisation (Alavi & Leidner, 2001:109). Knowledge is, therefore, an organised combination of data, assimilated with a set of rules, procedures, and operations learnt through experience and practice (Bhatt, 2001:70). Cheruiyot, Jagongo and Owino (2011) describe knowledge as a blend of experience, insights, expertise, intuition and judgment that exists in the mind of the knower. Therefore, the value of knowledge lies in the experience of the person who has accumulated the knowledge. Knowledge is thus considered to be a strategic resource if the organisation can effectively and efficiently harness the knowledge of its employees to create a combined organisational memory. This organisational memory makes relevant knowledge more readily accessible and usable by other employees, thereby enabling overall improved efficiency and effectiveness, improved problem solving and

decision-making and creates core competences (Alavi & Leidner, 2011:111). It is therefore agreeable that knowledge management could make organisations act intelligently to make them viable and successful in realising the value they can derive from knowledge assets (Wiig, 2003).

3.1.2. Knowledge management processes

Knowledge management is about managing the activities of knowledge workers, which is achieved through facilitating, motivating, leading, and supporting knowledge workers by providing or nurturing a suitable working environment (Gao *et al.,* 2008:12). It includes all the activities that utilise knowledge to accomplish the organisational objectives in order to face the environmental challenges and stay competitive in the market place (Greiner et al., 2007). To facilitate these activities, knowledge management involves certain processes which include the creation, transfer, storing and using of knowledge (Bhatt, 2001). This notion is supported by Massingham (2014:1077) when he states that the "goal of knowledge management is to capture, store, maintain and deliver useful knowledge in a meaningful form to anyone who needs it in any place and at any time within an organisation." Therefore, knowledge management supports not only the know-how of a company, but also the know-where, know-who, know-what, know-when, and know-why (Rus & Lindvall, 2002:26). Knowledge management, therefore, wishes to promote individual knowledge to the organisational level by gathering and sharing individual knowledge and turning it into knowledge that can be accessed from individuals to groups, throughout organisations and industries (Rus & Lindvall, 2002:29). Thus, in the context of this study, knowledge management entails managing knowledge resources by creating, storing and making them available across an organisation for improved organisational performance.

3.1.3. Implications of knowledge management for the organisation

Knowledge management is implemented with the view to build core competences and strategic know-how in an organisation (Alavi & Leidner, 2001:111) by:

- Exposing individuals to potentially useful information and facilitating assimilation of information;

- Enhancing individuals' learning and understanding through provision of information; and

- Focusing on knowledge flows and the process of creating, sharing and distributing knowledge.

Knowledge management is an effective and suitable means through which activities of knowledge workers, as well as existing organisational knowledge, are managed to achieve the organisation's goals (Gao et al., 2008:11). It is therefore indispensable for organisations since

it contributes to sustainable organisational growth, organisational learning, innovation, and success (Lee, Shiue & Chen, 2016:464).

However, issues, such as the lack of facilitation for knowledge creation and knowledge sharing, make the applicability of knowledge management complex (Zipperer & Amori, 2011:6). This is due to the fact that poor strategies for nurturing and motivating the applicability of knowledge creation and sharing have been observed (Seidler-de Alwis & Hartmann, 2008:113). The fundamental purpose of knowledge management is to make knowledge accessible and usable within an organisation, and as such, aspects of knowledge sharing need to be well understood (Paulin & Suneson, 2012:81). This study focused on knowledge sharing, as it is considered central to effective knowledge management (Riege, 2005:20). However, observations reveal that managers have been trying to implement a diversity of initiatives to continuously improve current operations by mobilising employees' knowledge in the organisation (Mura Lettieri, Radaelli, & Spiller, 2013:527). Lin (2007:2) highlights that it is only when employees are willing to share what they know with each other, that an organisation can begin to manage knowledge resources effectively and realise the power of knowledge management. Knowledge sharing is the fundamental means through which employees can contribute to knowledge creation, innovation, and ultimately the competitive advantage of the organisation (Sánchez, Sánchez, Collado-Ruiz & Cebrián-Tarrasón, 2013:288). As such, knowledge sharing is the core focus of this study, as it constitutes a key component for effective knowledge management.

3.2. KNOWLEDGE MANAGEMENT

3.2.1. Knowledge management themes

There are various themes related to knowledge management found in the literature to better address the applicability of knowledge management for effective and efficient organisational performance. Inkinen (2016:235), following a review of empirical research on knowledge management, identifies four high-level research themes, namely human-oriented, technology-oriented, organisational-oriented and management-process-oriented. Lee and Chen (2012:2) assert that a human-oriented approach to knowledge management would efficiently tackle organisational challenges by putting people at the centre stage of every transaction and activity and how they engage on knowledge management activities. It is understood that human capital is therefore central for making knowledge sharing successful as it is through its interaction and engagement in knowledge management that knowledge sharing would occur and be directed, distributed and used more effectively and efficiently in an organisation. Similarly, Grant (2011:121) acknowledges achieving knowledge management through the management and exploitation of human capital, organisational learning and communities of practices to better achieve organisational objectives. This points out the position that human capital or people

has in an organisation when it comes to addressing matters of knowledge sharing and its institutionalisation.

The use of technology is also found to be particularly important for knowledge management. Bhatt (2007:68) asserts that a technology-based approach using information communication technology (ICT) tools such as computer systems, intranets, and the Internet can be beneficial in harnessing knowledge for the success of an organisation. According to Kim, Lee, Chun & Benbasat (2014:401), using a knowledge management system for instance is useful to enforce collaboration amongst employees, organisation networks and establishing an organisational culture. Through recurrent use of knowledge management systems, knowledge can be captured, codified and shared across an organisation, enhancing organisational success and performance (Grant, 2011:125). An organisational-oriented approach is significantly associated with organisational performance from a learning and growth perspective, internal processes perspective and a customer perspective. The creation of organisational roles and groups is especially relevant for customer satisfaction as well as the decentralisation of power (Inkinen, 2016). This implies that in using an organisational-oriented approach, knowledge sharing is important as it is through the sharing of what employees and stakeholders know that knowledge is shared effectively and enables an organisation to meet its objectives. It also helps executives tackle challenges and problems faced in their organisations more effectively as knowledge sharing is entrenched in such a way that it makes the performance of the organisation more successful.

Finally, knowledge management receives focus from a management-process perspective, with an emphasis on knowledge strategy, leadership, knowledge protection and management backing for effective knowledge management (Inkinen, 2016:235). Other trends such as knowledge environment (which refers to the collaboration, communication and learning), knowledge representation (either explicit or tacit, ontologies), knowledge capture and knowledge sharing are highlighted by Giaglis (2003:12) as common foci with regard to knowledge management. In addition, a people-focused approach is applied in knowledge management. This responds to what Gordon and Grant (2004) allude to when they recognise the importance of implicating people (employees) accordingly for making sure that knowledge sharing is addressed effectively. After all, knowledge sharing would not take place if people were not willing to create it and engage with it for the benefit of the organisation. It is therefore suggested that using a people-focused approach implies realising the central role that people play when it comes to knowledge sharing performance and success.

3.2.2.   Knowledge management problems

An organisation's success lies in its ability to manage knowledge effectively. This is because knowledge management is critical for enhancing its competitiveness in the market. However, several difficulties may lead to its failure (Al-Ghassani, Kamara, Anumba & Carrillo, 2004:350). Lindner and Wald (2011) point out that a lack of organisational knowledge culture, effective technology as well as lack of management commitment or support (Cheruiyot et al., 2011:130) constitute some barriers to effective knowledge management in an organisation. Zipperer and Amori (2011:14) also identify cultural, managerial and information issues as primary concerns for organisations. From a cultural standpoint, this means an inability to motivate people to share their knowledge, a lack of social cohesion and communication tools as well as a lack of control over knowledge management activities, namely capturing, storing and sharing knowledge, all of which affect knowledge management success (Lindner & Wald, 2011). From a management standpoint, problems arise when organisations do not determine the responsibility for managing the knowledge, a lack of management support and ineffective technology infrastructures (ibid).

Janz and Prasarnphanich (2003:352) suggest that organisations keep struggling to develop a climate of trust built on culture, policies and processes, and technology that would embrace knowledge sharing in all its manifestations, such as learning, collaborating and sharing of ideas and information. As far as technology is concerned, the absence or inadequate use of technology constitutes an important barrier to effective knowledge management. Khalifa and Liu (2003:104) assert that the use of technology positively influences knowledge management performance. Knowledge management or knowledge sharing systems, and technology infrastructures such as intranets, and the Internet enable the capturing, storing (using a knowledge repository for instance), and sharing of knowledge in an effective and particularly efficient manner, and therefore suggest that organisations consider its implications of their success.

From a policy and process perspective, knowledge management would not be capitalised to its best potential if organisations did not build, transform, organise, deploy and use knowledge assets more effectively (Wiig, 1997:8). The lack of qualified and experienced knowledge workforce to address aspects of creating, storing and sharing knowledge amongst each other in an organisation is found to impact negatively on the success of knowledge management (Andreeva & Kianto, 2012:621). People, who are perceived as fundamental in terms of creating organisational knowledge, need to be sufficiently aware of the application of knowledge, distinguishing the type of knowledge whether tacit or explicit, where it is stored, accessed and distributed in the organisation in order to realise the power of knowledge management as efficiently and effectively as they should (Lee & Choi, 2014:188). Therefore, knowledge

management is unsuccessful in an organisation if there is a lack of motivation, sharing and use of knowledge, and if knowledge management strategies are not properly achieved. Such knowledge management strategies include having adequate policies, processes and technology for effective knowledge sharing (Plessis & Boon, 2004:77).

Taking into consideration the aforementioned challenges and research themes, recommendations have been made to conduct further studies not only on knowledge management but also its key components and processes (Atalay & Sarvan, 2014:666). Weber (2007:344) suggests that utilising the representation of knowledge to provide transparency and promote collaboration deserves thorough investigation. It is also suggested that further investigation into knowledge creation, the critical role of using technology, knowledge storage and knowledge sharing to better and fully address key components making knowledge management more successful is required (Janz & Prasarnphanich, 2003:372). Knowledge sharing in particular is highlighted in terms of being explored in more depth (Lin, Yeh & Tseng, 2005:46). The realisation is that successful knowledge management is contingent on successful knowledge sharing (Yuen & Majid 2007; Shorunke et al., 2014). Watson and Hewett (2006:146) indicate that successful knowledge management is not only based on the ability of organisations to properly create and manage knowledge, but also the effectiveness and efficiency by which that knowledge is shared. Therefore, this study focuses on knowledge sharing, not only because of its importance for effective knowledge management, but because knowledge sharing constitutes an important tool for preserving knowledge's valuable heritage, learning new techniques, solving problems, creating core competencies, initiating new undertakings, and ultimately gaining a competitive advantage (Hsu 2008; Wang, Wang & Liang, 2014:232).

Despite the array of problems reportedly experienced with knowledge management, the overarching theme is that knowledge management can only be achieved if people are sharing, and if this sharing happens in a systematic manner. Social and cultural issues, as well as technology and process issues are systemic issues. Thus, this research will attempt to unravel how to address this phenomenon from a systemic standpoint, and not merely address localised problems.

3.3.   KNOWLEDGE SHARING

3.3.1.   Definition of knowledge sharing

The previous section highlighted knowledge sharing as being fundamental and key to knowledge management success (Jonsson & Kalling, 2007). This is due to the fact that knowledge sharing is believed to be the cornerstone of a knowledge-management strategy, as better and purposeful sharing of useful knowledge translates into accelerated individual and

organisational learning and innovation (Riege, 2005). Knowledge sharing is seen and understood as a process of bridging organisational interdependencies inherent in ongoing organisational activities (Christensen, 2007:36). Sharing knowledge is important for an organisation as it can be viewed as an organisational innovation that has the potential to generate new ideas and develop new business opportunities through socialisation and learning processes of knowledge workers (Lin, 2006). Ke (2007) asserts that sharing knowledge with others allows the organisation to integrate knowledge from different sources, detect the windows of opportunity in the marketplace and capture positions of advantage.

Lin, Hung and Chen (2009) believe knowledge sharing involves a process of communication whereby two or more parties are involved in the transfer of knowledge. Therefore, knowledge sharing can be defined as a process of ensuring that knowledge is distributed and made available to all employees across an organisation (Wang & Noe, 2010). Similarly, Christensen (2007:37) defines knowledge sharing as follows:

> *"It is the process intended at exploiting existing knowledge, and knowledge sharing is, hence, defined as being about identifying existing and accessible knowledge, to transfer and apply this knowledge to solve specific tasks better, faster and cheaper than they would otherwise have been solved."*

Knowledge sharing refers to the provision of task information and know-how to help others and to collaborate with others to solve problems, develop new ideas, or implement policies or procedures (Wang & Noe, 2010).

3.3.2. Knowledge sharing modalities

3.3.2.1. Knowledge types

3.3.2.1.1. Tacit knowledge

Tacit knowledge refers to the knowledge that we possess in our minds, or our personal experience (Smith, 2001:314). In addition, Gao et al. (2008:5) define tacit knowledge as action-based and unformulated, highly personal and hard to transfer. It is described as the knowledge that cannot be explained fully, even by experts and is transferrable from one person to another through apprenticeship (Cheruiyot, Jagongo & Owino, 2011:129). Whitley (2000:4) states that "things can be called tacit if they cannot be expressed; they can be tacit if they simply have not been articulated or formalized; and embodied skills may also be considered as tacit". Tacit knowledge is therefore based on people's theoretical and practical experience and learning (Riege, 2005:21). Tacit knowledge is abstract and can be communicated only through the active involvement of the teacher (Dhanaraj, Steensma & Tihanyi, 2004). Therefore, in the

context of this study, tacit knowledge can be described as personal knowledge from an individual that cannot easily be expressed and shared.

3.3.2.1.2.   Explicit knowledge

On the other hand, explicit knowledge, also known as codified knowledge, is expressed knowledge (Rus & Lindvall, 2002). Greiner et al. (2007) concur, stating that explicit knowledge can be codified, collected, stored, and disseminated. Cheruiyot et al. (2011) describe explicit knowledge as knowledge which is articulated, captured and distributed in different layouts and is held in books, journal articles, databases, manuals or similar. Another way of defining this concept is to view it like Smith (2001:314), who declares that:

> *"Explicit knowledge can be perceived as academic knowledge or "know-what" that is described in formal language, print or electronic media, and often based on established work processes and making use of a people-to-documents approach."*

Explicit knowledge is therefore important since, once codified and adequately stored, it can help an organisation to effectively solve many problems such as connecting people with new or existing knowledge (ibid.). Explicit knowledge is therefore easily communicable and easy to store because such knowledge is codified and exists in proper forms such as documents, manuals, reports, information systems and knowledge repositories (Jasimuddin, Klein & Connel, 2005:106). The use of information systems such as a knowledge repository facilitates the storage, access and transfer of explicit knowledge more adequately (Loebbecke, Fenema & Powell, 2016:5). Despite the fact that some authors consider tacit knowledge more valuable than explicit knowledge because of its abstract worth, or the fact that explicit knowledge is more valuable because of its direct impact on people's willingness to engage in knowledge management and knowledge sharing activities, the two approaches are heavily and mutually dependent as they both reinforce the quality of knowledge produced and shared amongst employees in an organisation (Alavi & Leidner, 2011:112-113).

3.3.3.   Implication of tacit and explicit knowledge for knowledge sharing

Knowledge sharing is perceived to be the fundamental concept in knowledge management and entails making knowledge available to other people effectively in an organisation (Harker, 2014:4). The knowledge shared across an organisation can be presented in an explicit or tacit (implicit) form (Smith, 2001; Gertler, 2003). Smith (2001:314) indicates that explicit knowledge can be shared through extracting knowledge from a person, coding it, and using it again as required for customers through a people-to-document approach that includes policies, processes, guidelines, manuals or any other preferred means through which explicit

knowledge can be realised. With tacit knowledge, the process can be performed through face-to-face contact, chatting, and personalising knowledge.

Lu, Leung and Koch (2006) strongly acknowledge the influence of technology on explicit knowledge. Through the use of knowledge management systems, documents, reports and policies can be accessed from a database or knowledge repository and can be shared efficiently amongst employees. This makes the sharing of explicit knowledge easier when compared with tacit knowledge, which requires personal implication such as trust or personal belief, and therefore is not adequately influenced using technology. Interestingly, despite the fact that tacit knowledge is quite difficult in terms of personal knowledge being shared, Virtanen (2013:122) asserts that it is possible to convert tacit knowledge into explicit knowledge through a codification process involving, for instance, the conversion of personal ideas, belief or insights into written formats (documents, reports, manuals etc.). This means that, although its application is complex, tacit knowledge can effectively be shared by being explicitly converted (ibid.). Furthermore, a sense of well-being, social cohesion and trust can motivate people to share their tacit knowledge more effectively (Chumg et al, 2015:78). Therefore, for the purpose of this study, it is believed that tacit knowledge can be translated into explicit knowledge by means of policies, guidelines and other methods to translate personal beliefs and knowledge in the context of knowledge sharing and its institutionalisation. Surely, the use of technology would enable the implementation of procedures and other strategies needed to conceive tacit knowledge and distribute it more effectively and efficiently into explicit knowledge through direct interaction amongst employees, integrating and engaging with other departments across the organisation to make knowledge sharing entrenchment a reality and address its institutionalisation in such a way that it would be justified and understood.

3.3.4.   Knowledge sharing issues

It has been established that knowledge sharing is fundamental to knowledge management, even though it constitutes many other processes. The main reason is because knowledge management can only be sustained through continuous sharing of knowledge (Twum-Darko & Harker, 2015:282). Knowledge sharing, however, has become a crucial area of concern (Ghobadi, 2015). Concerns arise from observations that knowledge sharing is not efficiently performed due to many factors. According to Riege (2005), Carmeli and Gelbard (2013) this could be attributed to a lack of leadership and managerial direction in terms of clearly communicating the benefits and values of knowledge sharing practices. This involves not having proper directives and power to lead within an organisation, leading to mismanagement and a lack of governance. In the same vein, King and Marks (2008) assert that poor supervisory control can be problematic to knowledge sharing performance. Riege (2005) further adds that a lack of corporate structures, restriction of communication flows and a

shortage of formal and informal spaces to share, reflect and generate (new) knowledge can also impact negatively on the efficiency and effectiveness of knowledge sharing. Jonsson and Kalling (2007) also point out that the lack of organisational structure can constitute a challenge to knowledge sharing in an organisation. The lack of accessible knowledge, lack of effectiveness and efficiency of knowledge sharing processes, and a lack of social cohesion can also negatively impact knowledge sharing performance (Wickramasinghe & Widyaratne, 2012). This means that if the management of an organisation does not encourage the need for employees to socialise and communicate, they will not be willing and open to share knowledge amongst themselves. In addition, a lack of proper technology infrastructures can impact negatively on knowledge sharing performance (Ahmad et al, 2011:45).

Alavi & Leidner (2001) assert that communication processes and information flows drive knowledge transfer in organisations. The lack of socialisation, therefore, constitutes a crucial barrier to knowledge sharing as organisations do not facilitate knowledge-sharing networks (Mahmood et al., 2015:305). Tsui (2006:5) observes the following to be potential reasons for why knowledge sharing is often unsuccessful:

- Knowledge sharing often occurs within and among diverse disciplines whose members may not communicate and share their expertise and promising practices.

- Knowledge sharing occurs even when sharing knowledge is not the objective. Therefore, when informal knowledge sharing does occur, it may not be identified as a knowledge-sharing strategy.

- Knowledge sharing encompasses a broad scope of activities; a lack of agreement on what "counts" as knowledge sharing therefore limits collaboration and shared understanding.

She (Ibid.) further argues that knowledge sharing includes "[a]ny activity that aims to share knowledge and expertise among researchers, policymakers, service providers, and other stakeholders to promote evidence-based practice and decision making; and situations in which knowledge sharing may not be an explicit goal, but knowledge and expertise are shared nonetheless".

It is clear from the observations made by Tsui (ibid.), and the literature reviewed, that the problems pertaining to knowledge sharing relate to matters of structure and institutionalisation. Continuous knowledge sharing, knowledge renewal and knowledge creation cannot occur efficiently and effectively without an established organisational culture, infrastructure, procedures and policies for knowledge sharing (Malhotra, 2002; Marabelli & Newell, 2012; Abdul-jalal, Hayati, Toulson & Tweed, 2013). It is therefore important to address the issue of institutionalisation as an enabler for knowledge sharing (Twum-Darko & Harker, 2015).

Aspects of knowledge strategies are therefore important to consider since they are the driving force for an adequate and effective institutionalisation of knowledge sharing in an organisation.

3.4. INSTITUTIONALISATION OF KNOWLEDGE SHARING

The purpose of this study is to identify the social determinants for the institutionalisation of knowledge sharing using the concept of the duality of structure of structuration theory as a theoretical lens. Institutionalisation can be perceived as the process through which routinised actions can occur (Sukoco, 2015:154). The concept, although derived from institutional theory, (Tolbert & Zucker, 1996) has also been applied in structuration theory (Barley & Tolbert, 1997), whereby both refer to it as the process through which institution is created and reproduced over time. In the social realm, it is described as a process through which social systems are implemented and become routinised and embedded within an organisation's work processes and culture (Pishdad & Haider, 2013:644). In a study on the institutionalisation of organisational learning, Wiseman (2007:1131) asserts that the process of institutionalisation would be successful considering the fact that knowledge, being a social phenomenon, needs to be embedded in an organisation's memory through time and repeated processes. Thus, institutionalised knowledge influences and becomes part of the "organisation's own store of knowledge in the form of routines, rules, procedures, paradigms, structures of belief, strategies and culture" (ibid.).

In this research, the institutionalisation of knowledge sharing is achieved through the production of knowledge management strategies and reproduced through the processes of monitoring and evaluation. It is important to note that these knowledge management strategies are informed by social determinants that determine how institutionalisation is enacted. The enactment of the structure of those determinants to contribute to the institutionalisation of knowledge sharing are realised through the modalities of the concept of duality of structure, namely interpretive schemes, norms and facilities. Hence, the institutionalisation of knowledge sharing entails the entrenchment of knowledge sharing practices in an organisation through the identification of its social determinants using the concept of the duality of structure of Giddens's structuration theory (1984) as a canvas to address the objectives of this study.

3.4.1. Knowledge sharing strategies

The process of the institutionalisation of knowledge sharing is perceived in this study as the enactment of knowledge sharing practices. Its success is driven by its strategies and approaches which include people, an organisational culture for knowledge sharing, policies, procedures, processes and guidelines, as well as management support for knowledge sharing (Tsui et al, 2006:28-33; Ling, 2011). In addition, technology has been found particularly important to effectively disseminate knowledge across an organisation, and therefore

constitutes a fundamental element of the strategy for sharing knowledge (Sole & Applegate 2000; Kankanhalli et al., 2003). The consideration of these strategies is central to the institutionalisation of knowledge sharing at the organisational level. This is because the institutionalisation of a social phenomenon like this, refers to the embedment of ideals, techniques or social constructs that are formalised and reproduced over time (Harun, Van Peursem & Eggleton, 2012:265). In this study, the entrenchment of knowledge sharing practices can only be achieved through the identification of the social determinants being represented in terms of knowledge sharing strategies that enable its institutionalisation. The prospect of these implications is elaborated on in the following sections.

3.4.1.1.   People

3.4.1.1.1.   Trust and social cohesion

The social aspects of a knowledge sharing strategy should encompass enhancing trust and social cohesion. According to Chumg, Cooke, Fry and Hung (2015), it is important to develop a trust-based social network in the organisation as it will generate social cohesion. Developing a culture of trust amongst employees is therefore critical for knowledge sharing as it improves the attitude of employees toward sharing knowledge because of the closeness in the organisation (Wickramasinghe & Widyaratne, 2012; Usoro et al., 2007; & Mahmood et al., 2015). Trust in a firm is evident where the development of interaction between colleagues improves by sharing their knowledge (Mohammed et al., 2011:57). Trust can therefore impact on the knowledge sharing processes as the more people trust each other, the more they are open to sharing and distributing their knowledge (Usoro et al., 2007; & Finn, 2011).

Social cohesion encompasses the ideal of enhancing networking amongst employees. This is because social networking provides more opportunites for people to initiate interpersonal contact and it also encourages collaboration among co-workers. Social networking tends to create a suitable environment or atmosphere to share knowledge (Mohammed et al., 2011:57). Reagan and Mcevily (2015:169) argue that the more emotionally involved two individuals are with each other, the more time and effort they are willing to put forth on behalf of each other, including effort in the form of transferring knowledge. Organisations need to actively encourage innovative behaviour through social interaction among their members (Lee & Hong, 2014). Therefore, socialising not only increases the level of trust amongst members of an organisation, but also influences the degree to which employees are willing to share the knowledge and expertise between them (Yang & Maxwell, 2011:170). This pertains to addressing how tacit knowledge is translated more effectively. By interacting with each other, employees will feel more confident to share privileged knowledge with their counterparts, enabling them to open up and share their knowledge confidently, realising that it is for the organisation's performance as a whole.

3.4.1.1.2. Motivation

Riege (2005) states that motivation, encouragement, and stimulation of individual employees to purposefully capture, disseminate, transfer, and apply existing and newly generated useful knowledge is a way of reinforcing knowledge sharing in an organisation. Lin (2011), Swift et al. (2012) and Huang et al. (2013), however, contend that management needs to motivate employees to share knowledge amongst each other using rewards, incentives, promotions and feelings of appreciation within the organisation. This view is supported by Yang and Wu (2008), Yang and Maxwell (2011:166) and Wickramasinghe and Widyaratne (2012) who state that knowledge sharing is greatly increased through incentives and reward systems. Incentives can be in the form of better work assignments, promotions or monetary incentive procedures. Wickramasinghe and Widyaratne (2012:221) support this opinion, stating that monetary rewards could encourage knowledge sharing through individual contribution to databases, formal interactions within and between teams, and knowledge sharing across work units. Motivating factors such as reciprocal benefits, knowledge self-efficacy and enjoyment in helping others also influence employee knowledge sharing attitudes and intentions (Lin 2015:11). Motivating employees to engage with knowledge sharing activities amongst themselves enables relevant aspects of tacit and explicit knowledge. Motivation not only causes them to interact more openly with what they know, but they also understand that communication is needed to address the matter of knowledge sharing entrenchment more effectively. As such, without motivation, the sustainability of knowledge sharing and thus knowledge management as a whole is threatened.

3.4.1.2. Culture

One of the crucial entrenchments for enabling knowledge sharing, is having a culture in place. Various authors have tried to present different perceptions of culture within an organisation. According to Mcdermott and O'Dell (2001:77), organisational culture can be defined as core values, philosophy, structure and systems that drive an organisation's well-being. Similarly, Wilson (2001:356) states that: "organisational culture can be defined as the visible and less visible norms, values and behaviour that are shared by a group of employees which shape the group's sense of what is acceptable and valid. These are generally slow to change and new group members learn them through both an informal and formal socialisation process".

In the context of knowledge sharing, having an organisational culture creates and guides the enactment of trust, social cohesion and willingness to share information and knowledge amongst members of an organisation (Chiu et al., 2006; Wickramasinghe & Widyaratne, 2012). Thus, implementing a culture of trust among employees of an organisation will enhance their social cohesion and increase the willingness to share knowledge amongst them (Becerra et al. 2008; Lawson et al. 2009; Reagans & McEvily 2003). In other words, having social activities

in place that will improve the relationship between employees in an organisation creates trust and therefore motivates them to share their knowledge more openly.

Riege (2005) and Jonsson and Kalling (2007) emphasise the importance of developing an organisational culture for knowledge sharing. This includes organisational structures that facilitate transparent knowledge flows, processes and resources that provide continuous learning and clear communication of the company's goals. According to Mcdermott and O'Dell (2003), developing a proper organisational culture for knowledge sharing involves:

- Making a visible connection between sharing knowledge and practical business goals, problems or results; and

- linking sharing knowledge to widely held core values in the organisation; and enhancing networks that already exist, and enabling them with tools and resources.

Therefore, organisational culture does not only create a proper environment for social interactions and improve relationships among individuals, but it also defines the appropriate structures of governance, leadership and support exercised by management over different stakeholders within the organisations (Connelly & Kelloway, 2001; Mcdermott & O'Dell, 2001; Ju et al., 2010; Huang et al., 2013). Culture is thus an all-encompassing factor that deals with the overall systemic issues that prevent knowledge sharing from occurring on a social, process and technical level.

3.4.1.3.   Technology

Technology has dramatically enhanced the opportunities for knowledge accumulation and interaction between individuals and institutions (Arocena, Bo & Sutz,2015:6). Clarke and Rollo (2001), Riege (2005) and Alavi and Leidner (2001) note the use of technology as a strategic approach for facilitating knowledge sharing. Information technology (IT) has made it easier to acquire, store and disseminate knowledge, as many organisations are making use of IT to facilitate sharing and integration of knowledge (Kankanhalli et al., 2003:2). In the context of knowledge sharing, information technology increases knowledge transfer by extending an individual's reach beyond formal lines of communication (Alavi & Leidner, 2001).

Technology makes the exchange of knowledge easier and more frequent (Orlikowski, 2000; & Connelly & Kelloway, 2007). Aulawi et al. (2009:2241) state that "[t]he role of IT grows fast. First, it only functioned to keep static data. Now it becomes the connector of information among people." However, the design and use of information technology in an organisation is intrinsically embedded in social contexts, locale, politics and culture (Baroudi & Orlikowski, 1990:12). Information technologies (IT) such as intranets, databases, e-mail, web pages, bulletin boards, and electronic forums can be efficient tools for sharing knowledge (Casimir et

al., 2012:465). Similarly, Kumaraswamy and Chitale (2012:321) assert that IT facilitates collaborative knowledge sharing through various tools such as e-mail, chatting/instant messaging, discussion groups and video conferencing. Davison et al. (2013:96), assert that interactive information technology tools like these can promote interpersonal socialisation in the organisational context. They facilitate a continuous series of interactions that create and deliver knowledge. Having technology infrastructure such as a knowledge management system can be a modern means through which knowledge can be captured, and disseminated across an organisation (King & Marks, 2008:131). It is a system that can include a knowledge repository that facilitates the access and communication of relevant knowledge to relevant users, when, where and how it is needed (Woodman & Zade, 2007:188). Therefore, implementing a knowledge management/sharing system would be useful for the organisation as knowledge can be shared more effectively (Alavi & Leidner, 1999; Eduardo & Elridge, 2007).

A knowledge management system not only promotes the storage, accumulation and distribution of explicit knowledge, but can promote interpersonal socialisation in the organisation by having discussion forums, making information available in real time across the organisation (Baroudi & Orlikowski, 1990; Alavi & Leidner, 1999; Roux et al., 2006; & Gottschalk, 2006). In this manner, tacit knowledge is shared through discussion groups, instant messaging or video conferencing for face-to-face meeting, while explicit knowledge is shared in the form of manuals, policies and standard operating procedures. A knowledge management system which facilitates communication increases staff participation, reduces problem-solving time and provides faster results (ibid.). Alavi and Leidner (2001:114) define a knowledge management system as:

> **"***A class of information systems applied to managing organizational knowledge. That is, they are IT-based systems developed to support and enhance the organizational processes of knowledge creation, storage/retrieval, transfer, and application.***"**

Orlikowski (2000) highlights the important role that technology plays in the sharing of knowledge. Using technologies for knowledge sharing offers various benefits. As explained by Connelly and Kelloway (2001:9):

> *"By using various technologies, communication can occur in real time even from a considerable distance, most technologies are non-intrusive meaning that they can be accessed at the convenience of either party and may suit well for employees' shy for face-to-face interaction and it can also be used as a highly visible tool for management support for knowledge sharing".*

By investing in IT, people across an organisation will connect with reusable, codified knowledge and the conversations and exchange of tacit knowledge will be more efficient and improved (Boer, 2005:63). Therefore, irrespective of the size of any organisation, formal knowledge sharing practices depend hugely on IT infrastructures that include some kind of shareware and offer support in data acquisition, organisation, storage, retrieval, search, presentation, distribution and reproduction (Riege, 2005:30). Having advanced technologies in place not only increases information efficacy by reducing redundancies, but supports the exchange of organisational insights across time and distance barriers (Cabrera & Cabrera, 1999:699,703-704).

Having proper technologies in place includes implementing efficient knowledge management systems in the organisation. This is because it is believed that the level of employees' utilisation and the degree of perceived ease of IT applications have a positive effect on employee knowledge sharing capability (Kim & Lee, 2014:374). Therefore, the use of information technology supports knowledge management practices leading to more effective knowledge sharing among co-workers of an organisation (Sue et al., 2010:858).

3.4.1.4. Standard operating procedures

Knowledge sharing processes can be perceived as a set of steps or actions through which knowledge sharing can be achieved. The use of Standard Operating Procedures (SOPs), along with other knowledge management strategies all form part of the procedures leading to the entrenchment of knowledge sharing (Hendriks, 1999:92). The use of SOPs is considered as another driver for knowledge sharing intention. SOPs are procedures specific to an operation that describe the activities necessary to complete tasks in accordance with industry regulations, provincial laws or even standards, policies and procedures for the efficient running of a business. SOPs guide an organisation's performance through norms and guidelines. In the context of knowledge sharing, Standard Operating Procedures enhance an organisational climate driven upon policies, practice and procedure that motivate employees to share knowledge more effectively (Tohidinia & Mosakhani, 2010:614). The use of Standard Operating Procedures therefore positively influences knowledge sharing success as it can provide important performance improvements and guidance on business practices and routine activities, as well as provide an effective communication tool that enables employees to know and understand how aspects of knowledge management and knowledge sharing in particular are addressed across the organisation (Mckenzie & McTierman, 2013). Standard Operating Procedures can help an organisation to create knowledge assets (documents, manuals, reports), thereby facilitating the sharing of knowledge more explicitly (Perez-Araos, Barber, Munive-Hernandez & Eldridge, 2007:156). As such, having Standard Operating Procedures in place in an organisation, supports the means through which knowledge can be shared (Babu

& Gopalakrishnan, 2008:24). SOPs enable the enactment of processes, ensuring that knowledge is shared and distributed, particularly when other strategies, such as policies, for example, are not fully applied by every employee in an organisation.

3.4.1.5. Organisational structure

Organisational structure can be referred to as a structure through which management relationships, roles and responsibilities, levels of authority, and supervisory or reporting lines are facilitated as effectively as it should in an organisation (Altinay & Altinay, 2004:334). In terms of entrenching knowledge sharing, organisational structure plays an important role by positively influencing the willingness of employees to engage with knowledge sharing activities (Frost, 2014:9). The willingness of sharing knowledge is facilitated through inherent elements such as internal communication, leadership, governance, trust and various attributes (Sánchez et al., 2013:392). Furthermore, it supports upper management in harnessing and sharing knowledge more effectively, especially tacit knowledge (Sharratt & Usoro, 2003:189-190). This is because the prospect of having an adequate body is needed to address and influence how knowledge sharing should occur and be directed. The tone of how a culture of knowledge sharing takes place is established at the top, and is a driving force for social cohesion improvement that makes the sharing of tacit knowledge amongst co-workers across an organisation more effective (Ibid.). Organisational structure ensures the transparent flow of knowledge processes by providing clear communication of goals and strategies driving knowledge sharing practices (Riege, 2005:31). As such, organisational structure is considered important to drive and direct how knowledge sharing is entrenched in an organisation. It is particularly important for driving directives on how to deal with knowledge sharing and is reinforced by top management from a position of power (MacNeil, 2003).

3.4.1.6. Policies

According to Ruppel and Harrington (2001), policies and procedures foster organisational culture. Management must seek effective policies to encourage employees to share their knowledge with others in an organisation (Yang & Wu, 2008:1128). Kelloway and Barling (2000:19) support this notion, stating that "[o]rganisations can get employees involved in knowledge work by the creation of organisational policies (e.g. policies on knowledge sharing)".

Knowledge policies are needed to redress social constraints, such as inequalities and social exclusion (Arocena et al., 2015:4). If policies can foster an organisational culture, they can have a positive impact on inter-organisational (knowledge) sharing through increased trust amongst participants (Yang & Maxwell, 2011:171).

Kankanhalli et al. (2003:9) mention that organisations can enforce policies to alleviate misuse of organisational knowledge to further encourage knowledge contribution. Furthermore, Boella and Torre (2006:1) assert that policies provide the rules for securely managing knowledge by providing direction on what can or cannot be accessed and asserting the regulations around the enforcement of knowledge sharing. In addition, policies along with guidelines and procedures, will inform, formalise, direct and establish the role of people, technology and processes, thereby contributing to the entrenchment of knowledge sharing in an organisation (Twum-Darko & Harker 2014:12).

3.4.2. Corporate support for knowledge sharing

The consideration of corporate support in the uptake and sustaining of knowledge sharing is important not only for knowledge sharing success but also for better knowledge sharing strategies (Kearns & Lederer, 2003; Riege, 2005; Tsui et al., 2006). Management support is seen as a crucial factor for the efficiency and effectiveness of knowledge sharing in an organisation (Davenport et al., 1998; Lin, 2006; Twum-Darko 2014). Corporate support refers to the degree to which an organisation cares about the well-being of the employees through various policies, practices and leadership styles in relation to knowledge sharing activities (Shorunke et al., 2014:54). Management support can encompass organisational culture, policies, guidelines and procedure implementations. These different tools are crucial for knowledge sharing success in an organisation (Ruppel & Harrington, 2001).

Management support is not only manifested in providing the necessary environment and resources for knowledge sharing, but in itself constitutes a determinant for knowledge sharing. Twum-Darko and Harker (2014:10) assert that management support is an important factor for enabling knowledge sharing, as leadership is perceived to be important for the promotion of

the value of knowledge management. According to Connelly and Kelloway (2007:298), employees are interested in acting in accordance with management direction. Management support also involves other aspects, such as training and development that can be used to enhance self-efficacy levels among employees, performance appraisals and compensation (rewards and recognising systems), designed to encourage knowledge-sharing behaviour and enhance communication (Cabrera & Cabrera, 1999). De Long and Fahey (2000:122) propose further management actions that could enhance knowledge sharing in an organisation. These actions involve:

- Identifying norms and practices that are barriers to discussing sensitive topics,

- engaging collective responsibility for problem solving and senior management approachability, and

- identifying what new behaviours executive must exhibit to communicate and share knowledge.

Management support is found to be an important enabler for the dissemination of knowledge (Lee, Shiue & Chen, 2016:466) because it influences employees' willingness to both donate and collect knowledge with colleagues (Lin, 2007:326). This is because management support enables the creation of an organisational climate for sharing knowledge and it nurtures open communication, providing a stimulus to generate new ideas and respond effectively to new opportunities. This support is also likely to encourage both management and employees to socialise and interact frequently with each other, therefore driving knowledge sharing intention (Lin & Lee, 2006:83). Corporate support for knowledge sharing is therefore necessary for the creation and maintenance of a positive knowledge sharing culture and structure in the organisation (Connelly & Kelloway, 2007:298).

3.5. SUMMARY

This chapter outlined the concepts of knowledge management and knowledge sharing. The common knowledge management themes and problems in the literature were discussed to determine the gaps associated with the knowledge management phenomenon. This background sought to better channel the discussion so that it aligned to the concept of knowledge sharing in particular. In addition, knowledge sharing was explored in more detail, along with its different modalities. It was established that problems related to knowledge management and knowledge sharing are systemic issues that are more suitably addressed by exploring the aspect of the institutionalisation of knowledge sharing. Various determinants for the institutionalisation of knowledge sharing were explored, therefore leading to the elaboration of knowledge sharing strategies being informed by social enablers such as policies, people, processes, standard operating procedures, organisational structure, organisational culture and corporate support. These determinants are considered to be

important for the development of a knowledge sharing strategy for the entrenchment of knowledge sharing in an organisation. It is via the entrenchment of those strategies that the institutionalisation of knowledge sharing would be achieved. The next chapter will elaborate on the reseach approach employed in this study as well as the analysis process applied.

CHAPTER 4: RESEARCH DESIGN

4.1. INTRODUCTION

The previous chapter presented a review of literature on issues pertaining to the institutionalisation of knowledge sharing. Those issues were in line with the theory of structuration, identified as a powerful tool to study social life in terms of social practices (Hussain & Cornelius, 2009:200). The underpinning concept of duality of structure in particular was used as the theoretical lens through which this study was channelled. The concept of duality of structure, and its dimensions, played a central role in the conceptualisation of the problem relating to the institutionalisation of knowledge sharing from an organisational perspective and highlighted those issues that were further extended in the review of literature. The literature findings thus far affirm the variables underpinning the problem conceptualisation. However, the propositions made in respect of the extent to which these variables would indeed contribute to the institionalisation of knowledge sharing and the proposed relationships would have to be determined based on empirical evidence.

This chapter, therefore, elaborates on the research approach, research strategy and research design in line with the aforementioned implications, positing the adequate research methods applied. This study, engaging an interpretivist approach, is qualitative in nature and employs a mixed methods approach. This implies the use of qualitative and quantitative perspectives for data collection purposes in order to achieve the objectives for this study.

4.1.1. Research Methodology

It is evident from the literature that knowledge sharing is a social phenomenon. This is because knowledge sharing, seen as the most important strategic resource in organisations, is highly dependent on social relationships between individuals for its creation, sharing and use (Ipe, 2003:355). Taking into consideration the difficulty of organisations to effectively disseminate knowledge, and the importance of knowledge sharing for this purpose, there is a need to institutionalise knowledge sharing through the nurturing and enactment of social behaviours at the organisational level (Bock, Zmud, Kim & Lee, 2016:101). The need for institutionalisation rests in the fact that it provides a stabilising environment where knowledge can be shared effectively and efficiently through the resources, structure and culture that eventuate because of institutionalisation. Yet, such efforts are contingent on human involvement, thus making it a social phenomenon.

As such, the context of this study necessitated empirical evidence. Gillham (2000:97) points out that a research is empirical when account, logic and meaning of evidence collected are firmly grounded and transparently centred on observations or experiences. The data gathered

using direct observation, and in a proper and objective manner, are key principles of empirical research (Ritchie & Lewis, 2003:6). Since this study entails direct interaction with the units of analysis to interrogate such experiences, the research is empirical in nature (Leedy & Ormond, 2001:105).

In social and behavioural science research, there is a recurring debate on the relative value of different research approaches, especially on different epistemologies (positivism versus interpretive) and methodologies (qualitative versus quantitative) (Venkatesh, Brown & Bala, 2013:21). On the one hand there is quantitative research, which is an approach for testing objective theories by examining the relationship between variables that can be measured, typically on instruments, so that numbered data can be analysed using statistical procedures (Creswell, 2014:4). Qualitative research, on the other hand, is aimed at providing in-depth and interpreted understanding of the social realm by learning about experiences, perspectives and social and material circumstances (Ritchie & Lewis, 2003:3). However, combining the two approaches, concurrently or sequentially, to understand a phenomenon of interest has been widely used recently in research (Creswel 2008; & Venkatesh et al., 2013). This is due to the fact that research has become more complex in design and more flexible in the applicability of methods. In particular, from the interpretivist approach (qualitative), there have been concerns around the dependence on subjective and personal reasoning to interpret data generated from different qualitative data collection techniques (Hesse-Biber, 2010:455-456), while statistical analysis is also problematic due to the fact that quantitative data does not offer the depth of analysis required for such a study. Therefore, mixed methodologies is a more common and acceptable approach (Mackenzie & Knipe, 2006:6).

The application of the concept of duality of structure of structuration theory to study matters of institutionalisation of knowledge sharing in an organisation calls for a qualitative approach. This is due to the need to unearth in-depth perceptions, insights, and expressions of belief on this social phenomenon from an entirely novel perspective. These perceptions and insights are questioned in line with the framework of duality of structure, providing a unique means through which the social determinants for enabling institutionalisation can be discovered. However, to avoid the risk of producing results that are too subjective, quantitative analysis has to be introduced to corroborate the qualitative findings. Accordingly, a mixed-approach methodology was selected to obtain a range of insights for this research. While a qualitative approach was employed to obtain employee perceptions and insights on matters of institutionalisation of knowledge sharing, a quantitative approach was employed to test and support the qualitative constructs discovered (ibid.). Forza (2002:155), affirms the value of using these approaches together by identifying the role of survey research for such a context to be "confirmatory or theory testing", thereby employing them to test the adequacy of the

concepts developed through qualitative research, and validating the constructs gleaned from the qualitative research by using descriptive statistical analysis.

Qualitative research is used primarily to understand and explain the social phenomenon (Myers, 1997:2). It involves gathering, analysis and interpretation of data that will initially answer the research questions as guided by the underpinning theory (Anderson, 2010:1). The qualitative focus group unearths in-depth perceptions and beliefs about what there is to know about the phenomenon through an interpreted understanding (Ritchie & Lewis, 2003:22). Quantitative research, on the other hand, is widely employed to test a hypothesis by examining the relationships between variables (Creswel, 2008:4). Quantitative research has been found important to test hypotheses that are pre-constructed before the data collection (Burke & Onwuegbuzie, 2004:19). In addition, quantitative research has been particularly employed to test, support and validate constructed theories obtained from qualitative research, as it can expand on why, and to which degree, a certain phenomenon occurs (Hesse-Biber, 2010:466). Thus, the intention to use quantitative research in this study was to use the initial findings from the qualitative research and pose them to the broader population to support and validate the findings, but not to generate any new findings. The support manifested in explaining the degree to which the interpreted findings could be made applicable to the broader population.

Using a qualitative research approach alone may not reflect perceptions generalised to other people or settings and the results from its data collection can easily be influenced by the researcher's biases and thinking. In addition, the researcher may neglect to focus on theory testing, thus the knowledge produced may be too abstract (Burke & Onwuegbuzie, 2004:19-20). However, combining the two methods provides strong attributes that can only encourage a productive research (Jick, 1979:610). This opinion is supported by Sandelowski (2000:254) who recognises a mixed method approach as a powerful tool, as it includes a combination of data collection and analysis techniques and offers strong information to sufficiently answer the research questions.

Criticisms around the use of a mixed method approach in research include finding the link between the two methodologies (qualitative and quantitative), particularly because these research paradigms are so different (Munyua & Stilwell, 2010:15). Furthermore, according to Burke and Onwuegbuzie (2004:21), one of the problems researchers face is understanding how to combine these paradigms properly. A suitable link was established for this research by using the two approaches to achieve a depth and breadth of data respectively (Malina, Nørreklit & Selto, 2011:64). The depth implies gathering detailed perceptions and insights from the focus group on this phenomenon. The breadth refers to the quantitative aspect which offers the opportunity to broaden the scope of this research by extending the collection of data

to a wider range quantitatively to provide a fuller picture of the unit under study (Kaplan & Duchon, 1988:575).

4.1.2. Research Approach

In this study, an inductive and deductive epistemology were used. According to Thomas (2006:238), one of the main purposes of the inductive approach in qualitative studies is to allow the research findings to emerge from the recurrent, dominant, or significant themes inherent in raw data. It is a reasoning through which arguments based on particular observation or experiences are constructed and evaluated (Gregory & Muntermann, 2011) On the other hand, from a quantitative point of view, a deductive approach tests theories or hypotheses (Grafton, Lillis & Mahama, 2011:2). Furthermore in deductive research, existing theory can also inform and channel the development of hypotheses, the selection of variables and the way in which the researcher intends to use the meanings of the results of those variables (Ali & Birley, 1999:103). Integrating the two approaches provided a more comprehensive understanding of the research problem (Creswel, 2008:2). The approach chosen used a deductive approach to test the theory developed from the qualitative data. This was achieved by inductively examining the perceptions based on human experience of the phenomenon under study in a detailed and in-depth manner (Anderson, 2010:2); and deductively measuring the applicability of the qualitative results to the larger population in order to support the findings by using quantitative statistical means. This approach was therefore appropriate, taking into consideration that the underpinning theory channelled the data into the suitable context while the quantitative analysis ensured the reliability of the results (Hesse-Biber, 2010:466). The combination is therefore suitable for the enhancement of the validity of the research as a mixed method used to "enrich understanding of an experience or issue through confirmation of conclusions, extension of knowledge or by initiating new ways of thinking about the subject" (Bazeley, 2004:9).

The intention of using a mixed method approach in this study was to generate more insight inductively on the social determinants for the institutionalisation of knowledge sharing using structuration theory as a theoretical lens and to test the theory or variables developed from the qualitative perspective deductively. This deductive stance, done through a quantitative approach, was used in a supplemental manner in order to test the degree to which the variables generated from inductive research indeed occur. An interpretive case study, elaborated on in the subsequent section, supports the perceptions above.

4.1.3.   Research Strategy

A case study strategy was chosen for the purpose of this study. In particular, the case chosen is the Development Information and Geographic Information Systems (DI & GIS) department of a selected municipality in the Western Cape, South Africa. The choice to collect data from this particular department was based on the fact that it is an area considered to be highly knowledge intensive and because the department deals with matters regarding knowledge management and knowledge sharing for the whole organisation, therefore requiring a higher degree of knowledge sharing than other business functions. It is important to note that a case study is an "empirical inquiry that investigates a contemporary phenomenon within its real life context using evidence, and is extremely useful where one needs to understand a particular problem in more detail" (Noor, 2008:1602). Contemporary phenomenon hence entails an event, a real-life situation, an entity, organisation or even an individual when in-depth studies are conducted. Thus, given that the chosen case presently engages in knowledge sharing, it was suitable to investigate the phenomenon in terms of the stance that this study takes and particularly because it is driven by an underpinning theory, which requires intensive qualitative detail.

Case study research is also an effective way to provide a well-rounded picture, since many sources of evidence are used and it can also be useful in capturing the emergent and immanent properties of life in an organisation (ibid.). It is suitable for the investigation of pre-conceived complex social phenomena (Yin, 1994:1); and can be applied using a qualitative, quantitative or a combination of both methods (Darke et al., 1998:275). Thus, case study research is very useful to describe phenomena, and to develop and test a theory (ibid.). The approach followed in this study was to develop a theory about the institutionalisation of knowledge sharing, as interpreted through the theoretical lens of the duality of structure, and test the findings by using quantitative data. This particular case made it feasible to apply a mixed method approach due to its accessibility and relevance to the matter at hand. Furthermore, this case was indeed suitable in terms of investigating a pre-conceived phenomenon because it would have to be chosen based on the contribution it could make to the testing and refining the conceptualised problem.

Case study research can be applied in both quantitative and qualitative methodologies, thus making it suitable for positivist and interpretivist approaches, respectively (Gillham, 2000:10). This research is an empirical enquiry underpinned by a theoretical framework, thus being primarily qualitative research (Zaidah & Zainal, 2007:3). From an epistemological perspective, a case study applied in qualitative research is interpretive in nature, provided that it attempts to understand phenomena by accessing meanings given by participants (Darke et al., 1998:276). This study is therefore an interpretive case study due to the fact that the initial focus

of the research was to obtain perceptions and understanding on social enablers for institutionalising knowledge sharing. The theory was employed to guide the researcher in tackling the specific phenomenon in a manner which would not only identify the relevant themes for the given problem, but would link these themes through relationships, ultimately providing the meanings that add value to the case. Taking into consideration the fact that a case study, which is a type of qualitative research, is an empirical inquiry, and that it includes many variables of interest, theoretical propositions can be applied to guide the data collection and analysis of data (Yin, 1981, 1994).

A quantitative approach can also be applied in case study research, provided that it is not used for statistical generalisation of findings, but rather applied to develop a theory or to test or expand on a previously developed theory (Darke et al., 1998:278). The qualitative methods were employed to obtain a detailed analysis of the contemporary phenomenon, while a quantitative perspective was applied to test, support and expand on the findings generated from the qualitative study to broaden the scope of the findings.

The quantitative data collected was subjected to statistical analysis. Statistical analysis refers to a set of techniques for collecting, analysing, interpreting and presenting data in a numerical format (Larson, 2006:76), and has been found useful in determining the frequency or percentages of the occurrence of a phenomenon (Welman & Kruger, 2001:196-197). Statistical analysis can either be inferential or descriptive (Newbold, Boyd-Barrett & Bulk, 2002:5). Inferential statistics are applied with the intention to generalise the research findings from a sample to an entire population of interest (Allua & Thompson, 2009:168). Gillham (2000:80) refers to it as a "technique that provides meaningful and significant inferences from quantitative data". On the other hand, descriptive statistics is concerned with the description or summarisation of the data obtained from a group of individual units of analysis (Welman & Kruger, 2001:208). It deals with the summarisation of data with the intention to describe the degree of occurrence of a phenomenon (Thompson, 2009:57).

Descriptive statistics were employed based on the fact that the intention for conducting a quantitative study was not to generalise the findings but rather to broaden the scope of the findings generated from the qualitative study. Therefore, combining qualitative and quantitative approaches in case studies helps in the identification of new variables, or the refinement of concepts, which can then be tested to see if the various hypotheses are in fact in operation (George & Bennett, 2004:35). The theories were developed from the qualitative perspective by using the theoretical framework, while the use of descriptive statistics were to assess the degree of occurrence of the data obtained from the qualitative stance (White & Marsh,

2006:30). This supports the realisation that case studies draw on real life situations and test views directly in relation to the phenomena as they unfold in practice (Flyvbjerg, 2016:235).

4.1.4. Research Design

This study is of an exploratory nature, based on the intention to unearth in-depth perceptions and insights on the social determinants enabling the institutionalisation of knowledge sharing for a particular case. It is important to note that exploratory studies that are associated with qualitative research and interpretive case studies in particular, are the suitable means through which an in-depth understanding of a social phenomenon can be achieved. A quantitative aspect can also be suitably applied in an exploratory case study, provided that the quantitative data collection and analysis builds on the results of the qualitative stage, especially when a mixed method approach is employed (Creswell, 2007:211). Exploratory studies are designed to uncover underlying values, concepts and norms with the purpose to understand a phenomenon (Ritchie & Lewis, 2003:110). Unlike in explanatory research where the intention is to clarify and interpret relationships among variables, the purpose of using quantitative data and results is to assist in the interpretation of qualitative findings (ibid).

Knowing that this study is primarily qualitative in nature, and that qualitative research makes use of inductive reasoning, the choice for this study to be exploratory in nature is justified. Exploratory studies enable researchers to think, use their experience, and provide insight or propose new or innovative ways to understand and interpret reality (Reiter, 2013:9). This was the researcher's intention, given the novel manner of perceiving the phenomenon of knowledge sharing by using the concept of duality of structure, which has not been used before for a study of this nature. The case on which this exploratory research is based is described in the following section.

4.2. OVERVIEW OF CASE STUDY

4.2.1. Background

The selected municipality chosen for this case study was the City of Cape Town, located in the Western Cape Province in South Africa. Although the municipal entity was created over ten years ago, it has the oldest municipal structure dating back to April 1652 where the first council was created. The city is governed by the mayor and various council members and has the responsibility of providing services such as road maintenance, electricity, water, sanitation and other related services to almost 4 million people living in Cape Town, affectionately called "The Mother City". It is the second-most famous city after Johannesburg in the Republic of South Africa. The municipality comprises many departments such as finance, road and safety, health, tourism, human settlement, and information technology, amongst others. One department in particular received considerable attention for this study. This is due to the fact that this

department is highly knowledge intensive and because its primary function is to enable and strengthen the use and application of information and knowledge for the whole organisation. This ensures that the city is able to meet its constitutional mandate of a development local authority and supporting organisational improvement through effective information and knowledge management. The Development Information and Geographic Information Systems (DI & GIS) department was therefore found suitable for conducting a study on matters of knowledge sharing and its institutionalisation.

The DI & GIS department supports the corporate services directorate's objective of establishing an efficient and productive administration that prioritises delivery by focusing on information and knowledge as assets of the organisation that can support planning, service delivery, decision-making and more efficient management. The department has strengthened the use of emerging geo-spatial technologies and has expanded on the use of geo-spatial technologies and data to support service delivery. The department consists of six branches, namely Information and Knowledge Management, Development Information, Knowledge Resources and Support, Geomatics, Spatial Data Management and Record Management.

The DI & GIS department manages and shares city development and service information, research, policies and strategies. It participates in information and knowledge management forums and corporate projects and most importantly manages, creates, maintains, updates and shares information linked to departmental business processes and service delivery. The department also plays an important role in participating in information and knowledge management forums and corporate projects, and makes use of corporate-approved sources of information.

Furthermore, the department ensures that there is necessary technical infrastructure and application development for knowledge management, as well as the availability of the Internet and intranet as platforms for the availability of information and knowledge for communication purposes amongst business partners, relevant national and provincial government departments, other municipalities, external partners and stakeholders. Finally, the department is also responsible for influencing external stakeholders and partners by driving aspects of information and knowledge sharing and users of information with relevant national and provincial government departments across the country, facilitating information and knowledge sharing between metropolitan municipalities and the Cape Town City region, and engaging with other partners such as universities and professional bodies for information and knowledge sharing and professional and skills development purposes. Figure 4.1 depicts the role that DI & GIS plays within the municipality by explicating its interactions within the municipality with external stakeholders.

Internal Stakeholders

Political Structures:
- Oversight role
- Users of information

City departments:
- Manage and share city development and services information, research and policies
- Participate in information/ knowledge management forums and corporate projects
- Use of corporately agreed source of information
- Maintain, create, manage, update and share information

Business partners:
- Ensure necessary technical infrastructure and application development to support knowledge management and knowledge sharing
- Ensure the availability of the internet and intranet as a platform for the availability and communication of information and knowledge

contribute

influence

DI & GIS Responsibilities

✓ Improving the management of information and knowledge as key assets of the organisation to support planning and service delivery
✓ Ensuring the provision of geo-spatial data and service to support infrastructural and operational planning and service delivery
✓ Providing appropriate information analysis and research to guide and support city development planning and service delivery

contribute

influence

External Stakeholders

Relevant National and Provincial Government Departments:
- Information and Knowledge sharing
- Users of information

Other municipalities:
- Facilitate information and knowledge sharing between the metropolitan municipalities and Cape Town city region

Universities:
- Facilitate information and knowledge
- Support the Mayor's Office

Research institutes:
- Create Knowledge through research
- Facilitate information and knowledge sharing and professional and skills development

Professional Bodies:
- GIS knowledge Sharing
- Guidance on GIS Professional strandards

Figure 4.1: DI & GIS Responsibilities

Given that this department is already engaging in knowledge sharing activities, and likely has certain processes, standard operating procedures, policies and technology in place, all the employees involved in knowledge sharing activities within the DI and GIS department are well positioned to comment on whether these determinants indeed contribute to the institutionalisation of knowledge sharing at an organisational level as proposed during the problem conceptualisation.

4.2.2. Units of analysis

The population constituted employees from the information and knowledge management (IKM) department known as the Development Information and Geographic Information System (DI & GIS) department. These employees work under sub-sections of the DI & GIS department and operate as managers, professional officers, technicians and interns. Knowledge management is located in the Development Information and GIS department (DI & GIS), and comprises six branches, namely: Information and Knowledge Management; Development Information; Knowledge Resources and Support; Geomatics; Spatial Data Management and Record Management. The department supports the corporate services directorate's objective of establishing an efficient and productive administration that prioritises delivery by focusing on information and knowledge as assets of the organisation that can support planning, service

delivery, decision-making and more efficient management. Hence, the population was selected based on their involvement in knowledge management and knowledge sharing activities across all branches. The population constituted employees who participated in knowledge-intensive activities that provide the basis for this research. These employees were able to provide perceptions on the effectiveness and efficiency of knowledge sharing, as well as the challenges that they face in enabling knowledge sharing, which could shed light on the institutionalisation of knowledge sharing. This is because the department focuses on the sharing of corporate organisational information, knowledge resources, development of reports, strategies, policies, standards and other related information and knowledge, and as such provides better and efficient access to data in collaboration with all City departments.

4.3.   SAMPLING

As previously argued, in most studies utilising a mixed method approach, it appears that one methodology (either qualitative or quantitative) tends to dominate the other (Venkatesh et al., 2013:23). This study, for example, is predominantly a qualitative study, because the objective of this research is to determine the enablers for the institutionalisation of knowledge sharing in an organisation through qualitative research methods. The use of the quantitative approach is not to generalise but rather to support and validate the findings; therefore, probability sampling is not necessary. Given that the initial collection of data would be driven from a qualitative standpoint, a purposive sampling method was used.

Purposive sampling is classified as a non-probability sampling method used in qualitative research to enhance the understanding of an information-rich case (Sandelowski, 2000:248). This means that participants are selected based on informative characteristics, useful insights, and ideas relevant for the purpose of this study (Bricki & Green, 2007:9; Anderson, 2010:4). Therefore, this study focuses on one department, namely the Development Information and Geographical Information Systems (DI & GIS) department. The choice of department is based on the fact that it is a highly knowledge-intensive area of the organisation, and knowledge sharing is a major component of this department. As a result, the department cannot function without knowledge sharing activity.

A focus group comprising seven staff members positioned at lower, medium and senior management levels, working under the DI and GIS department, and operating across the six branches of this department, was selected to obtain insights and perceptions about the institutionalisation of knowledge sharing. As such this study made use of a focus group comprising seven staff members, which is a suitable size as expressed by Glitz (1997:386) and Ritchie and Lewis (2003:192-193), who recommend a focus group size of six to eight, or sometimes up to ten people. The focus group enabled the researcher to reach a saturation

point, which is the point at which no new ideas or insights are generated (Carlsen & Glenton, 2011:2). The selection of the seven respondents was done taking into consideration the desire to cover all bases for a better understanding of the phenomenon and the fact that those respondents operate across all branches within the department. The selection was also completed given their high degree of knowledge and experience in knowledge management and knowledge sharing activities.

The selected department comprised a total of fifty-three staff members. Seven employees were selected from this total for the focus group (qualitative stand); while the remaining forty-six employees were used for the quantitative aspect of the research (survey). In a study on the effects of quality and environmental management on competitive advantage in the hotel industry, Molina-Azorín, Tarí, Pereira-Moliner, López-Gamero and Pertusa-Ortega (2015:44) similarly employed a mixed method approach where first qualitative research was performed by interviewing 13 hotel managers, followed by quantitative research comprising a survey conducted with 355 additional hotel managers. Marshall (1996:522) asserts that the optimum sample size depends on the parameters of the phenomenon under study. This means that the scope of the research would determine the suitable sample size.

Table 4.1: Sample and Population of the DI and GIS department

Department	Branches	Level of Management	Selected for Focus Group	Selected for Survey	Total
DI & GIS	Information & Knowledge Management (IKM)	Manager	1	0	1
		Senior Professional Officer	0	1	1
		Technician	0	1	1
		Intern	1	1	2
DI & GIS	Development Information	Manager	0	0	0
		Senior Professional Officer	1	1	2
		Technician	0	5	5
		Intern	0	0	0
DI & GIS	Knowledge Resources & Support	Manager	0	0	0
		Senior Professional Officer	0	1	1
		Technician	1	3	4
		Intern	0	2	2
DI & GIS	Geomatics	Manager	0	1	1
		Senior Professional Officer	1	2	3
		Technician	0	10	10
		Intern	0	1	1
DI & GIS	Spatial Data Management	Manager	0	1	1
		Senior Professional Officer	1	1	2
		Technician	0	10	10
		Intern	0	0	0
DI & GIS	Record Management	Manager	0	0	0
		Senior Professional Officer	1	1	2
		Technician	0	3	3
		Intern	0	1	1

For this study, the scope was limited to a particular case, and the intention was never to generalise. It was therefore suitable to administer the survey to the remaining forty-six employees, which ultimately resulted in a one hundred per cent (100%) sampling rate for this scope. The choice to survey the entire department was based on the intention to obtain more

coverage in terms of the responses from the respondents and to increase the support and validation of the findings generated during the focus group. The sampling applied for the focus group and survey is shown in relation to the entire population in Table 4.1.

4.4.   INCLUSION AND EXCLUSION CRITERIA

The population comprised DI and GIS staff members appointed as managers, professional officers, technicians and interns. Their involvement in the study was based on their level of involvement in knowledge sharing, and their knowledge and experience in knowledge management overall within the organisation. Obtaining perceptions and insights from staff members operating at various levels of management diversifies the type of responses of the respondents based on their understanding and experience in knowledge sharing endeavours. Even though other departments within the organisation might have experience in knowledge sharing activities, only the DI and GIS department, which is mandated to deploy and maintain the use and application of information and knowledge to the organisation, would be able to provide the depth of knowledge required for this study. This is because the department engages intensively with knowledge sharing activities through various mechanisms, processes, and systems that have been found to influence matters of knowledge sharing institutionalisation within the organisation.

Employees operating in other departments within the organisation might also engage somewhat in knowledge sharing activities, but they were excluded from the data collection process. The reason for this is that this research focused on matters that required input from a department that is relatively mature in its knowledge management strategy and practices; matters related to the social implications and determinants for institutionalisation. Therefore, given that knowledge management is the core responsibility of this department, it was selected primarily on this basis.

4.5.   RECRUITMENT OF RESEARCH PARTICIPANTS

Prior to the selection of the research participants, a letter requesting permission to conduct research was sent to the executive director of corporate services and compliance of the organisation (see Appendix A). Following the approval by the executive director to conduct the study, an email was sent to one of the senior staff members of the DI and GIS department, who was assigned by the executive director of corporate services and compliance to facilitate the research process. After one week, the researcher sent a follow-up email to the same senior staff member. There was no response subsequent to the follow-up email. Thereafter, the researcher met with the director of the Development Information and Geographic Information System department to discuss the facilitation of the research project. A follow-up email was sent to the director with the necessary documents (proposal and interview schedule), in order

for him to understand the topic of research and recommend a suitable facilitator within the department.

The senior professional officer of information and knowledge was assigned to assist with arranging the focus group session for the collection of qualitative data. The selection requirements were articulated beforehand so that the sample was representative, and the senior professional officer carried out the given selection requirement. The focus group was followed by a survey that was used to support and validate the qualitative findings. Participants for the survey were selected after the focus group data was analysed and the emergent themes were discovered. The selection of the participants for the survey was facilitated through the intervention, assistance and monitoring of the senior professional officer. This included assisting the researcher to gather the participants, the distribution of the questionnaire to the selected participants as well as the collection of the completed questionnaire. Given that the sample for the quantitative survey was the rest of the department that did not take part in the focus group, the questionnaire was disseminated to all remaining respondents within the department.

4.6. DATA COLLECTION METHODS

4.6.1. Qualitative data collection technique

A focus group comprising seven staff members operating within the Development Information and Geographic Information Systems (DI & GIS) department was used to generate in-depth perceptions and insights on matters of institutionalisation of knowledge sharing in an organisation. The choice of this qualitative technique compared to other qualitative techniques, such as an in-depth interview, was based on the intention to take advantage of the group engagement and interaction with the topic of knowledge sharing and its institutionalisation to gather various feelings and insights on this phenomenon. It is important to note that focus group discussion has been found to be useful for identifying cultural norms and understanding the issues of concern within a sample in an affected population (Acaps, 2012:10). The researcher anticipated that such cultural norms and issues would more likely emerge within an interactive environment that allows for multiple perspectives to be put forward. The technique has also been found to be useful to obtain certain types of information when circumstances would make it difficult to collect data using other types of qualitative techniques (Grafton et al., 2011:10). The kind of information required for this study was determined to be more suitably acquired in an environment where deeper discussions would eventuate when a variety of participants with varying levels of experience, working in the same specialised department, come together.

Similar to other qualitative techniques, such as an in-depth interview, a structured, unstructured or semi-structured interview can be applied to a focus group (McLafferty, 2004:189). A structured interview guide entails having pre-defined questions from a compiled questionnaire designed for the data collection process. The limitation of this format of questioning for this study is that it does not provide room for the expected interaction amongst the respondents. Unstructured interviews can also be applied to identify important variables in particular to formulate questions to generate hypotheses for further investigation. However, given the use of an underpinning theory to guide the data collection, this format was not entirely suitable, as the relevant themes had to be incorporated into the questions, providing a degree of structure.

A semi-structured interview format can be applied using open-ended questions designed in a way that would not restrict the flow of information amongst group participants (Sobreperez, 2008:185). Therefore, this format lends itself to a degree of structure to accommodate the themes of the underpinning theory, but also a degree of flexibility to allow for the in-depth interaction that is sought for in the qualitative stance. For instance, in a study with the purpose of identifying the determinants of eating behaviours in students at a Belgian university, Deliens, Clarys, De Bourdeaudhuij and Deforche (2014) employed semi-structured questions in a focus group setting to get in-depth information about the topic by showing enough flexibility to allow for open interaction amongst students.

Given that this study is guided by a theoretical framework, the implication was to use semi-structured questions that aligned to the concepts of the theory. However, the focus group setting enabled a flow of communication to occur naturally amongst the respondents, allowing the group to interact naturally and more openly about views or opinions. The theoretical framework, however, served well to keep the discussion within the context of the study. Therefore, a semi-structured approach was applied using opened-ended questions. The types of questions asked, however, were guided by the themes. The choice for this technique was based on the intention to avoid the restriction of ideas, perceptions and opinions from different group participants, allowing them to express themselves freely during the process. The technique also allowed the researcher to probe with a view to clearing vague responses or to ask for elaboration of incomplete answers (Welman & Kruger, 2002:161), making the group discussion more engaging.

4.6.2. Quantitative data collection technique

Taking into consideration the fact that a focus group was conducted with seven staff members to obtain an in-depth understanding about the phenomenon, the findings did not necessarily represent the views of the wider population. Thus, the reliability of the findings could not be justified unless the qualitative data collected could be subjected to quantitative analysis (McLafferty, 2004:188). Therefore, a quantitative survey was conducted with the remaining forty-six employees operating within the department to broaden the scope of the findings generated from the focus group with the intention to enhance the reliability and validity of the research findings.

The use of a survey, which is a quantitative data collection technique (Parizi & Ghani, 2008), was found to be a suitable approach to generate reliable and valid data from a higher proportion of the sample within a reasonable time period. Despite the fact that the focus group as a qualitative data collection method, which would produce in-depth insights into the phenomenon due to its mainly open-ended questions, these insights were used to produce a quantitative survey which served to 'test' the reliability and validity of the results from the relatively small focus group. As such, quantitative data was gathered using a questionnaire as the data collection technique chosen for the survey. Questions were designed in a more structured way because this technique calls for close-ended questions which would serve the purpose of a self-administered questionnaire and is thus the most appropriate design for survey questionnaires (Welman & Kruger, 2001:146). In addition, given that the determinants for institutionalisation were obtained via the focus group, these variables served as the questions to be asked in the questionnaire, providing the necessary 'structure' that such a technique calls for. Thus, in essence, the questionnaire is an actual interview on paper (Jarbandhan & Schutte, 2013:673) drawing on the qualitative data with the intention of testing the variables obtained from the qualitative stand for reliability and validating purposes.

The structured questions were designed using a Likert scale, which is a scaling technique mostly used in survey data collection methods, and has been found suitable for descriptive analysis purposes (Welman & Kruger, 2001:150). A Likert scale has multiple categories from which respondents choose to indicate their opinions, attitudes or feelings about a particular issue (Beglar & Nemoto, 2014:2). Descriptive statistics was applied in the quantitative survey to assess the degree of occurrence of the data obtained from the qualitative stance, broadening the scope of the research findings generated from the focus group discussion. Through a Likert scale, participants can indicate the degree to which they agree or disagree with a given statement (Joshi, Kale, Saket, Chandel & Pal, 2015:397). Therefore, through the use of Likert scales, the ability to agree or disagree to a given statement by respondents would be highly reliable and the validity of the interpretations made from the data provided can be

established through a variety of means that can be profitably compared, contrasted, and combined with qualitative data collection techniques (Beglar & Nemoto, 2014:2). Given that the intentions of the quantitative survey were not to collect new data about the phenomenon, but to assess the extent to which the remaining forty-six employees agreed or disagreed with the variables or findings generated from the focus group discussion, the structured survey allowed the researcher to be in control of the responses to serve this particular need.

4.7. ADVANTAGES AND DISADVANTAGES OF THE DATA COLLECTION INSTRUMENTS

4.7.1. Focus Group

Several benefits are associated with the use of a focus group. One of the primary advantages of using focus groups in qualitative research is the ability to gather multiple views and opinions about a phenomenon through interaction with the group participants in one session. This saves time in comparison to individual interviews (Ritchie & Lewis, 2003:171). In addition, Kitzinger (1995:300) states that a focus group is a useful platform to encourage participation from respondents who are hesitant to be interviewed on their own. Focus groups can motivate participants who may not want to contribute to the discussion by engaging with other group members. By being attentive to the interaction amongst group members, the researcher can also explore differences in responses and examine the questions put to the researcher for clarification purposes, in order to reveal their underlying perceptions (Kitzinger, 1994:116). As such, the choice for this data collection technique is justified since the intention was to use collective engagement and the group dynamic to obtain in-depth perceptions from different group participants on matters of institutionalisation of knowledge sharing, which is a topic that is relatively underexplored. Incidentally, an additional benefit is that a focus group makes it easier to meet with respondents from the industry that do not have time to meet. The assistance from the senior professional to arrange a focus group made it possible to obtain a higher response rate to an interview in the form of a focus group than if the researcher had to meet with the respondents individually.

There are, however, some limitations associated with the use of focus groups. One issue is the pressure that the group exerts on its participants, influencing them to conform to the general views or opinions expressed, as opposed to real insights and views that are obtained in an in-depth one-on-one interview (Ritchie & Lewis, 2003:188). Furthermore, focus groups might be dominated by one respondent, thereby restricting the opportunity for group members to share their opinions accordingly (Rio-Roberts, 2011:314). In the context of this study, this issue was addressed based on the capacity of the researcher to direct the flow of responses from group participants, allowing them to express themselves without being afraid or influenced somehow. These potential issues were also addressed by creating a suitable,

relaxed and comfortable environment, encouraging group participants to freely express their views and opinions during the session.

A further limitation associated with a focus group discussion is the size of the group. This is because it is perceived that the number of participants in a focus group is not necessarily representative of the population. Bearing this in mind, the researcher planned to support the findings with a quantitative survey, as long as the focus group data collection would reach a saturation point. Taking into consideration that this study required both depth and breadth of data (Onwuegbuzie et al., 2009:6), the depth was achieved in the focus group, as in-depth perceptions and insights on the matter of the institutionalisation of knowledge sharing were obtained. The breadth pertained to the scope of the findings as generated through a quantitative survey.

4.7.2. Survey

In order to palliate the limitations associated with the use of a focus group, a quantitative survey was used to provide further explanations about the perceptions, vocabularies and hypotheses generated (Jenkins & Harrison, 2006:33). Mackenzie and Knipe (2006:3) and Carlsen and Glenton (2011) reveal that in mixed methods research approach, focus groups were mostly used as the primary data collection method, followed by a questionnaire for the survey part of the study. In most of the single-group case study research studies, a mixed method approach was applied in such a way that it would "support or expand upon qualitative data and effectively deepen the description". This means, as previously alluded, that both depth and breadth of data would be achieved. The depth, through the focus group conducted from the qualitative study to unearth in-depth perceptions on matters of knowledge sharing institutionalisation, and the breadth, in terms of broadening the scope of the findings generated from the focus group through means of a survey from a quantitative perspective.

One of the important characteristics of a survey is that it can be employed to a large population to enable gathering of maximum amounts of information for generalisation of findings (Ryan, Gannon-Slater & Culbertson, 2012:44). Although the intention was not to generalise, the benefit of access to a broader population certainly applied to this study. It is a quantitative method of data collection that requires standardised information in order to define or describe a variable or even to examine relationships between these variables (Malhotra & Grover, 1998:409). The technique is also easy and cost efficient to administer, and it can also provide good statistical significance of the findings by using statistical analysis (Gable, 1994:2). However, a major concern lies with the fact that the technique is not ideal to tackle complex issues due to the limitations in collecting depth of data, which is inherent in its structured format (Ryan et al., 2012:415). Researchers cannot collect more data from the respondents than what

is asked in the structured questions formulated, limiting the respondents to go in detail about their thinking and understanding of a given situation (Gable, 1994:3) However, given that the researcher's intentions were not to use the survey for depth, but rather breadth of data, this was not a limitation that affected this study.

4.8. DESIGN OF DATA COLLECTION

4.8.1. Interview schedule for Focus Group

The interview schedule for the focus group was developed using structuration theory, specifically the concept of duality of structure, as the guiding framework to determine the themes and relationships between those themes that should be explored. In addition, the literature served to inform the gaps that exist in relation to the institutionalisation of knowledge sharing which would be addressed by this research. The interview schedule comprised sixteen open-ended questions which were aligned to the themes introduced in the conceptual framework depicted in Figure 2.1.

The concept of Giddens's (1984) duality of structure served to inform the development of the interview schedule. This is because the interview was categorised according to the modalities of the framework of duality of structure, namely interpretive schemes, norms and facilities. The questions were designed and aligned based on each of the modalities and modes of interaction associated with the framework of duality of structure, from which the conceptual framework of Knowledge Sharing-in-Practice was developed. The specific determinants considered for the conceptualisation of the framework, and therefore also used as a canvas for the development of the interview schedule, emanated from the review of the literature which served to inform the researcher's conceptualisation of the problem. These themes, driven by the modalities and modes of interaction of the concept of duality of structure, and generated from the literature, included: knowledge management strategies, driven by aspects of policies, people, organisational structure, culture, information technology as well as corporate support for knowledge sharing. Furthermore, the questions were categorised according to the dimensions of the concept of duality of structure, being questions on the lines of communication, norms and facilities, respectively (Giddens, 1984). The intention was to align the collection of data to answer the research questions.

Table 4.2 below outlines the interview questions which were aligned to the concept of duality of structure, and thus to the research questions.

Table 4.2: Focus group Interview guide

Research objective: **Determine the various communication lines that would enable knowledge sharing in an organisation.**

What are the social determinants of communication lines (as interpretive schemes) for knowledge sharing?	(a) How do you ensure that knowledge sharing occurs in your organisation?
	(b) Do you use any form(s) of communication to enhance sharing of knowledge amongst employees? If yes, what type(s) of communication tools are in place to encourage knowledge sharing? If no, please elaborate on the reasons.
	(c) Do you have strategies in place to guide knowledge sharing activities? Please elaborate.
	(d) Do you find those strategies effective in a way that they enhance the lines of communication amongst co-workers? Please elaborate.
	(e) Do you make use of formal methods of documenting knowledge and creating knowledge bases enabling employees to share knowledge? Please elaborate by indicating how they influence/impact the sharing of knowledge in your organisation.

Research objective: Determine the provisions given by corporate governance for knowledge sharing.

What are the social determinants provided by corporate governance (as norms) for knowledge sharing?	(a) How would you describe your organisational culture in terms of knowledge sharing and what is management's role in influencing this culture?
	(b) What types of moral codes or values do you think are necessary for successful knowledge sharing in your organisation? Please elaborate.
	(c) How is or can knowledge sharing be entrenched as culture/norms?
	(d) What would you consider as motivating factors on your willingness to share knowledge amongst your co-workers?
	(e) Do you think that organisational structure plays an important role in the sharing of knowledge? (Yes/No) Please elaborate.
	(f) How has the organisational structure influenced knowledge sharing in your organisation?
	(g) What types of systems or mechanisms do you have in place to enable people to share knowledge?

Research objective: Determine the types of technologies (hardware and software) necessary for implementing knowledge sharing.

What are the social determinants of technology infrastructure (as facilities) for knowledge sharing?	(h) What types of technologies do you consider important in the enhancement of knowledge distribution within your organisation?
	(i) What would you consider as benefits of using technology to share knowledge across your organisation?
	(j) Are employees more willing to share their knowledge using information technology? What are the possible challenges you face with regard to technology and knowledge sharing?
	(k) Are processes in place to ensure that knowledge sharing takes place? Please elaborate.

4.8.2.   Questionnaire schedule for Survey

The choice for a quantitative survey to support the results from the qualitative study has been justified. The approach to constructing the survey was thus to use the determinants identified in the qualitative focus group and to support the findings with the statistical analysis of the perceptions of the broader population. The questions thus took on a structured format which would allow for the researcher to only test the variables which emanated from the qualitative data. The intention was not to produce any new data related to the variables found. The survey thus only served to assess the degree of consensus on the findings from the focus group.

The questions in the quantitative survey were, as in the focus group interview schedule, designed around the theoretical concepts of the duality of structure and employed a Likert scale format. The Likert scale has been the most-used type of scale in social sciences studies because of its easiness to gather feelings or appreciation to a given situation more effectively (Kidder & Judd, 1986). It is used to indicate the degree to which a respondent may agree or disagree on a view or statement (Welman & Kruger, 2001:150). This technique was found to be more suitable to measure respondents' attitudes toward social phenomena by enabling them to respond to an assertion or statement using ranked order such as "strongly agree" or "strongly disagree". Respondents participating in surveys are usually familiar and comfortable when responding to Likert scale questions, as they find it suitable to assess many dimensions of attitudes and opinions (Cooper & Johnson, 2016:174). Given the intentions of this study to conduct a quantitative survey to show what the rest of the population of the DI and GIS feel about the findings generated from the focus group, this questionnaire format was deemed to be more suitable for collecting the quantitative data.

Although there are other alternatives, such as using multiple choice questions and dichotomous questions (true/false, yes/no) (Welman & Kruger, 2002:146), using scale questions, such as the Likert scale, was more appropriate as it allowed the researcher to cover various facets of complex and multidimensional attitudes and values such as measuring the degree of agreement with the concepts and outcomes generated in the qualitative study, and also helped to mitigate the impact of the "random" error to which any respondent is inevitably subjected (Johns, 2010:9). This is because respondents' answers on each question are summed to give their overall score on their attitudes or value through Likert scale questions (ibid.). The interview questions aligned to the concept of duality of structure and the research questions using the survey are outlined in Annexure 1.

4.8.3.   Process of data collection

4.8.3.1.   Focus Group

Krueger and Casey (2001:4) stress the importance of creating a comfortable environment for conducting a focus group discussion. This entails placing the group participants under the right conditions, suitable for a well-run group session. Therefore, the focus group discussion was held on the premises of the DI and GIS department. This ensured a pleasant and familiar atmosphere for the group participants. The day and time of the session was scheduled at the convenience of the respondents, and was monitored by a senior staff member, who was more than helpful in assisting the researcher in this process. After three initial postponements, due to the unavailability of some of the group participants, a date was rescheduled to give all selected staff members the opportunity to participate in the session. The focus group session took place on the 12th February 2016 from 11:00 to 12:30, in a boardroom at the DI & GIS department.

At the beginning of the group session, the researcher accompanied by his supervisor, thanked the participants for taking part in the discussion, and the senior staff member for assisting with making the data collection process possible, despite multiple challenges. After a brief introduction of the researcher and his supervisor, a background to the research was presented. In addition, the researcher assured the respondents of their anonymity.

A digital recording device was used to record the focus group to ensure that the participants' responses were fully captured and it could be used to support the process of transcription, thus enhancing the validity and reliability of the data collected (Krueger & Casey, 2001:12). The focus group discussion was conducted in English. Questions were answered and, due to the alignment of the questions to the themes of the framework, categorisation of the responses according to the themes was made easier. The researcher, though guided by the interview schedule, refined certain questions from time to time with a view to clearing vague responses or to ask for elaboration of incomplete answers (Welman & Kruger, 2002:161), thereby making the group discussion more interactive. The respondents were free to participate in the discussion and they could share their views and opinions without being interrupted. Brannen (2005:181) acknowledges the importance of asking questions that would allow the participants to freely express what they think, and motivating them to open themselves more for in-depth insights on a given phenomenon. Therefore, when necessary, probing questions were asked to obtain more direction and in-depth responses, and to enhance the level of interaction amongst participants.

Following the data collection process, the transcription of the focus group discussion was completed. The process of transcribing the session started a day after the focus group

discussion was conducted. This was done with the view of covering every aspect dealt with during the focus group so that the researcher did not forget or omit important aspects that were covered. The process included transcribing the focus group verbatim by listening to the recording. From time to time, however, sections were summarised when repeated ideas and views were expressed.

After transcription was completed, a copy of the transcription was sent to one of the research participants and the senior member of the department who assisted the researcher. The intention was to ensure the accuracy and validity of the information presented, and to confirm that the transcribed responses were in accordance with what was discussed during the focus group. The transcribed document was then reviewed and analysed carefully.

4.8.3.2. Survey

After analysing the qualitative data, the researcher made use of the findings generated from the focus group to develop a quantitative questionnaire that was sent to the rest of the population under study. Only the most salient themes from the data were used to develop a set of questions. The distribution of the questionnaire to the staff members from the DI & GIS department was done by the senior staff member assigned to assist the researcher.

The process of quantitative data collection started on the 30th May 2016, and took two months to be completed. The survey was distributed via email to the rest of the forty-six employees operating the DI & GIS department. The senior professional officer provided a list of email addresses of the relevant participants to whom an invitation to participate in the survey was sent.

The email invitation outlined the purpose of this study, an overview of what had been done in terms of the focus group that was conducted, as well as relevant documents supporting this invitation. This included the consent letter confirming the approval by the organisation to conduct this study, as well as the questionnaire used to conduct the survey. This email is outlined in Annexure 2. Due to the initial limited responses from the respondents, a follow-up email was sent after two weeks. The process ended on the 30th July 2016. In total, twenty completed questionnaires were received via email, after which the data analysis was performed.

4.9. DATA ANALYSIS AND VALIDATION

4.9.1. Analysis

The process of analysing the data included regrouping, summarising, and examining the data in such a way that the findings addressed the primary objectives of the study (Rabiee,

2004:657). According to Thomas (2006:238), the purpose of data analysis from an inductive perspective entails:

- Condensing varied raw data into brief summary formats;

- establishing relations between the research objectives and the summary findings derived from the raw data in a way that would answer them; and

- developing a model or theory about the underlying structure of experience or processes presented in the findings.

Data analysis for this study was therefore the process through which key words associated with themes were extracted from rich data narrative, coded, grouped and summarised based on similar categories to provide meanings and answers to research questions (Yin, 1994:5; Gillham, 2000:25). Therefore, data analysis entailed making sense of a large amount of data and interpreting that data with the purpose of creating a framework for communicating the essence of what had emerged from the study.

4.9.2.   Analysis technique

4.9.2.1.   Content Analysis for focus group

A wide range of methods and techniques exist today to analyse qualitative data efficiently and effectively (Sandelowski, 2000:334). Analysis involves rigorous techniques to gather, analyse and interpret in-depth data in a way that would be applied in social studies (Patton, 1999:1190). In the context of a focus group, Bender and Ewbank (1994:68) present two alternatives: one being content analysis using systematic coding of rich data, analysed to provide meanings to a phenomenon under study; and the other being discourse analysis used in ethnography research, which assesses the way knowledge is generated through different discourses and performance in social study (Ritchie & Lewis, 2003:12). Since the objective of the study is to obtain an in-depth understanding of perceptions related to the institutionalisation of knowledge sharing in an organsation, and given the orientation of this study to align to the concept of duality of structure to provide the themes that guide systematic coding of data, content analysis was deemed to be more appropriate. Rich narratives had to be carefully analysed to generate in-depth patterns and meanings enabling understanding of this social phenomenon. Therefore, content analysis was selected as the more effective technique to analyse the data gathered from this study.

Content analysis is an effective analysis technique that can be used with either qualitative or quantitative data, from an inductive and deductive perspective, to prepare, organise and report results of an interpretive study (Elo & Kyngäs, 2008:107; Elo et al., 2014:1). This means that from a qualitative stance, content analysis includes coding and category creation for the

grouping of similar patterns, while a quantitative stance entails the use of matrix categorisation development (ibid.). However, from both points of view, content analysis is seen as an effective way to analyse data.

In qualitative research, Hsieh (2005:1278) defines content analysis as a method used to interpret rich text narrative through processes of coding and identifying themes or patterns that would provide understanding of the phenomenon under study. The coding process refers to using content analysis to develop a coding scheme to guide coders to make decisions in the analysis of content (Hsieh, 2005:1285). It is known as a labelled description used to categorise raw data generated during the data analysis (Gale et al., 2013:2). Coding of data can be done manually by a human being, or automatically using computer-based analysis software. As explained by Krippendorff (1989:404), a human coder can be less reliable when conducting analysis, but can be more useful to decrypt sensitive and complex information; which is in contrast to automated coding, which offers better reliability of the data analysis, but tends to omit in-depth complex ideas from the data.

Categories can be defined as clustered codes grouped according to concepts or similar ideas (White & Marsh, 2006:3; Gale et al., 2013:2). They are patterns directly expressed in the text generated from the data (Hsieh, 2005:1285). Themes, on the other hand, are known as interpretive concepts or suggestions of ideas that would explain aspects of the grouped and categorised data (Gale et al., 2013:2). Data is known to be the most important content analysis instrument as it is the data, usually in the form of text generated from written documents (e.g. transcripts), verbal discourse (e.g. voice recordings) or any visual representation (e.g. videos) from which meanings are attributed to understand a phenomenon (Krippendorff, 1989:404). When conducted with proper attention, content analysis offers many advantages, such as analytical flexibility, nonintrusiveness and trustworthiness of the findings generated (Duriau et al., 2007:23). Consequently, content analysis is the technique of preference in organisational studies.

Hsieh (2005:1279-1282) describes three types of content analysis: conventional content analysis that is used generally to describe a phenomenon where existing theory or literature of the research are scarce; direct content analysis that focuses on the study of phenomenon existing from theory or previous research seen as incomplete and may require further study; and summative content analysis used to understand contextual meanings of words by identifying and quantifying them. Given that this study was guided by the concept of duality of structure as its theoretical lens, and the variables generated from literature to conceptualise the research problem were in line with the theoretical framework of duality of structure, selecting conventional content analysis to address the research questions was justified.

Kohlbacher (2006:25) supports theory-guided analysis as one of the important strengths of qualitative content analyisis. This is because one important characteristic when using qualitative content analysis for theory-guided research is that researchers constantly tend to compare theory and data gathered. It also iterates toward a theory which closely fits the data collected (Eisenhardt, 1989:541). Furthermore, an important feature of theory building is the comparison of the emergent concepts, theory or hypothesis with literature, as it enchances the internal validity, generalisability and theoretical level of theory building from case study research (ibid.). Using social theory in qualitative content analysis is therefore useful as it enables an alignment between the various features of the social theory and the concepts and theories obtained from the data gathered, since the social theory is usually used as theoretical canvas through which research is conducted (Halkier, 2010).

Taking into consideration the fact that themes are known as interpretive concepts or suggestions of ideas that would explain aspects of the categorisation and grouping of data, the themes were first determined by the theoretical framework, which were the three modalities, including interpretive schemes, norms and facilities. Thus, these themes guided the research. The codes, related to the same theoretical concept of duality of structure, are perceived as the determinants identified by the researcher from words or clusters of words. The codes are the determinants that were generated from the literature review and which have been determined in the conceptualisation of the problem of this research. Nevertheless, despite being guided by those codes, it did not limit the researcher to consider any new codes that emerged from the data analysis process. The codes were linked to themes, hence providing a manner of categorisation.

Even though a lack of assessing the trustworthiness of the data, a lack of coding constistency checks and a lack of a proper method of applying this technique can constitute some potential limitations to content analysis (Thomas, 2006:243), this study applied content analysis in a systematic and rigorous fashion (White & Marsh, 2006:41). This is based on the fact that every aspect surrounding the success of this technique to analyse the data generated from the focus group was addressed. For instance, a lack of coding consistency usually occurs when the codes are not predefined beforehand. Thus, the researcher does not know what they are looking for or might overlook pertinent data. However, this research not only used a theory to guide the data collection, but also used the literature to propose a problem conceptualisation, thus providing the basis for the predefined codes and themes in the problem conceptualisation, which were in line with the concept of duality of structure. As such, the researcher applied the coding consistently throughout the research. Regarding the trustworthiness of the data collected, a transcription of the data collection process, in this case the focus group discussion, was developed for validating the findings and perceptions expressed during the focus group.

The coding was done manually. This is due to the fact that the researcher intended to decrypt sensitive and complex information which would not have been easily gleaned using automated coding (Krippendorff, 1989:404). A spreadsheet was used to capture the answers to the questions posed in the focus group. Each question was captured into a separate worksheet. The questions were designed according to the themes, which were guided by the dimensions of the concept of duality of structure, namely interpretive schemes, norms and facilities. Coding was performed by identifying words, phrases or clusters of ideas that emerged when reading through the responses. These codes were roughly guided by the problem conceptualisation and the literature review that provided a rough idea of the determinants to look out for. However, the coding was primarily guided by the data. Thus, the theoretical framework was the first point of departure for developing the main categorisations of the findings, while the second phase was to use the conceptual framework to guide the coding of the raw data to determine the emergent determinants for each categorisation.

4.9.2.2. Descriptive analysis for survey

Descriptive statistical analysis was employed to analyse the findings generated from the quantitative survey. Welman and Kruger (2001:208) describe descriptive statistics as a process through which description and summarisation of the data obtained from the units of analysis is achieved. It is a procedure that involves organising, summarising and interpreting sample data numerically (Coughlan, 2007:662).

Descriptive statistics are driven by nominal, continuous and ordinal measurement (Fisher & Marshall, 2009:94-95). The nominal level of measurement is concomitant with the scoring of cases or participants into broad categories. Nominal scales are used to label variables without quantitative values (Welman & Kruger, 2002:202). A good example of a nominal scale is determining gender. The respondent would have to choose either male or female. Continuous measurement deals with measuring infinite scales where the increments on the scale are of equal distance and can be divided into intervals and ratio levels of measurement (ibid). Time is a good example of interval data, as it is known, consistent, and measurable. Ratio scales entail order by providing the exact values between units. Height and weight are good examples of ratio data. They tell us about the order and the exact value between units. Ordinal measurement, on the other hand, is used for variables that cannot easily be measured and occurs not only to distinguish between various categories, but to indicate the rank order of the various categories (Welman & Kruger, 2001:204). Satisfaction and happiness, for instance, are good examples of ordinal data.

Welman and Kruger (2002:149-153) suggest various means through which nominal and ordinal data could be measured for descriptive analysis. This includes standardised tests such as the mode, which is the score achieved more often during a data set analysis, frequencies (bar diagram or pie chart, provided that the distribution is across categories), the Chi-square test and correlation coefficients, which are other analysis techniques used for the administration and the scoring of the responses gathered for nominal data (Welman & Kruger, 2002:202). Attitude scales comprising the Likert scale, the semantic differential, the Guttman scale and the Thurstone scale, mostly applied to ordinal measurement, assess the disposition toward a particular issue which may be influenced by individuals and events and is less permanent than personality and traits (Welman & Kruger, 2002:153). Using Likert scales (being a type of ordinal measurement tool), numeric categories can be applied to check the degree of agreement or disagreement with a collection of statements (Welman & Kruger, 2001:150; Fisher & Marshall, 2009:94). As such, ordinal data can be measured using the median, which is known as the middle score in a list of ranked scores (Welman & Kruger, 2002:205). If it is understood that mean and median are more suitable to analyse ordinal data, the use of frequeny distribution also plays an important role (Jones & Moyer, 2016). Frequency distribution is a valuable means through which ordinal level data can be described and consists of a description of a number of subjects by selecting each possible option. It may also include the sample percentage that this number represents and is also suitable to analyse data generated from a Likert scale dataset (Thompson, 2009:58). These numeric categories can subsequently be used to determine the measure of central tendency, such as the mode, which is the value that occurs more frequently in a data set, the median, which is the value that is exactly in the middle of a sample, and the mean, which deals with average. It is a set of measures through which frequency distribution, percentile, maximum, minimum and the range are part of the measure of dispersion (Fisher & Marshall, 2009:95). Consequently for the purpose of this study, frequency, mean and median were the analytical techniques used to conduct descriptive analysis. Not only because they have been found suitable to organise and describe characteristics of the findings using numerical fact or data in either a table or graph format, but also because they provide an easier understanding and interpretation of either nominal or ordinal data commonly employed in Likert scales for descriptive analysis purposes (Fisher & Marshall, 2009:95). This study employed descriptive analysis using a Likert scale with numeric category measures to analyse ordinal data obtained from the survey since the purpose was not to generalise the research findings but to assess whether the rest of the population of the DI and GIS department agreed or disagreed with the variables generated from the focus group, broadening the scope of the research findings and enhancing the validity of the findings generated from the qualitative approach.

The process of conducting descriptive analysis was achieved using a computer software package called Statistical Package for the Social Sciences (SPSS), which was found to be suitable to analyse and generate descriptive statistics (Larson-hall, 2010:199). The choice to select this software-based tool, as opposed to manual data analysis, is justified based on the fact that using manual data analysis is tedious and time-consuming, and if not carefully applied, can engender errors that will have negative effects on the outcome of the analysis done (Thompson, Schwartz, Davis & Panacek, 1996:76; Muijs, 2005:85). SPSS is more frequently used in social science studies, as compared to other data analysis software packages, because it is user-friendly, thus making it possible to accomplish any data analysis-related tasks with reliable and accurate results. In addition, its capabilities extend to methods for data description that include simple inference for continuous and categorical data and linear regression. It also provides a means to analyse multivariate data including factor analysis and cluster analysis (Landau & Everitt, 2004:12). Thus, it is a versatile tool for the purpose of quantitative statistical analysis and could be suitably applied to analyse the ordinal data collected for this study.

4.9.3.   Reliability and validation

Patton (1999) considers various ways to improve the credibility of qualitative analysis. This includes maintaining effective data collection and analysis methods, triangulation (combination of research methods, mostly qualitative and quantitative), as well as ensuring reliability and validity. Despite making use of a mixed methods approach to data collection, the study was mainly qualitative in nature, and therefore reliability and validity is considered from a qualitative perspective. Ritchie and Lewis (2003:269), believe that the reliability and validity of data is crucial to the "robustness and credibility" of a study, as both help to define the strengths of data in qualitative research.

Reliability is associated with consistency and repeatability (Kidd & Parshall, 2000:302). It implies being able to produce the same results over and over within different environments (Venkatesh et al., 2013:33). A way to achieve reliability in this study was through the systematic coding of the data through the use of the theoretical concept of duality of structure. Consistency and rigour were ensured by the fact that the theory provided the themes and predefined codings, ensuring that the researcher did not deviate. The predefined codes were a rough guideline because the researcher kept in mind the possibility of seeing new determinants emerging from the raw data, therefore ensuring there was no bias. Another way to ensure reliability of the data analysis was to keep records of the focus group transcripts and compare them with the data collected using the survey in order to check the accuracy of the findings gleaned during the data analysis process. Finally, reliability of the analysis of data was achieved through the fact that the researcher decided to conduct manual content analysis

instead of using computer-based analysis software. This ensured more effective analysis of the differences in insights provided by the respondents by considering the meanings behind statements made. This is something that computer-based analysis programms have difficulties achieving.

Validity of analysis, on the other hand, refers to the degree to which the analysis of the data gathered is trustworthy (Thomas, 2006:234). It relates to the honesty, authenticity and genuineness of the research data in qualitative research (Anderson, 2010:2). Validity in the context of this study was primarily achieved through sharing the data collected with the DI and GIS staff members for their validation and approval. This would ensure that what was said or answered by the respondents during the data collection process (focus group), was exactly what was reported and disclosed in the findings. The intention was to obtain feedback for the purpose of corrections or suggestions (Elliott & Timulak, 2005:156). Furthermore, validation was achieved by applying triangulation (Anderson, 2010:2). This involved comparing the data generated from the focus group to the data collected via the surveys to ensure that the findings indeed represented the views of the respondents to describe the phenomenon under study.

4.10.   CONSTRAINTS AND LIMITATIONS

Several limitations were observed during the course of this study. One limitation was the complexity of using mixed methods approach and its applicability to the research. Burke and Onwuegbuzie (2004:21) assert the importance of the researcher to really learn the applicability of combining qualitative and quantitative approaches. Although the study was mainly qualitative in nature, the researcher had to learn more about the combination of qualitative and quantitative methods, and how to apply them appropriately. This included obtaining more knowledge about both methods, knowing their benefits and drawbacks, the epistemology dilemmas, the choice of data collection instruments, as well as the approach to conducting research when employing a mixed method approach (Bryman, 1984). In order to address these possible limitations, the researcher had to position himself very firmly in terms of his epistemological stance, which was primarily qualitative. This served to inform the subsequent decisions made about the chosen research methods. For example, given that this study aimed to explore a relatively underexplored issue relating to knoweldge sharing, a qualitative stance was deemed more suitable to study this phenomenon on a detailed level. The theoretical underpinning only strengthened the researcher's stance by providing the guiding framework to collect the data. Thus, despite the fact that this research employed a supplemental quantitative survey, it is primarly interpretivist in nature and thus in its epistemological stance. Quantitative data was not collected from a positivist stance because it was not intended for the purpose of generalisation.

Time constraints presented another limitation in the study. The availability of the respondents was a major constraint that necessitated a focus group discussion, rather than using one-on-one, in-depth interviews. The fact that a focus group was used in this study might have constituted a constraint in terms of the quality and depth of data that could have been collected and the results that could have been generated, as compared to individual in-depth interviews. However, bearing this possible limitation in mind ensured that the researcher intentionally probed for deeper and more thoughtful answers from the respondents. A survey served as a means of supporting the data generated from the focus group to ensure that the views of the focus group were shared by the rest of the department. Given the fact that the data was collected from a relatively small focus group, a survey would support the findings to extend the study to the rest of the department within a shorter timeframe.

The selection of only one department (DI & GIS) as the unit of analysis presents a limitation in terms of the generalisability of the findings. It is believed that perceptions gained from an individual or a department of an organisation do not necessarily mean that these perceptions extend to the rest of the organisation. As such, findings generated from one case could be applied to another setting for reliability and validy of a study of this nature (Anderson, 2010:2). Despite this view, the intention of using the the DI and GIS department as the case study was to ensure that rich, in-depth views could be obtained from a highly knowledge-intensive department engaging in knowledge sharing activities to share their experiences that would shed light on the phenomenon under study.

4.11.   ETHICAL CONSIDERATIONS

A consent letter, providing the necessary permission for the researcher to conduct the research in the organisation, was issued by the executive director of corporate services and compliance prior to the data collection process (see Appendix B). This was a way to ensure that the study was not conducted unlawfully and the study could take place without any interference. After engaging in a discussion with the director of the development information and geographic information systems department, the researcher submitted the research proposal, along with the consent letter, to a senior staff member in order to provide a background to the study and provide an understanding of the intentions of the research. This ensured that the participants understood the context of the study prior to the data collection, and that it adhered to the conditions stated in the approval for conducting the research. The conditions included the fact that the name of the organisation should not be used without their permission when the research results are published and that the research has been conducted in the personal capacity of the researcher and does not reflect the view of the employer, being the municipality.

During the focus group, the participants were assured that the information shared would be used for academic purposes only. The researcher also guaranteed that the identities of the participants would be treated as confidential. In addition, it was emphasised that the focus group participation was voluntary and that every participant had the right to refrain from contributing if they did not feel like doing so. The researcher furthermore informed the group participants that the group interaction would be recorded using a voice recording device and the recorded session would be kept safe and would be used solely for academic purposes. The researcher reminded the group participants that the focus group discussion would be transcribed using the recorded session and would be sent to them for a validity check. This served to ensure that the information provided on the transcript indeed reflected what was said by the different group participants.

The transcribed focus group discussion was analysed to generate findings on the institutionalisation of knowledge sharing. The findings were then used to develop a questionnaire for the survey that was sent to the rest of the population under study. The findings from the survey were not intended for generalisation, but were used to support the findings generated from the focus group discussion.

CHAPTER 5: ANALYSIS AND INTERPRETATION

5.1.   INTRODUCTION

The previous chapter discussed the research design applied in this mixed method study. It focused on the research methodology applied in both the qualitative and quantitative stances of the research. This chapter elaborates on the results derived from the focus group and survey performed with managers, professionals, technicians and interns operating in the Development Information and Geographic Information Systems (DI & GIS) in a selected municipality in the Western Cape, South Africa.

The data was analysed in respect of the research questions posed, exploring the themes obtained from the review of literature, any other emerging themes that were revealed in the interviews, and through the data obtained from the quantitative survey. The concept of the duality of structure of structuration theory served to categorise the themes identified and to inform the interpretation of the findings in order to refine the conceptual framework. The outcome of this analysis was presented in a graphical illustration of the findings depicted as a refinement of the original conceptual framework.

5.2.   PROCESS OF ANALYSIS

5.2.1.   Qualitative analysis

The data obtained from the focus group discussion and the quantitative survey were subjected to content analysis and descriptive analysis, respectively. Content analysis is a technique mostly used in qualitative social research that deals with a set of procedures for systematic, replicable analysis of text through the application of coding schemes (Rose, Spinks & Canhoto, 2015:1). In this study content analysis was applied according to the following approach:

- Following transcription of the focus group recording, a careful and thorough reading of the transcript was performed. Through thorough reading, the intent was to grasp initial thoughts on the themes that would emerge from the transcript. Furthermore, this was done multiple times to understand and more accurately determine the dominant themes.

- Thereafter, a spreadsheet was created in Microsoft Excel, into which each question was set on its own worksheet.

- The spreadsheet included delineating criteria, such as the level of management in the organisation, gender and race, with the intention to simply provide a better understanding of the dynamic of responses given by each research participant.

- This research not only used a theory to guide the data collection, but also used the literature to propose problem conceptualisation, thus providing the basis for the predefined codes and themes in the problem conceptualisation, which were in line with the concept of duality of structure. As such, the researcher applied the coding consistently throughout the research.

- Codes were derived from the themes, concepts and ideas generated from the data.

- Codes were also guided by the modalities of the duality of structure theory that moreover served to conceptualise the research problem.

- The researcher therefore searched for words or group of words that related to the themes identified in the problem conceptualisation, as well as any new themes that emanated from the data that were not initially included in the problem conceptualisation.

- The themes obtained were guided solely by the data. The underpinning theory played a crucial role as it is through this theory that the identified themes were categorised using the modalities of the duality of structure namely interpretive schemes, norms and facilities.

- Excerpts were used in the analysis to justify the identified themes. Using excerpts from the data provided rich evidence that enhanced the theoretical narrative in the data analysis (Zhou & Nunes, 2016:6).

- A reading was performed again to ensure that all aspects of the data collected were highlighted and identified.

- After careful reading, the themes were distilled into a document according to the aforementioned categorisations. The categorisation determined how the different codes were related and linked (Hsieh, 2005:1279).

5.2.2. Quantitative analysis

In addition, with the intent to support and expand on the themes obtained from the data collected during the qualitative focus group discussion, a quantitative survey was conducted. Descriptive statistical analysis was employed to analyse the data obtained from the quantitative survey. The questionnaire was developed using Likert scale questions with the intention to numerically represent descriptive fact or data regarding the degree of agreement or disagreement with a particular view or statement (Allen & Seaman, 2007). Taking into consideration that descriptive statistics refers to the process of collecting, grouping and analysing a known set of data (Vergura et al., 2009:4456); it entails the representation of numerical fact or data in either a table or graph format, and it is used to organise and describe characteristics or factors of a given sample (Fisher & Marshall, 2009:93). In order to efficiently analyse the data gleaned from the quantitative survey, the statistical analysis software, Statistical Package for the Social Sciences (SPSS), was used to conduct descriptive statistical analysis on the data generated from questionnaires that were sent to the remaining forty-six employees operating in various management positions within the DI & GIS department (Muijs, 2005). Mostly used in social and behavioural sciences, SPSS was found suitable for effective manipulation, analysis and presentation of the quantitative data (Landau & Everitt, 2004:). This is because the software enables easy access, management and analysis of any kind of dataset quickly, eliminating time-consuming data preparation tasks as compared to manual procedures. It provided three ways to analyse data. This included describing data using descriptive analysis, examining relationships between variables, and comparing groups of variables through inferential statistics (ibid.). As such, based on the intention to show what the

rest of the population in the department under study felt about the findings generated from the focus group discussion, descriptive analysis of the data obtained from the survey was conducted through the use of SPSS for quicker analysis of the data. Descriptive statistics were applied as follows:

- After conducting content analysis with the data generated from the focus group, Likert scale questions were set in a questionnaire to assess the degree to which the respondents agreed or disagreed with the findings gleaned from the focus group.

- The concept of duality of structure, in particular its modalities, served to categorise the themes gathered from the survey, in the same manner through which the theory guided the themes when content analysis was performed on the focus group qualitative data.

- The questions were structured using the modalities of duality of structure namely interpretive schemes, norms and facilities.

- It is important to note that these questions were set in a statement format to assess the degree of agreement or disagreement of the respondents.

- This is because after qualitative analysis for the focus group was completed, statements or relationships pertaining to matters of institutionalisation of knowledge sharing were obtained for each of the research findings.

- This enabled the researcher to use these statements or relationships generated in the qualitative analysis as a basis through which a questionnaire was designed to assess the extent of agreement of the rest of the population under study with the relationships established in the qualitative analysis.

- Using SPSS, the questions were designed in the variable view and included delineating criteria, such as the race, gender, level of management, branches in which the respondents operate, and their length of employment. Table 5.1, Table 5.2, Table 5.3, Table 5.4, and Table 5.5 outline these variables to provide information about the respondents and the sample used for the analysis, and where possible, draw significance from the type of responses provided by each respondent based on different branches, levels of management, gender, population (ethnic group), and length of service, respectively.

Table 5.1: Branch of operation

Branch of operation		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Spatial Data Management	2	10.0	10.0	10.0
	Geomatics	1	5.0	5.0	15.0
	Information & Knowledge Management (IKM	6	30.0	30.0	45.0
	Development Information	3	15.0	15.0	60.0
	Knowledge Resources & Support	3	15.0	15.0	75.0
	Records Management	5	25.0	25.0	100.0
	Total	20	100.0	100.0	

Table 5.2: Level of management

Level of Management		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Manager	6	30.0	30.0	30.0
	Professional	8	40.0	40.0	70.0
	Technical	3	15.0	15.0	85.0
	Intern – Student	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

Table 5.3: Gender of the respondents

You are a		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	13	65.0	65.0	65.0
	Female	7	35.0	35.0	100.0
	Total	20	100.0	100.0	

Table 5.4: Population (ethnic group)

Population (ethnic group)		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Black	5	25.0	25.0	25.0
	Coloured	9	45.0	45.0	70.0
	White	6	30.0	30.0	100.0
	Total	20	100.0	100.0	

Table 5.5: length of service in the organisation

Length of service in the organisation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 - 5 years	9	45.0	45.0	45.0
	6 – 10 years	3	15.0	15.0	60.0
	11 – 15 years	1	5.0	5.0	65.0
	16+ years	7	35.0	35.0	100.0
	Total	20	100.0	100.0	

- Thereafter, all responses gathered from the twenty (20) completed questionnaires were captured in the data view.

- Frequency, mean and median were the analytical techniques used to conduct descriptive analysis, not only because they have been found suitable to organise and describe characteristics of the findings using numerical fact or data in either a table or graph format, but also because they provide an easier understanding and interpretation of either nominal or ordinal data commonly employed in Likert scales for descriptive analysis purposes (Fisher & Marshall, 2009:95).

- The results of the data analysed using descriptive analysis were exported to Microsoft Excel where each section was set in their own worksheet for traceability of each question addressed.

- The findings obtained from the descriptive analysis served to broaden the scope of the findings generated from the focus group discussion, enhancing the reliability of the research findings as a whole.

The following sections flesh out the results of the data collected as they apply to the research questions, interpreted by means of the underpinning theory, not only to identify and categorise the themes, but also to explore the relationships between them.

5.3.   ANALYSIS AND INTERPRETATION

The fieldwork was conducted at a selected municipality in the Western Cape, South Africa, and the units of analysis were all fifty-three employees working in the Development Information and Geographic Information System (DI & GIS) department. The data analysis was performed with the intention to identify the determinants for knowledge sharing institutionalisation in an organisation.

Qualitative data was collected through one focus group discussion that was conducted with seven staff members, followed by a quantitative survey conducted with the remaining forty-six staff members, twenty of whom completed the questionnaires. The data was analysed using content analysis and descriptive statistics respectively. Here both aspects of qualitative and quantitative data analysis are presented. Despite intially hoping for a hundred percent sample of the population, being all fifty-three employees operating within the Development Information and Geographic Information Systems (DI & GIS), for both the qualitative and quantitative approaches, this was not achieved. While seven respondents participated in the focus group,

only twenty of the targeted forty-six respondents completed the questionnaire, resulting in a 43% response rate for the survey. However, a 43% response rate is considered sufficient for analysis and to make significant inferences, especially in a case study approach where a quantitative study was performed in support and expansion of qualitative analysis (Yu & Cooper, 1983). The data gathered was interpreted using the concept of duality of structure and its modalities as a theoretical lens that guided the whole research. The prospect of the outcomes is elaborated in the next section.

5.3.1.   The social determinants of interpretive schemes for knowledge sharing

Abou-Zeid (2007:259) perceives interpretive schemes as standardised, shared stocks of knowledge that humans draw on to interpret behaviour to achieve effective interaction, thereby enhancing the line of communication. It is the medium through which the communication of meanings is guided and conveyed (Pinsonneault & Pozzebon, 2001:206). It is a modality that is applied reflexively in the sustaining of communication and interaction process through which the structure of signification is produced and reproduced (Chang, 2014:80). The dimension of signification creates meaning and codes of discourse (communication) in the structure, involving semantic rules, or standard codes, such as operational codes for day-to-day running and coordination of an organisational department, defining a breakdown of its functions and guidelines (Hussain & Cornelius, 2009:201). The purpose for identifying the social determinants for interpretive schemes for knowledge sharing was based on the fact that in order to institutionalise knowledge sharing, knowledge management strategies must be produced and reproduced through monitoring and evaluation. The knowledge management strategies are informed by social determinants, from which the enactment of structure is achieved through the modalities of the concept of duality of structure and interpretive schemes refer to the first of the three modalities. This modality is enacted through the line of communication, which is the mode of interaction through which agents communicate, understand and provide the means for different types of activities, thereby producing the structure of signification (Mauerer & Nissen, 2014:117).

The outcomes from the analysis of the data suggest that policies, processes, Standard Operating Procedures, organisational structure, people and knowledge sharing systems constitute enablers for encouraging lines of communication for knowledge sharing amongst co-workers in the organisation.

5.3.1.1.   Policies

In the problem conceptualisation, it was established that policies play an important role in the institutionalisation of knowledge sharing in an organisation. This is because it was envisaged that policies would influence knowledge sharing entrenchment in an organisation. The analysis

of the data generated indeed affirms this assumption by presenting policies as an important enabler for knowledge sharing. The analysis of data obtained from the survey clearly reveals that most of the employees agreed with the findings emanating from the quantitative analysis. Fourteen (14) respondents, representing seventy (70) percent (fifty-five (55) percent of those who agreed and fifteen (15) percent who strongly agreed), agreed that having policies in place plays an important role in encouraging knowledge sharing amongst employees. This is in contrast with five (5) respondents who did not share the same view. This is reflected in the fact that one (1) respondent strongly disagreed, while four (4) simply disagreed. One (1) respondent, representing five (5) percent, was neutral on the matter. The comparative results are depicted in Table 5.6 and Table 5.7 below.

Table 5.6: Descriptive Statistics on the role of policies for knowledge sharing (N=20)

Descriptive Statistics					
Having policies in place encourages knowledge sharing amongst employees	Valid	Missing	Mean	Median	Std. Deviation
	20	0	3.55	4	1.15

The outcome of the quantitative analysis on the importance of having policies in place to encourage knowledge sharing was obtained via a 5-point Likert scale from 1 = strongly disagree to 5 = strongly agree. The Descriptive statistics indicate a mean of 3.55 (SD = 1.15), and a median of 4. Taking into consideration the mean, it can be asserted that, in general, employees operating within the DI and GIS department believe that having policies in place encourage knowledge sharing amongst themselves. Table 5.7 below, outlines in detail how the degree of agreement in relation with the relationship established above is understood.

Table 5.7: Analysis on the importance of policies for knowledge sharing

Having policies in place encourages knowledge sharing amongst employees		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	5.0	5.0	5.0
	Disagree	4	20.0	20.0	25.0
	Neutral	1	5.0	5.0	30.0
	Agree	11	55.0	55.0	85.0
	Strongly Agree	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

The above analysis confirms the result obtained from the focus group interviews. Indeed, it was asserted that having policies in place encourages employees to engage with knowledge sharing in an organisation. This assertion was made by one manager as follows:

> *We then had to come up with policies, framework, people that will
> address issues of knowledge sharing …Our long-term vision via the
> implementation of those policies aims at getting people involved.*

Similarly, a technician asserted the following:

> *We have a number of policies that sort of fit into various branches in
> our department that kind of motivate people to engage with
> knowledge sharing activites…*

The importance of having policies implemented in an organisation for knowledge sharing is affirmed here in terms of creating the conditions for sharing to drive and support sharing. Thus, policies play an important role in getting employees to be involved and to motivate them to engage with knowledge sharing strategies. However, one senior professional officer stated:

> *We did mention policies and frameworks but in terms of having
> policies in place, I do not think that everyone complies.*

Similarly, another professional officer added:

> *Coming back to your point on policies, the policy itself does not really
> kind of enforce people in the organisation to always comply.*

Adversely, one manager added:

> *As alluded to, policies are in place in terms of enforcement. One of
> our long term visions is to make sure that policies become something
> on which people could be holding, becoming an element of
> compliance (like a key operating indicator) in order to better motivate
> and involve more effectively employees to engage with knowledge
> sharing activities.*

The understanding of how policy plays a role in influencing knowledge sharing is divergent. It is proposed that having policies in place for knowledge sharing is crucial in terms of motivating and facilitating people to engage with knowledge sharing activities. This is because policies set the map to drive how knowledge must be shared in an organisation. However, in some cases the respondents felt that policies do not guarantee compliance, while some felt that the intention of policy is ultimately aimed at enforcing compliance. Clearly adherence to policies

constitutes an element of compliance, which is a condition for driving and supporting knowledge sharing. Perhaps aspects of compliance are influenced by additional variables to support policy. In spite of these divergent views, there is clearly a place for policy within knowledge sharing strategy implementation. Therefore, as indicated by the data analysis, there is a strong relationship between policies and knowledge sharing.

The relationship between policies and encouraging knowledge sharing amongst employees is supported by Yang and Wu (2008:1128) who assert that management must seek effective policies to encourage employees to share their knowledge with others in an organisation. Boella and Torre (2006:1) believe that policies provide the rules for securely managing knowledge by providing direction on what can or cannot be accessed, and asserting the regulations around the enforcement of knowledge sharing. Therefore, the fact that policies encourage knowledge sharing amongst employees implies that it can provide sound direction and management of the type of knowledge accessed and shared. The result also confirms the view of Twum-Darko and Harker (2015:12) who emphasise that having effective policies and guidelines constitute a crucial factor for the entrenchment of knowledge sharing in an organisation. Therefore, policies effectively influence the line of communication as a medium through which the communication of the meaning and importance of knowledge sharing is guided and conveyed by providing a breakdown of knowledge sharing functions and guidelines. As such, it constitutes an important enabler for the institutionalisation of knowledge sharing in an organisation.

5.3.1.2. Standard Operating Procedures

Based on the review of literature, and the problem conceptualisation, it was envisaged that Standard Operating Procedures (SOPs) could help to institutionalise knowledge sharing. SOPs were identified as important enablers as they represent the manifestation of knowledge management strategies needed to entrench knowledge sharing in an organisation. The outcome of the analysis revealed that Standard Operating Procedures indeed enable knowledge sharing. The tables (Table 5.8, Table 5.9) below illustrate the view of the rest of the population under study on this assertion.

Table 5.8: Statistics on the use of Standard Operating Procedures (SOPs) (N=20)

Descriptive Statistics					
The use of Standard Operating Procedures (SOPs) and Guidelines (or equivalent) is considered as effective for facilitating knowledge sharing.	Valid	Missing	Mean	Median	Std. Deviation
	20	0	3.70	4	1.22

The table reveals a mean of 3.70 (SD = 1.22) and a median, being a middle value of the dataset, of 4. The analysis therefore shows that respondents are reasonably in agreement with the fact that using SOPs and Guidelines (or equivalent) is considered as an effective facilitator for knowledge sharing. The reason for this is that policies alone do not require employees to comply with knowledge sharing. Hence people might see the use of SOPs as another resource to facilitate knowledge sharing compliance. The breakdown of this assertion is outlined in Table 5.9 below.

Table 5.9: Analysis on the use of SOPs and equivalent for knowledge sharing

The use of Standard Operating Procedures (SOPs) and Guidelines (or equivalent) is considered as effective for enforcing knowledge sharing.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	10.0	10.0	10.0
	Disagree	1	5.0	5.0	15.0
	Neutral	3	15.0	15.0	30.0
	Agree	9	45.0	45.0	75.0
	Strongly Agree	5	25.0	25.0	100.0
	Total	20	100.0	100.0	

Table 5.9 reveals that most of the employees operating within the Development Information and Geographic Information Systems (DI & GIS) department believe that the use of SOPs are considered effective for facilitating knowledge sharing in an organisation. From the twenty responses collected, 45% agreed and 25% strongly agreed with the above statement, while 10% strongly disagreed and 5% disagreed with this statement. Three (3) respondents, representing 15% of the responses, were neutral on the matter. This could be explained by the fact that employees who did not consider the use of policies as effective for knowledge sharing might be susceptible to feeling the same about the use of Standard Operating Procedures. Another reason could be that respondents who disagreed with the above statement, may not see the benefits of using SOPs to facilitate knowledge sharing in addition to the use of policies as already elaborated in the previous section. The above analysis affirms the outcome of the focus group interviews as narrated below by one senior professional officer:

What we are moving toward is the implementation of SOPs (Standard Operating Procedures) that would have more effective translation into compliance in the organisation.

It is important to note that this perception was expressed after realising the difficulty experienced with using policies to motivate people in the organisation to comply with knowledge sharing initiatives. As such, having Standard Operating Procedures, which comprise manuals, guidelines, reports and the like, enable translation of knowledge sharing policy in as far as producing the guidelines on how knowledge sharing policy can materialise. Thus, compliance can be achieved when the intention of the policy is spelled out in the form of guidelines for its implementation. Having said this, SOPs actually facilitate compliance with the policy. Thus, it can be asserted that the use of Standard Operating Procedures (SOPs) and guidelines (or equivalent), together with policy, is considered as effective for enforcing knowledge sharing in an organisation.

Given the above analysis, Standard Operating Procedures (SOPs) constitute an important enabler for knowledge sharing in as far as providing the means through which policy is manifested. The outcome of this analysis confirms Tohidinia and Mosakhani's (2010:614) belief that Standard Operating Procedures enhance organisational climate upon policies and procedures that require employees to engage with knowledge sharing activities. The outcome also affirms Babu and Gopalakrishnan's (2008:24) perceptions that having Standard Operating Procedures in place constitutes an important means through which knowledge sharing intentions can be shared more explicitly through manuals, reports or an equivalent. Finally, the above implication confirms the assertion in the problem conceptualisation regarding the influence of Standard Operating Procedures for knowledge sharing, that it should actually be portrayed as a means of facilitating knowledge sharing. More importantly however, policy can be implemented through the use of Standard Operating Procedures (SOPs), and in doing so, the SOPs enable an enforcing means for driving knowledge sharing.

5.3.1.3. Organisational structure

In the problem conceptualisation, it was proposed that organisational structure constituted an important enabler for knowledge sharing. It was ascertained that it empowers and drives knowledge sharing activities, leading to its institutionalisation. In the data that was analysed, organisational structure manifested as an important determinant for knowledge sharing in an organisation. The results showed various ways in which organisational structure was manifested. The outcome of this analysis is outlined in Tables 5.10 and 5.11 below.

Table 5.10: The importance of Organisational structure (N=20)

Descriptive Statistics					
The organisational structure is a means to influence the lines of communication and knowledge sharing amongst employees in the organisation	Valid	Missing	Mean	Median	Std. Deviation
	20	1	3.84	4	0.60

As displayed in Table 5.10, the descriptive analysis shows a moderate appreciation of the proposed statement. The analysis revealed a median of 4, and a high score of the mean of 3.84 (SD = 0.60). Although obtaining a mean of 3.84, the results imply a positive and fair agreement with the belief that organisational structure indeed is a means to influence the line of communication and knowledge sharing amongst employees in the organisation. In addition, a standard deviation of 0.60 shows that the results are very closely correlated, showing a positive result on the proposed statement. The frequency distribution of this descriptive analysis is presented in Table 5.11.

From the results of the analysis presented above, it is clear that most of the respondents agreed with the above statement. 60% agreed and 10% strongly agreed that organisational structure is an important enabler for line of communication for knowledge sharing in an organisation. However, five (5) respondents, representing 25%, were neutral on the matter. This might be because the concept of organisational structure is quite complex to understand. From those who opted for neutrality, three (3) of them were interns and two (2) were technicians. As such, it could be presumed that they do not have a comprehensive picture when it comes to aspects of organisational structure and its implications for knowledge sharing.

Table 5.11: Analysis on the importance of organisational structure

The organisational structure is a means to influence the lines of communication and knowledge sharing amongst employees in the organisation						
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	5	25.0	26.3	26.3
	Agree	12	60.0	63.2	89.5
	Strongly Agree	2	10.0	10.5	100.0
	Total	19	95.0	100.0	
Missing	System	1	5.0		
Total		20	100.0		

The qualitative analysis revealed that organisational structure constitutes an important enabler for knowledge sharing entrenchment in an organisation. This was realised based on the fact that it is a means through which the line of communication for knowledge sharing amongst

employees is influenced positively. This assertion was alluded to during the focus group interviews. A manager in the department commented as follows:

> *…when we came to the Unicity from the seven administrations to somewhere in the unicity organogram, there was a realisation that knowledge management had a place in the organisation. They realised the importance to have a corporate structure. A body that would look at knowledge management and knowledge sharing more effectively…*

> *In terms of knowledge sharing, organisational structure plays an important role. This means that corporately, the organisation ensured there was a body that have the mandate for ensuring knowledge management, inside knowledge management, there is the aspect of knowledge sharing…so in terms of how do we ensure knowledge sharing from a corporate (organisation) structure, which is the way to do it.*

Similarly, one senior professional officer made this statement:

> *In terms of enhancing knowledge sharing, having a dual reporting line pushed by management will definitely motivate people to share knowledge more effectively.*

Based on the statements made by the manager, it is evident that organisational structure manifests as influencing knowledge sharing, but from the perspective of reporting lines as imposed by management structures. As an enabler, the organisational structure manifested as a way of using the power of reporting lines to take charge of knowledge sharing initiatives by creating a body which is answerable and which manages the knowledge sharing process. However, the senior professional added that there should be a dual reporting line between management and employees to enforce knowledge sharing objectives and to motivate and encourage people to share what they know, but also to direct what should be shared for the benefit of the organisation. Furthermore, another dimension regarding the importance of organisational structure for knowledge sharing was manifested through the position that the body would manage knowledge management, and knowledge sharing in particular, in the organisation. This was based on the comments made by another manager who said:

> *Initially, our department was always part of planning and economic directorate. As the IKM developed and the GIS side of the department changed, got more important…I think that was one of*

the reasons we could have been part of the corporate services directorate at the time changed from a more strategic vision to a more corporate one.

Based on her views, one manager stated:

Knowledge management occupies a strategic position in the organisation from data to strategic decision making and work planning. And for interest sake, our names used to be Strategic Development Information and Geographic Information Systems. Then the mayor decided to remove the terms strategic from our names.

These two arguments were supported finally by one senior professional officer who said:

Because there was a strategic policy unit already in place and there was also a strategic development information unit in our branch. Even though the strategic unit was removed from the Mayor, it doesn't mean that we don't deal with strategic anymore. All of that are important for achieving effective knowledge sharing in an organisation.

The original proposed influence of the organisational structure on knowledge sharing was to empower. This relationship was affirmed in the qualitative findings, as it seemed the respondents felt that anything management-driven is more likely to be enforceable. In addition, however, this implies that dual reporting must take place for people to comply. Given that management sit at a strategic level in the organisation, strategies should be defined in consultation with employees. Thus, the organisational structure is proposed to provide the necessary basis for lines of communication within the organisation to properly implement knowledge sharing strategy. This argument served to establish that the organisational structure is a means to influence the line of communication and knowledge sharing amongst employees in an organisation.

Indeed, it was established in the qualitative analysis that organisational structure is a means to influence the line of communication and knowledge sharing amongst employees in an organisation. Even though organisational structure could manifest in various ways in the organisation, the outcome specifically revealed that having an organisational body strategically positioned in an organisation plays an important role by enabling, driving and providing

directives given from top managers and executives on what type of knowledge would be shared and how it would be shared. This argument affirms what Sharratt and Usoro (2003:189-190) said which is that the influence of organisational structure is essential to effectively address matters of knowledge sharing. Directives would be given from the top on how a culture for knowledge sharing would take place and how social cohesion improvement, communication and other strategies would be driven by top managers to make the sharing of knowledge amongst employees across an organisation more effective. Furthermore, Riege (2005:31) states that organisational structure facilitates the transparent flow of knowledge with greater ease, especially tacit knowledge, by providing clear communication of goals and strategies from top managers to drive knowledge sharing practices. In terms of entrenching knowledge sharing, organisational structure plays an important role by positively influencing the willingness of employees to engage with knowledge sharing activities, fostering their line of communication (Frost, 2014:9). Thus, the findings from the qualitative and quantitative data are in agreement with that of literature, except that the findings also suggest that dual reporting lines ensure compliance on both ends.

5.3.1.4. People (Employees)

In the problem conceptualisation, it was established that people support the entrenchment of knowledge sharing in an organisation. This is because human capital has been found particularly central to the institutionalisation of knowledge sharing in the organisation. The outcome generated from the quantitative analysis depicted in Table 5.12 and Table 5.13 below indeed support this claim. The rest of the population under study gave their impression on the relationship established and stated as such: "People's involvement can create and sustain networking amongst co-workers". The result of this analysis is outlined below:

Table 5.12: People's involvement for knowledge sharing (N=20)

Descriptive Statistics					
I consider people's involvement in creating and sustaining networking amongst co-workers as a driver for knowledge sharing in the organisation.	Valid	Missing	Mean	Median	Std. Deviation
	20	0	4.20	4	0.77

The descriptive analysis presented in Table 5.12 above indicates a median of 4 and a mean of 4.20 (SD=0.77). The implication of this analysis points to a few considerations. The first is that through a median and mean of 4 and 4.20 respectively, it is evident that respondents who took part in the second part of this study recognised the significant role that people play in making knowledge sharing effective in an organisation.

The small standard deviation of 0.77 indicates how concentrated or spread out the variation of the data is to the mean implying a positive appreciation in general of the aspect of people as

an important enabler for creating and sustaining networking amongst employees which is needed to make knowledge sharing effective in an organisation. Based on this interpretation, Table 5.13 below depicts the frequency of the statement assessed by the respondents.

Table 5.13: Analysis on the importance of people's involvement for knowledge sharing

I consider people's involvement in creating and sustaining networking amongst co-workers as a driver for knowledge sharing in the organisation.		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	5.0	5.0	5.0
	Neutral	1	5.0	5.0	10.0
	Agree	11	55.0	55.0	65.0
	Strongly Agree	7	35.0	35.0	100.0
	Total	20	100.0	100.0	

It is important to remember that this analysis was performed for supporting purposes. This means that the above analysis was conducted to assess if the rest of the department agreed with the outcome generated from the qualitative analysis. In fact, through the frequency analysis, it can be observed that 55% agreed and 35% strongly agreed that indeed, people's involvement can create and sustain networking amongst co-workers as a driver for knowledge sharing in their organisation, positively supporting the interpretation given during the descriptive analysis in Table 5.12 above. In the same environment, 5% were unsure about the statement, while one (1) respondent, representing the same percentage, did not agree. The positive result could be attributed to the fact that policies or SOPs, the use of knowledge sharing systems and organisational structures, for instance, rely on people to make knowledge sharing possible in an organisation. As such, this notion positions people at the centre for creating and sustaining effective networking amongst employees that would contribute to knowledge sharing success and institutionalisation.

Following what was expressed, people are a central enabler for knowledge sharing. Even though people did not explicitly emanate from the qualitative analysis of the data generated from the focus group, there have been social aspects that alluded to this conclusion. This is based on the realisation that no knowledge sharing can take place without human interaction. This can be understood through the following comments made by one manager:

> *…then we had to come up with policies, frameworks, and strategies that will address the issue of knowledge management and knowledge sharing that would sort of set the road map for how this happens.*

Currently, we would say that our main knowledge management platform is "SharePoint" from Microsoft. Since we are fortunate that our internal infrastructure and ICT are very strong, SharePoint infrastructure has been in place in its basic forms from 2007 through right our lasted version 2013.

In terms of knowledge sharing, organisational structure plays an important role. Having a dual reporting line pushed by management will definitely motivate employees to share knowledge.

Up to the point of delivery of Knowledge sharing systems, people would not really get in what we, the knowledge management workers understood…then things started to fall into places…we were welcomed in certain departments and we took it from there.

Another manager added:

…If I can add something to that, when you ask how we ensure that knowledge sharing occurs in an organisation, I mean you did mentioned about policies and frameworks, but was at some point that it was sort of mandatory coming down from city managers or ...that they are kind enforcing...

Finally, a senior professional officer expressed the following:

We must accept that knowledge sharing was already happening across the organisation in all the department … just it was not as coordinated and integrated as what our vision would like it to be.

These comments point to one assertion: people are indeed central for knowledge sharing to take place in an organisation. This is because strategies such as policies, Standard Operating Procedures, culture, knowledge sharing systems and other features that could enforce or make knowledge sharing successful are all created and used by people, not only for the implementation of those strategies, but also the type of knowledge that needs to be shared, and the process applied to share. These are all products of the work of human capital. It is evident that without the involvement of people, none of these strategies would be developed and no knowledge sharing would take place. Therefore, considering that people are indeed at the core of everything with regards to the entrenchment of knowledge sharing in an

organisation, its supporting role is justified. Therefore, it can be ascertained from the statements made by the respondents that all strategies put in place for effective knowledge sharing in the organisation can only succeed if people support it. The aforementioned also alludes to the fact that people's involvement can create and sustain networking amongst employees in an organisation that would enhance trust and social cohesion, thereby positively influencing employees' willingness to engage in knowledge sharing activities.

Therefore, through these outcomes, the fundamental role that people play cannot be neglected. This is due to the fact that elements or features enabling knowledge sharing occurrence are or can be achieved through human interaction. Therefore, if the role of people's involvement is only seen as supportive, as depicted in the problem conceptualisation, its implications are limited and it does not depict the full picture surrounding this enabler. Fathi, Eze and Goh (2011:57) believe that social networking tends to create a suitable surrounding or atmosphere to share knowledge. Moreover, Reagan and Mcevily (2015:169) argue that the more emotionally involved two individuals are with each other, the more time and effort they are willing to put forth on behalf of each other, including effort in the form of transferring knowledge. After all, knowledge sharing cannot take place without human interaction or involvement. The fact that people's involvement contributes to the creation and sustainability of networking needed for effective sharing of knowledge in an organisation confirms its central role not only to support, but to be a primary driver for knowledge sharing. Not only do people need to have a suitable environment or atmosphere to share what they know, but social networking can help them engage more in knowledge sharing, whether explicit or tacit knowledge. And as Burnett (2016:136) alludes, we cannot talk about social networking, and determinants contributing to knowledge sharing success without recognising and releasing the central role of human involvement in the first place.

5.3.1.5. Knowledge sharing systems

In this section, the importance of technology for the enhancement of line communication for knowledge sharing is discussed. In fact, the outcome of the data analysed indicates the importance of having knowledge sharing systems to improve knowledge sharing's line of communication. Based on the quantitative data, most of the respondents strongly believe that using a knowledge sharing system can facilitate the line of communication by enabling co-workers to engage with knowledge sharing activites within their organisation. The prospect of this assertion was affirmed considering respondents' feelings when they were asked how they felt about the importance of knowledge sharing systems for the communication of knowledge based on the following statement: "I consider the use of knowledge sharing systems as a fundamental means of communication for knowledge sharing". The outcome of this analyis is depicted in Table 5.14 below.

Table 5.14: Statistics on the use of knowledge sharing systems (N=20)

Descriptive Statistics					
I consider the use of knowledge sharing systems as a fundamental means of communication for knowledge sharing	Valid	Missing	Mean	Median	Std. Deviation
	20	0	4.21	4.00	0.54

As shown in the table above, the descriptive statistics reveal a median of 4 and a mean of 4.21 (SD=0.54). The low standard deviation points to the fact that the values in the dataset are closer to the mean, implying that most of the respondents considered the use of knowledge sharing systems as fundamental in terms of communication enhancement for knowledge sharing, at least amongst the rest of the participants of the DI and GIS department who completed the questionnaire.

Table 5.15: Analysis of the use of knowledge sharing systems

I consider the use of knowledge sharing systems as a fundamental means of communication for knowledge sharing		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	5.0	5.3	5.3
	Agree	13	65.0	68.4	73.7
	Strongly Agree	5	25.0	26.3	100.0
	Total	19	95.0	100.0	
Missing	System	1	5.0		
Total		20	100.0		

Table 5.15 indicates that 90% of the respondents (this includes 65% who agreed and five respondents, representing 25%, who strongly agreed), believe that the role of knowledge sharing systems is fundamental for enhancing communication for knowledge sharing in an organisation, affirming as such what was revealed in the descriptive statistics observed in Table 5.14. Only one respondent, representing 5% of the responses gathered, was not sure on the matter. A possible reason for the large majority that are in agreement with the outcome might be explained by the fact that the case is a department with a relatively well-developed knowledge management system where employees engage regularly with technology. Thus, the affordances of technology in this context are well understood. These employees are thus in the best position to give their degree of agreement.

The considerations elaborated above support what was indeed established following the analysis of the data obtained from the focus group. It clearly indicates that having knowledge sharing systems, represented in terms of software and information technology infrastructures

to facilitate and improve efficient and effective communication, would have a direct effect on the sharing of knowledge amongst co-workers in an organisation. This consideration is evident in the following comments made by one manager below:

> *We are fortunate in terms of our internal infrastructure…We are currently based in our 2013 intranet based knowledge platform.*

> *Currently, we would say that our main knowledge management platform is "SharePoint" from Microsoft. Since we are fortunate that our internal infrastructure and ICT are very strong, SharePoint infrastructure has been in place in its basic forms from 2007 right through our latest version 2013…*

> *…since our department came along, we have been able to show the potential in terms of knowledge sharing using SharePoint. Before, it was just not utilised and leveraged properly until we came along.*

> *So after more demands from the system, we were able to use SharePoint as our chief knowledge base for communication purposes.*

It is evident from the excerpts provided that knowledge sharing systems are manifested through the means of an intranet, which is an information and communication technology ICT infrastructure, and SharePoint, which is software developed by Microsoft. Through these systems, employees within the DI and GIS department were able to communicate and share information across the department and the whole organisation. Despite having these two systems, another knowledge sharing system, considered by the department as central to fulfil their obligations in terms of knowledge management and knowledge sharing was developed. This is evident in the following comment added by one professional officer who, during the focus group discussion, added:

> *If you want to go further than that, we got to start talking about mechanisms that we put in place. And our vision for knowledge sharing is that we want to build knowledge hubs (which is a knowledge sharing systems). Inside those knowledge hubs, all the processes, procedures and people involved there will ensure knowledge sharing.*

Our first knowledge hub is the Development Information Resource Centre "DIRC" that provides access to data, information and knowledge resources that relate to development within partnership with all City departments.

DIRC on one hand, enable us to store contents such as documents, research reports, policies, plans in a data repository. And on the other hand, it includes other components like research hub, special portal and lists special layers of the City special access to it. A data directory and an expertise locator are other features incorporated in DIRC.

The knowledge hub (DIRC) is located under the City intranet therefore making it available to all City staff …and is an additional tool that we utilise for direct communications to core groups of users.

The comments above reveal that systems are considered by the department as crucial in order to facilitate their knowledge management and knowledge sharing activities. The knowledge hub, Development Information Resource Centre (DIRC) system, in particular is found to be important as it provides access to data, information and various resources to other departments and partners. This includes a knowledge repository, where explicit knowledge such as documents, research reports, policies and standard plans are stored. It also includes other features such as a research hub, special portal, statistics, expertise locators and other tools that are accessible to all employees in the various departments. Thus, the DIRC system, being a knowledge management system, is a manifestation of an interpretive scheme by housing shared stocks of knowledge to achieve effective interaction amongst employees, thereby enhancing the line of communication. Through their knowledge hub, DIRC, direct communication is facilitated and access to relevant documents are provided through effective integration and coordination not only among employees of the DI and GIS department, but also among various other departments across the organisation. The proposed relationship between technology and knowledge sharing in the problem conceptualisation was realised in the qualitative data. Technology indeed drives knowledge sharing in as far as operating and controlling the access to and dissemination of resources within the organisation. The outcome enables the establishment in that the use of knowledge sharing systems is proposed to be a fundamental means of communication for knowlegde sharing.

Both the qualitative and quantitative analyses show that employees of the DI and GIS department understand and believe in the fundamental role knowledge sharing systems play

in the enhancement of the line of communication that would result in knowledge sharing in their organisation. Explicit knowledge such documents, policies, SOPs, and other knowledge can be shared effectively amongst all employees, providing faster access to information and as such facilitate communication between them, which in the context of this study, makes it a fundamental determinant for the entrenchment of knowledge sharing practices in an organisation. These findings affirm the views of Sutz, Arocena and Bo (2014:6), who assert that technology has dramatically enhanced the opportunities for knowledge accumulation and interaction between individuals and institutions. The outcome furthermore confirms the arguments made by Hendriks (1999) and Alavi and Leidner (2001), who assert that information and communication technology is crucial for knowledge sharing. Not only in terms of incorporating many features such as a knowledge repository where documents, policies and other items could be stored and shared amongst employees, but also in terms of exchanging knowledge through the recurrent use of available knowledge sharing systems that would set the road map, or contribute along with other enablers, for knowledge sharing to take place at an organisational level.

5.3.2.   The social determinants of norms for knowledge sharing

In this section, the social determinants of norms for knowledge sharing are presented. Norms are modalities from the dimension of legitimation (Jones & Karsten, 2003:7). Buhr (2002:19) alludes that the structure of legitimation provides morality. It involves a shared set of values and ideals, normative rules, codes of conduct, mutual rights and mutual obligations. Twum-darko (2014) refers to it as moral codes, leadership, understanding and endorsement for human interaction which ultimately produces legitimation. As such, for the institutionalisation of knowledge sharing, aspects of organisational culture, mandate, management support, performance management and governance, have all been identified as social enablers of the modality of norms for knowledge sharing entrenchment. The detail of this outcome is presented below.

5.3.2.1.   Mandate

In the problem conceptualisation the prospect of having a mandate to enforce knowledge sharing entrenchment was not envisaged. However, through the analysis performed, a mandate was identified as an important element through which knowledge sharing would be well driven. While this variable emerged qualitatively, the outcome obtained from the quantitative analysis conducted with the rest of the population to assess their appreciation on the subject, revealed mixed feelings on the matter. This is understood after considering the results presented under Table 5.16 and Table 5.17 below.

Table 5.16: Statistics on the necessity of mandate (N=20)

Descriptive Statistics					
A mandate is necessary to encourage knowledge sharing in the organisation	Valid	Missing	Mean	Median	Std. Deviation
	20	0	3.95	4.00	1.15

As displayed in Table 5.16, the descriptive analysis shows a moderate appreciation of the proposed statement. The analysis revealed a median of 4, and a high score of the mean of 3.95 (SD = 1.15).

Although obtaining a score of 3.95 for the mean which would suggest that most of the respondents considered a mandate as a means through which knowledge sharing can be encouraged, the standard deviation of 1.15 from the mean suggests how spread out the feelings were, and that all respondents somehow did not appreciate this proposition, implying a mixed belief or uncertainty for some respondents. Table 5.17 below outlines the frequency of the statement analysed for better enlightenment on the outcome.

Table 5.17: Analysis of the necessity of a mandate for knowledge sharing

A mandate is necessary to encourage knowledge sharing in the organisation.		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	4	20.0	20.0	20.0
	Neutral	1	5.0	5.0	25.0
	Agree	7	35.0	35.0	60.0
	Strongly Agree	8	40.0	40.0	100.0
	Total	20	100.0	100.0	

The results of the analysis indicate that from the twenty (20) completed questionnaires, fifteen (15) respondents agreed (35% and 40% who agreed and strongly agreed, respectively) with the notion that a mandate is important. However, 20% disagreed and 5% were neutral on the subject. Perhaps the divergent views on the matter pertain to understanding how knowledge sharing can be mandated, if a mandate is perceived as an official or authorised manner to conduct work or act in a certain way. In the context of knowledge sharing, this might not be envisaged as an area of work that is affected by mandatory legislation. However, while knowledge sharing in itself is not a mandate, a policy provision, and the resultant policies, are designed to support a mandate. Thus, a mandate can be a precedent for ensuring that policies align to the broader mandate in order to improve services. A mandate for knowledge sharing, driven by management, is believed to support steps, actions or decisions needed and made regarding the effectiveness of knowledge sharing.

This is why the qualitative data, obtained from the focus group, shed more light concerning what was ascertained. The data revealed that being mandated can somehow enforce the type

of normative set of rules needed to drive knowledge sharing. This finding became evident in the comments made by one senior professional officer which read as follows:

> *Like I say, we are not a profit making organisation. There are cases for instance where knowledge management is not mandatory in terms of legislation. In the context of our department, we can only show them the importance of knowledge sharing.*

> *If we are mandated (for knowledge management and knowledge sharing specially), we would have more power to indicate and direct how knowledge should be shared in the organisation and our department.*

From the observations made above, it is evident that the aspect of being mandated from a legislation perspective to address knowledge management and knowledge sharing undertakings is indeed important for the DI and GIS department. This is considering the Development Information and Geographical Information Systems (DI & GIS) department provides various services such as development information, spatial data management, geographic information systems and other services, including knowledge management and knowledge sharing. An appreciation for the supporting role that a mandate can play in entrenching knowledge sharing might highlight the importance of knowledge sharing as it pertains to improving services overall. In addition, the comments made by one of the professional officers implies that if the department (DI & GIS) was mandated by legislation, it would have legal power to formalise and direct how knowledge should be shared in the department and across the organisation, allowing those in governance to guide employees accordingly on matters of knowledge sharing to ensure its performance. Knowledge Sharing is not a mandate but a policy provision and policies are designed and implemented to support the mandate needed for knowledge sharing success. As such, the limitation of merely showing the importance of knowledge sharing without having the power to effectively drive how knowledge sharing should occur, demonstrates the importance of a legislation mandate for knowledge sharing in this case. If the considerations above are well perceived, it is evident that having a mandate would provide some support on how knowledge sharing would be entrenched and guided. As such, the relevance for knowledge sharing entrenchment cannot be omitted.

Therefore, despite recognising the importance of legislation mandates to address matters of norms or moral codes needed for knowledge sharing, it is still unclear whether this approach would be effective. This outcome needs to be explored in more detail to uncover such aspects

for a better understanding, especially relating to matters of knowledge sharing entrenchment in an organisation. Nevertheless, the analysis therefore reveals the importance of addressing matters of norms or moral codes needed for knowledge sharing. Despite the divergent results, the importance of encouraging and enforcing knowledge sharing in an organisation cannot be ignored (Roux et al., 2006:12; Blom et al., 2014:140).

5.3.2.2.   Management support

In the problem conceptualisation, it was established that management support enables knowledge sharing in an organisation. This section aims to verify whether this theory is true by expanding it to a broader population to show if they agree with the findings through a survey. The outcome of this analysis is outlined in Table 5.18 below.

Table 5.18 Statistics on the role of management support (N=20)

Descriptive Statistics					
The role of management support is very important in terms of norms for knowledge sharing	Valid	Missing	Mean	Median	Std. Deviation
	20	0	4.60	5.00	0.50

The descriptive statistics revealed a median of 5 and a mean of 4.60 (SD=0.50). This affirms the belief that management support indeed contributes significantly in terms of norms for knowledge sharing. The low standard deviation alludes to this outcome. These results reflect the fact that employees of the DI and GIS department who took part in the study consider the role of management support as important for knowledge sharing. This perception is clarified in Table 5.19 below.

Table 5.19: Analysis of the role of management support (N=20)

The role of management support is very important in terms of norms for knowledge sharing					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	8	40.0	40.0	40.0
	Strongly Agree	12	60.0	60.0	100.0
	Total	20	100.0	100.0	

As portrayed in Table 5.19, the analysis shows that all twenty (20) respondents agree with the above statement. This includes 40% who agreed and 60% who strongly agreed. The results of the frequency analysis also affirm and support what was initially presented in Table 5.18. This score indicates that all the respondents supported the important role that management plays in terms of agreeing with the set of values and normative conduct necessary for knowledge sharing entrenchment.

As such, the relationship developed through the analysis generated from the focus group is affirmed. This is because the qualitative analysis revealed that management (corporate) support is considered as an important social enabler for knowledge sharing in the organisation. This assertion was made taking into context all the social aspects elaborated on in the comments made by one manager during the focus group discussion, who stated:

…when we came to the Unicity from the seven administrations to somewhere in the unicity organogram, there was a realisation that knowledge management had a place in the organisation. They (executive management) realised the importance to have a corporate structure. A body that would look at knowledge management and knowledge sharing.

Up to the point of delivery of our knowledge sharing systems, people would not really get what we, the knowledge management workers first understood…We then got council, we were welcomed in certain department.

Having dual reporting line pushed by management will definitely motivate employees to share knowledge more effectively.

In the same context, another manager said:

If I can add something to that. When you ask how we ensure that knowledge sharing occurs in an organisation, I mean you did mentioned about policies and frameworks, but was it in at some point that it was sort of mandatory coming down from city managers or ...that they are kind of enforcing...

All the social aspects elaborated on in the views of the respondents point to one important outcome which is the importance of management support for driving knowledge sharing in an organisation. Management support directs all the strategies needed to support knowledge sharing. Directives and clear goals on how the strategies could be enforced are achieved through the involvement of managers. Furthermore, by having dual reporting lines between managers and employees, effective communication would be achieved and proper normative rules for knowledge sharing would be communicated effectively. Although such an outcome

needs to be detailed, it enables us to affirm that the role of management support is to create norms for knowledge sharing in an organisation.

As such, the perception of considering management support as an important social enabler for knowledge sharing is justified. In addition, the analysis confirms Davenport et al. (1998), Lin (2006) and Twum-Darko and Harker's (2015) assertions that management support is perceived as a crucial factor for the efficiency and effectiveness of knowledge sharing in an organisation. Management support effectively influences employees' willingness to both donate and collect knowledge with colleagues (Lin, 2007:326). This does not mean only providing clear directives and goals on how knowledge should be shared amongst employees but also identifying norms and practices that are barriers to discussing sensitive topics and can encompass organisational culture, policies, guidelines and procedure implementations, and strategies considered as crucial for knowledge sharing success from an organisational perspective (Shorunke et al., 2014:54).

5.3.2.3.   Performance management

Another unexpected outcome generated from the qualitative analysis was the importance of performance management for establishing the norms or moral codes for effective knowledge sharing. Even though this determinant was not identified during the problem conceptualisation, the relationship established between performance management and its possible benefits regarding knowledge sharing institutionalisation are not strong enough to ensure its effectiveness when it comes to the institutionalisation of knowledge sharing in an organisation. This conclusion was achieved based on the results of the following statement, subjected to the appreciation of the rest of the population: "Performance management is a driver for norms in terms of knowledge sharing amongst employees and departments in the organisation". Table 5.20 and Table 5.21, presented below, depict the results of the descriptive analysis performed.

Table 5.20: Statistics on the question on performance management (N=20)

Descriptive Statistics					
Performance management is a driver for norms in terms of knowledge sharing amongst employees and departments in the organisation	Valid	Missing	Mean	Median	Std. Deviation
	20	0	3.55	3.50	1.10

The descriptive analysis shows some mixed feelings in the assessment of the statement. This is manifested by a median of 3.50 and a mean of 3.55 (SD=1.10). This outcome, although showing a high score in the mean of 3.55, suggesting that many respondents might consider performance management as a driver for norms for knowledge sharing success, it also revealed a standard deviation of 1.10 spread out from the mean. This important aspect also

points out that this statement is not appreciated by everyone who took part in the study. Table 5.21 depicts in detail the frequency of the outcome of this analysis.

Table 5.21: Analysis of the importance of performance management for knowledge sharing

Performance management is a driver for norms in terms of knowledge sharing amongst employees and departments in the organisation.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	4	20.0	20.0	20.0
	Neutral	6	30.0	30.0	50.0
	Agree	5	25.0	25.0	75.0
	Strongly Agree	5	25.0	25.0	100.0
	Total	20	100.0	100.0	

As observed in the table above, the results affirm a mixed appreciation on the proposed relationship established. This is manifested by ten (10) respondents who clearly do not share the same view, since 20% disagreed and 30% were neutral. In contrast ten (10) other respondents, partitioned as 25% who agreed and strongly agreed, respectively, believe that performance management could somehow impact positively on knowledge sharing entrenchment.

Given Table 5.20 and Table 5.21, the possible influence of performance management on institutionalising knowledge sharing cannot be neglected. Considering that some respondents during the quantitative analysis recognised its positive influence on knowledge sharing, the outcome obtained from the focus group is somewhat supported. Its importance for knowledge sharing has been ascertained based on the views expressed by one senior professional officer that were as follow:

> *One of concrete mechanisms that would sort of build the need for knowledge sharing is using performance management of employees in our department as well as other departments across the organisation*
>
> *So, they (employees) could be measured to what extent they engage with knowledge management and knowledge sharing …Therefore, realistically, in an organisation like ours, building performance management is a possible alternative we may seek to use*

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performance management could somehow impact positively on knowledge sharing entrenchment.

Given the results in Table 5.20 and Table 5.21, the possible influence of performance management on institutionalising knowledge sharing cannot be neglected. Considering that some respondents during the quantitative analysis recognised its positive influence on knowledge sharing, the outcome obtained from the focus group is somewhat supported. Its importance for knowledge sharing has been ascertained based on the views expressed by one senior professional officer that are as follows:

> *One of concrete mechanisms that would sort of build the need for knowledge sharing is using performance management of employees in our department as well as other departments across the organisation.*

> *So, they (employees) could be measured to what extent they engage with knowledge management and knowledge sharing …Therefore, realistically, in an organisation like ours, building performance management is a possible alternative we may seek to use.*

Essentially, the data reveals that performance management could constitute an effective alternative tool to encourage employees to share knowledge. Like incentives, employees would be assessed, measured, and rewarded based on the degree to which they engage with knowledge management and with knowledge sharing amongst each other. The types of measurements and how employees would be measured were not developed in detail. However, this does not affect the outcome that performance management is an alternative enabler that seeks to encourage employees to engage with knowledge sharing in an organisation. Therefore, from this outcome, it can be affirmed that performance management could be a driver for norms in terms of knowledge sharing amongst employees and departments in the organisation.

Due to the fact that performance management is not an established practice within the department, it is difficult to say how effective this determinant would be to enforce or drive a normative set of rules needed for knowledge sharing entrenchment. This could also be explained by the fact that aspects of performance management in terms of the way it would be applied, the type of measurement to use and other technical tools were not fully understood, leading to some of the respondents refraining from commenting or disagreeing with the statement. However, ten (10) respondents, representing 50%, believed that performance

management indeed could play an important role in terms of creating the norms for knowledge sharing. As such, despite the divergent views on this outcome, it is evident that the contribution of performance management as a driver of norms for knowledge sharing cannot be ignored.

5.3.2.4. Organisational culture

In the problem conceptualisation, it was established that organisational culture impacts on the institutionalisation of knowledge sharing in an organisation. Indeed, the analysis reveals that the organisational culture plays a crucial role in entrenching knowledge sharing. The results obtained from the rest of the population on how they felt about the outcome supports this. In fact, it was established that a relationship exists between organisational culture and knowledge sharing entrenchment. The assertion is that an organisational culture is important for successful knowledge sharing in the organisation. The results are depicted in Table 5.22 below.

Table 5.22: Statistics on the analysis of organisational culture (N=20)

Descriptive Statistics					
Organisational culture is important for successful knowledge sharing in the organisation.	Valid	Missing	Mean	Median	Std. Deviation
	20	0	4.50	5.00	0.69

The descriptive statistics indicate a mean of 4.50 (SD = 0.69), and a median of 5. Taking into consideration the mean and its standard deviation, it can be asserted that overall, employees operating within the DI and GIS department believe that organisational culture indeed is important to consider for effective and successful knowledge sharing. The frequency distribution in Table 5.7 below outlines in detail how the degree of agreement with the relationship established above is understood.

Table 5.23: Analysis of the importance of organisational culture

Organisational culture is important for successful knowledge sharing in the organisation.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	2	10.0	10.0	10.0
	Agree	6	30.0	30.0	40.0
	Strongly Agree	12	60.0	60.0	100.0
	Total	20	100.0	100.0	

Despite not being aware of the existence of a culture in their organisation, most of the respondents believe that an organisational culture is indeed important for effective sharing of knowledge in an organisation. From the twenty (20) completed responses, eighteen (18) respondents shared this view. This number entailed 30% who agreed and 60% who strongly agreed to the above. Two (2) respondents, representing 10%, were undecided in their appreciation of the outcome.

Hence, even though the concept was not understood and presumed non-existent in the organisation, the outcome depicted above confirms the relationship between organisational culture and knowledge sharing, as established during the qualitative analysis. Actually, it was observed from the data generated from the focus group that employees operating within the DI and GIS department were not aware of such an occurrence. This was affirmed by the following comments made by one senior professional officer when they were asked if an organisational culture impacts on knowledge sharing:

You are talking about the ideal world where professionals start to share their knowledge…some succeed well because it is something built into their culture but in others it is not.

The City is a hierarchical bureaucratic organisation type where knowledge sharing would not happen as it should between a manager and his or her assistants or workers. This because this is not the way the organisation was guided.

I am not even sure that we are trying in terms of our knowledge strategies is to create a culture…where professionals genuinely share their knowledge, help each other? No, I do not think so.

In the same context, another professional officer asserts:

That is what the private sector does. They use knowledge management for competitive advantage. They share information to be steps ahead from competitors to deliver their services efficiency. Here we are talking about services delivery. We are not even in competition with anyone and information we have is shared as a unit.

Finally, the assertion that all employees within the department under study did not think that a culture for knowledge sharing was actually occurring amongst them was clear when the manager of the DI and GIS commented as follows:

We can propose new strategy to enforce knowledge sharing from a cultural point of view but the reality is that in the ideal world, everyone in an organisation is supposed to share what they know. However, in the real world in which we are living, we have gotten to have some reasons that make our while to share.

It is clear from the views presented above that a culture for knowledge sharing in the DI and GIS department was presumed non-existent. It was difficult for them to grasp this concept. not only because of the way the organisation was guided but also due to their perception that a culture of knowledge sharing would be more appropriate in the private sectors in terms of competitive advantage. Moreover, since they operate in the public sector where they do not have competitors, and their focus is primarily on service delivery, a culture of knowledge sharing would not easily be favoured in their organisation. However, through in-depth analysis

of the data, it was revealed that a culture of knowledge sharing actually existed within their organisation. If we understand culture as the entrenchment of practices in an organisation, strategies, mechanisms and processes; the entrenched culture of knowledge sharing was represented in various aspects. In fact, the use of mechanisms such as policies, Standard Operating Procedures, organisational structure, technology or management support, collectively refers to the means through which a culture of knowledge sharing is achieved. Through technology infrastructures such as the intranet, SharePoint, and the knowledge hub "DIRC", communication amongst employees within the DI and GIS department, and other departments, improved and allowed faster access to information across the organisation. Therefore, although employees of the DI and GIS department were not aware that such a culture existed, the analysis indicates that the set of practices and processes alluded to, facilitated the willingness for employees to share their knowledge, entrenching as such a culture for knowledge sharing in the organisation.

The above outcome confirms the perceptions of Riege (2005) and Jonsson and Kalling (2007), that developing an organisational culture through adequate organisational structures that facilitate transparent knowledge flows and resources, policies, technology, and other sets of practices, is fundamental for knowledge sharing effectiveness and success in an organisation. Similarly, Wilson (2001:356) states that: "organisational culture can be defined as the visible and less visible norms, values and behaviour that are shared by a group of employees which shape the group's sense of what is acceptable and valid". Organisational culture is therefore considered as an important enabler for knowledge sharing not only because it creates and facilitates a proper environment for social interactions and improves relationships among individuals, but also defines the appropriate structures of governance, leadership and support exercised by management over different stakeholders within the organisations, impacting positively on the moral codes required to enact knowledge sharing from an organisational perspective (Connelly & Kelloway, 2001; Mcdermott & O'Dell, 2001; Ju et al., 2010; Huang et al., 2013).

5.3.2.5.   Governance

Governance is one of the unexpected outcomes generated from the data analysis. In fact, nowhere throughout this study, particularly during the problem conceptualisation, was the aspect of governance outlined. Furthermore, no quantitative analysis was conducted on this matter as understanding governance was achieved by taking into consideration previous determinants of norms for knowledge sharing presented above. This is because governance for the purpose of this study embodies a set of best practices or a normative set of values (just as norms covered in this section) needed for the entrenchment of knowledge sharing in an organisation and is manifested through determinants already described previously throughout

this chapter. Therefore, it has been identified as a major determinant for the entrenchment of knowledge sharing in an organisation. This emanated from the comments made by one of the managers:

> *One of our main task is to be placed in a position of influence in terms of governance…we sit in various governance forums but you would find out that it is mainly information technology based opposed to information management…but knowing its importance for driving knowledge sharing, we are constantly battling to emphasise the importance from our area of business to other businesses.*

Moreover, in order to better understand the context in which effective governance would be achieved, one professional officer expressed the following:

> *The department has shown that we have a very high-level knowledge management steering group or type of governance structure that ensured frameworks, policies take form. This has not yet been formalised into the standing governance committee that should look after the implementation of policies that would guide knowledge sharing…*

> *We need to have governance, a set of senior stakeholders of the city to come together... It is definitely a task that our department is aiming for in the next few months…In the context of our department, we can only show them the importance of knowledge sharing. If we were mandated, we would have the power to indicate and direct how knowledge should be shared in the organisation as a whole.*

In the comments above, several aspects of governance stand out. One is the role of governance in relation to governing knowledge sharing adequately within the department. It is important to note that governance was mainly technology-based. This means that all governance processes such as norms, or a set of normative rules, were employed to make sure that knowledge sharing would be effective in the organisation through technology. In addition, one professional officer said that the department has a very high-level knowledge management steering group, or type of governance structure, that ensures that frameworks and policies take form, as well as other strategies. Furthermore, the determinants presented in previous sections, such as mandate, management support, organisational culture, and performance management, also present as core elements of governance procedures put in

place to ensure adequate entrenchment of knowledge sharing. Although governance has not been properly implemented within the DI and GIS department, it is a task the department is aiming for in the next few months. As such, this outcome also shows how having a legal mandate that would give knowledge sharing practices more power can enforce governance. More directives would be given on how knowledge sharing needs to be shared in terms of what, when and how.

Corporate governance can also be enforced through other adequate strategies such as having communication panels, performance management or a proper organisational structure that would have a more effective influence on knowledge sharing in an organisation. Even aspects of policies, SOPs, knowledge sharing systems and people are all a set of beliefs promoting and alluding to effective governance. If governance embodies any set of best practices and a normative set of values that allude to aspects of norms covered in this section, it represents a crucial determinant to be considered and explored in detail to assess its implications from a knowledge sharing perspective.

5.3.3. The determinants of facilities for knowledge sharing

Finally, in this section, the determinants of facilities entrenching knowledge sharing in an organisation are described. The modality of facility is driven through the structure of domination which entails producing power that originates from the control of resources (Mauerer & Nissen, 2014:116). It means that human agents utilise power in interaction by drawing on facilities such as the ability to allocate material or human resources (Gao, 2007:106). As such, domination involves controlling and using allocative and authoritative resources, along with power over other people or resources (Giddens, 1984).

One outcome, considered as crucial for enabling knowledge sharing with the DI and GIS department and across the organisation was the use of technology. It is important to note that in relation to the institutionalisation of knowledge sharing, it was established that technology drives the implementation of knowledge management strategies.

5.3.3.1. Technology

Based on the review of literature and on the problem conceptualisation, it was envisaged that technology would drive knowledge management strategy needed to institutionalise knowledge sharing in the organisation. The outcome from both the qualitative and quantitative analyses affirms its importance. In light of the analysis performed from the qualitative approach, three relationships were drawn on and expanded to the rest of the department through the quantitative survey for obtaining their feelings on the matter. The first one is that having technology in place enables the organisation to provide fast access to information. The second

relationship is that using technology enhances communication amongst employees across the organisation. The third one is that technology facilitates the integration and coordination of various departments sitting in different locations across the organisation. Lastly, it was ascertained that employees are more willing to share their knowledge by using information technology. The last statement was derived considering the three statements established and in relation to knowledge sharing entrenchment.

In the hope of substantiating the above conclusions drawn from the data, these statements were posed to the rest of the population of the department to assess whether they agreed with the above relationships established. The result of this analysis is shown in Table 5.24 below.

Table 5.24: Statistics on the first statement (N=20)

Descriptive Statistics					
Technology provides faster access to information	Valid	Missing	Mean	Median	Std. Deviation
	19	1	4.32	5.00	1.29

The descriptive statistics indicate a high score mean of 4.32 (SD = 1.29), and a median of 5. A high mean score indicates that most of the respondents believe that technology indeed provides faster access to information, needed for knowledge sharing purposes. However, despite these results, a high standard deviation of 1.29 indicates how spread out the values in the dataset are from the mean, implicating some difference of opinions on the matter. Table 5.25 beneath outlines in detail the prospect of what was considered above.

Table 5.25: Analysis of the first statement on the use of Technology

Technology provides faster access to information.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	10.0	10.5	10.5
	Neutral	1	5.0	5.3	15.8
	Agree	3	15.0	15.8	31.6
	Strongly Agree	13	65.0	68.4	100.0
	Total	19	95.0	100.0	
Missing	System	1	5.0		
Total		20	100.0		

Table 5.24 and Table 5.25 above depict the outcome of the analysis conducted on the first relationship established. From the twenty (20) completed surveys, only nineteen (19) were applicable. The analysis revealed that 10% strongly disagreed to the fact that technology provides faster access to information. This could be due to the fact that the technology in the

department might not have been leveraged properly nor properly driven until the department eventually came on board. Furthermore, despite the recent implementation of the knowledge hub, some employees in the department might not be aware of its capabilities, which points to a management or leadership matter, which further underscores the interaction between modalities for entrenchment. Despite this outcome, one (1) respondent, representing 5% of the responses collected, was neutral on the subject, while the results further show that most of the respondents agreed (15% agreed and 65% strongly agreed), to the relationship established. The notion that having technology in place provides faster access to information was therefore validated in the qualitative analysis.

Furthermore, the second statement, which is that using technology enhances communication amongst employees across the organisation, was subjected to the same analysis process, the results of which are presented in Table 5.26 below.

Table 5.26: Statistics on the second statement (N=20)

Descriptive Statistics					
Technology infrastructure provides efficient and effective means to enhance direct communication amongst co-workers.	Valid	Missing	Mean	Median	Std. Deviation
	19	1	3.63	4.00	1.30

As displayed in Table 5.26 above, the descriptive analysis shows a mixed appreciation of the proposed statement. The analysis reveals a median of 4, and a high mean score of 3.63 (SD = 1.30). Although obtaining a score of 3.63 for the mean, which would suggest that most of the respondents consider technology infrastructures as an important enabler providing efficient and effective means through which direct communication amongst co-workers would be enhanced for knowledge sharing success, the standard deviation of 1.30 from the mean suggests how spread out the feelings are and indicate that the assertion under analysis was not appreciated by all respondents. Table 5.27 below outlines the frequency of the statement analysed for better enlightenment on the outcome.

From the outcome depicted below, it is clear that the responses are divergent. Of the nineteen (19) applicable responses collected, it can be observed that 10% strongly disagreed, 5% disagreed and 25% were neutral. It is also important to note that the number of people who strongly agreed to the first statement on the use of technology decreased, as it can be observed that more people (5) were neutral on the matter. This could be justified with the fact that some might not think that technology on its own would suffice to enhance direct communication amongst employees.

Table 5.27: Analysis of the first statement on the use of Technology

Technology infrastructure provides efficient and effective means to enhance direct communication amongst co-workers.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	10.0	10.5	10.5
	Disagree	1	5.0	5.3	15.8
	Neutral	5	25.0	26.3	42.1
	Agree	5	25.0	26.3	68.4
	Strongly Agree	6	30.0	31.6	100.0
	Total	19	95.0	100.0	
Missing	System	1	5.0		
Total		20	100.0		

Perhaps the people's involvement in creating and sustaining social networking amongst themselves, the organisational culture, and management support, influences perceptions on this matter too. This might also suggest that while technology brings many benefits, it does not mean that technology on its own is a solution. This is clear from the findings that show that technology is perceived to be useful for some aspects of knowledge sharing, while not so much for others, as far as achieving entrenchment is concerned. Thus, a balance of factors is perceived to play a role. Despite these findings, the majority of the respondents were in agreement (25% agreed and 30% strongly agreed) with the notion that technology plays an important role in improving communication amongst co-workers.

Similarly, the third relationship, which is that technology facilitates the integration and coordination of various departments, was also brought to a larger population. The result of this analysis is depicted in Table 5.28 and Table 5.29.

Table 5.28: Statistics on the third statement (N=20)

Descriptive Statistics					
Technology infrastructures are effective and efficient in terms of integrating and coordinating various departments.	Valid	Missing	Mean	Median	Std. Deviation
	19	1	3.79	4.00	1.32

The results of the descriptive analysis reveals a high mean score of 3.79 (SD = 1.32) and a median, being a middle value of the dataset of 4. The analysis therefore portrays a moderate level of agreement with the above statement. The high standard deviation observed indicates how spread out the values in the dataset are from the mean, indicating a difference of feelings regarding the statement. This might be not only because of the recent changes that occurred within the department, especially with the implementation of the knowledge hub "DIRC", but also the difficulty observed in bringing other departments within the organisation to engage in

the platform. Therefore, it could be convenient to suggest that some respondents are unsure of the effectiveness of those technology infrastructures taking into consideration what was mentioned above. The frequency analysis supporting these assertions are depicted in Table 5.29 below.

Table 5.29: Analysis of the third statement

Technology infrastructures are effective and efficient in terms of integrating and coordinating various departments.		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	10.0	10.5	10.5
	Disagree	1	5.0	5.3	15.8
	Neutral	3	15.0	15.8	31.6
	Agree	6	30.0	31.6	63.2
	Strongly Agree	7	35.0	36.8	100.0
	Total	19	95.0	100.0	
Missing	System	1	5.0		
Total		20	100.0		

The outcome indicates that 30% agreed and 35% strongly agreed to the established statement. On the other side, three (3) respondents, representing 15%, refrained to show their position on the matter, while 5% and 10% disagreed and strongly disagreed, respectively, affirming the reasons given under the descriptive analysis for the difference of perceptions and belief on the statement. Overall, the outcome indicates that respondents feel that technology is an effective and efficient tool for integrating and coordinating various departments across the organisation, thereby enhancing communication amongst employees, and providing fast access to information.

Therefore, taking into consideration the three aforementioned relationships established and analysed above, it is important to assess, finally, whether employees were more willing to share they knowledge using information technology. The results are depicted in Table 5.30 and Table 5.31 below.

Table 5.30: Statistics on the assessed statement (N=20)

Descriptive Statistics					
Employees are more willing to share their knowledge by using information technology.	Valid	Missing	Mean	Median	Std. Deviation
	19	1	3.84	4.00	1.12

As displayed in Table 5.30, the descriptive analysis reveals a balanced appreciation of the proposed statement. In fact, the analysis reveals a median of 4, and a high mean score of 3.84 (SD = 1.12). Despite obtaining a mean of 3.84, implying a positive and fair agreement with the belief that by using information technology, employees' willingness to share knowledge would be achieved, a standard deviation of 1.12 indicates a dispersion of views. Surely, as alluded to in previous sections, some might prefer sharing what they know through human interaction and/or may lack technological skills to some extent to use the technology more effectively. Moreover, they may believe that using information technology alone is not enough to enhance their willingness to engage with knowledge sharing activities. The frequency distribution of this descriptive analysis in presented in the following Table 5.31.

Table 5.31: Outcome of the analysis

Employees are more willing to share their knowledge by using information technology.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	5.0	5.3	5.3
	Disagree	1	5.0	5.3	10.5
	Neutral	4	20.0	21.1	31.6
	Agree	7	35.0	36.8	68.4
	Strongly Agree	6	30.0	31.6	100.0
	Total	19	95.0	100.0	
Missing	System	1	5.0		
Total		20	100.0		

The outcome clearly shows a positive feeling from most respondents, because 35% agreed and 30% strongly agreed. This is contrasted by two (2) respondents who clearly do not share the same feeling, representing 5% that each disagreed and strongly disagreed, respectively. However, 20% opted to be neutral. This could be explained by the reason provided above. Surely, they are not quite sure if using information technology would suffice to effectively enhance their willingness to share their knowledge. A combination of all the determinants presented above, along with the use of technology, would constitute a much more effective set of elements that would set the way for knowledge sharing to take place and for its institutionalisation. Nevertheless, considering previous analyses conducted on the use of

technology for knowledge sharing, the above statement is justified. Employees are more willing to share what they know by using technology infrastructures because of many benefits mentioned above, such as the ability to get access to information quicker, facilitating direct communication amongst employees across the organisation, and the ability to integrate and coordinate various departments and stakeholders to achieve the vision of knowledge sharing for their organisation successfully.

The evidence provided above arguably supports the assertion about the importance of technology for knowledge sharing. Forthwith, the conclusions drawn from the quantitative analysis enlighten the understanding of the findings generated from the focus group conducted. As a matter of fact, the responses indicate the importance of having technology infrastructures in place as a driver for knowledge sharing activities. These technologies included a knowledge sharing system, the use of an intranet (e.g., Microsoft SharePoint), and the Internet. The use of knowledge sharing systems for the effectiveness of knowledge sharing activities has been strongly emphasised in the DI and GIS department. This became clear after taking into consideration comments made by one manager during the focus group discussion who stated:

> *Our vision for knowledge sharing success is driven by the implementation of our knowledge sharing systems called the Development Information and Resource Centre (DIRC).*

> *Our knowledge sharing system platform, "DIRC" which is also a knowledge hub, is an additional major tool that we utilise for direct communication to core group users.*

Furthermore, one professional officer made the following comments regarding the utility of knowledge sharing systems:

> *DIRC, on one hand, enable us to store contents such as documents, research reports, policies, and plans in a data repository. And on the other hand, it includes other components like research hub, special portal and lists special layers of the City special access to it. A data directory and an expertise locator are other features incorporated in DIRC.*

> *Our knowledge sharing system provides access to data, information and knowledge resources that relate to development within*

partnership with all municipality departments...and that since the systems is located under the municipality intranet, it is therefore available to all staff.

Through our systems (knowledge hub) we realised the power of knowledge management and knowledge sharing taking all departments operating in silos and making them integrated.

Moreover, other technology infrastructures were considered as important for the department. This included the use of the intranet, Internet and SharePoint from Microsoft. In fact, a similar view emerged from one professional officer who said:

We are fortunate to have a successful intranet-based knowledge platform established.

Since our department came along, we have been able to show the potential in terms of knowledge management using SharePoint…SharePoint was there before, just that it was not utilised and leveraged properly until we came along.

So after more demands from the system, we were able to use SharePoint as our chief knowledge base for communication purposes.

Based on the above comments, it is clear that technology plays a crucial role within the DI and GIS department for the purpose of knowledge sharing. This is manifested through the implementation of technology infrastructure, the knowledge hub, which is considered central to achieving their vision regarding knowledge sharing success. Through this knowledge hub, also perceived as a knowledge sharing system, direct communication amongst core stakeholders within the department and the organisation is enhanced. Furthermore, as alluded to in the comments made by the professional officer, the systems offer various features such as a knowledge repository where content such as documents, policies, standards and related formal or informal documented items can be stored and accessed by any authorised members within the department and the organisation as a whole. Other special features include a research hub, an expertise locator and links to other services offered across the organisation. As such, technology can be applied to enhance direct communication and integrate and coordinate various departments within the organisation, thereby providing a basis through which the process of knowledge sharing could occur.

The above outcomes (both quantitative and qualitative) agree with Davison et al. (2013:96), who assert that interactive information technology tools, knowledge sharing systems, and ICT tools such as the intranet and Internet can promote interpersonal socialisation in the organisational context and facilitate a continuous series of interactions that create and deliver knowledge effectively within an organisation. The outcome is also in agreement with Riege's (2005:30) perception that irrespective of the size of any organisation, formal knowledge sharing practices depend hugely on technology infrastructures that include some kind of shareware and offer support in data acquisition, organisation, storage, retrieval, search, presentation, distribution and reproduction of knowledge, therefore contributing to the success of knowledge sharing in an organisation. The implication of this section for the institutionalisation of knowledge sharing is a more intertwined relationship with all the determinants presented in order to institutionalise knowledge sharing. Technology plays a crucial role in facilitating and enhancing knowledge sharing occurrence in an organisation. Therefore, through consistent use of other determinants such as policies, SOPs, organisational structure, people, culture and other features all combined, knowledge sharing entrenchment would eventually occur.

5.4. INSTITUTIONALISATION OF KNOWLEDGE SHARING

5.4.1 Introduction

The institutionalisation of knowledge sharing entails the entrenchment of knowledge sharing practices in an organisation through the identification of its social determinants using the concept of the duality of structure of Giddens's structuration theory (1984), as a canvas to address the objectives of this study. Through the entire analysis process, the findings generated from both the qualitative and quantitative perspectives were categorised according to the modalities of the concept of duality of structure namely interpretive schemes, norms and facilities. This is because the theory was used as a lens through which this study was guided and provided an effective means to address the research problem.

5.4.2 Lines of communication as interpretive scheme

It is important to note that in this context, interpretive schemes, known as the lines of communication are enforced in terms of positively influencing knowledge sharing through the enactment of policies and regulations which include people, policies, Standard Operating Procedures, knowledge sharing systems, and organisational structure. These determinants are considered important because they have been found useful in terms of communication enhancement amongst employees in the organisation to support and entrench knowledge sharing more effectively.

5.4.3 Best practice and governance as Norms

The modality of norms, being perceived as a set of practices, will facilitate the institutionalisation of knowledge sharing through the entrenchment of a mandate, management support, performance management, organisational culture, and governance for knowledge sharing. All these determinants are considered to effectively enforce the type of moral values and beliefs needed to address matters of institutionalisation of knowledge sharing more effectively.

5.4.4 Information Technology as Facility

Through the modality of facility, the use of technology was highlighted as crucial for knowledge sharing entrenchment. Through applications such as an intranet, the Internet, knowledge sharing systems or any other forms of technology infrastructures, several benefits such as faster access to information, direct communication amongst employees and integration and coordination of various departments, contribute significantly to not only the willingness of employees to engage in knowledge sharing activities, but also make knowledge sharing more successful. Having human agents utilising power in interaction by drawing on facilities such as the ability to allocate human resources or material such as information technology, the concept of E-leadership emerged as a consequence of those considerations. This implies that human agents, through the exercise of power and through the dimension of domination of the concept of duality of structure, enact and sustain emotions and better human management and resource allocation (allocative and authoritative) through the recurrent use of Information Technology.

5.4.5 Conclusion

Given the concept of dimension of duality of structure/technology as a lens through which to understand and interpret an effective institutionalisation of knowledge sharing in an organisation, the outcome of this study indicates that institutionalisation of knowledge sharing is achieved through the production of knowledge management strategies and that it can be reproduced through the monitoring and evaluation of these strategies from which recommendations are drawn to make them more effective. Over time, this process is routinised and becomes embedded in the organisational processes and belief, leading to its institutionalisation. These knowledge management strategies are informed by the social determinants presented in this chapter, which are believed to enact knowledge sharing from a structural perspective through interpretive schemes, norms and modalities.

Therefore, the institutionalisation of knowledge sharing would be achieved through the entrenchment of a set of knowledge sharing practices assembled as determinants of lines of communication, best practice and governance and information technology.

5.5. PROPOSED GENERAL FRAMEWORK: KNOWLEDGE SHARING-IN-PRACTICE

Based on the conceptual framework initially developed to assert this study, and on the presentation of the outcome of the findings generated mainly from the qualitative analysis and supported from a quantitative perspective, a proposed general framework illustrating the institutionalisation of knowledge sharing through the enactment of Knowledge Sharing-in-Practice is depicted in Figure 5.1 below.

It is evident that the proposed general framework differs considerably from the conceptual framework previously presented. This is due to the fact that the results of the analysis presented many more implications, leading to a complete revision and redefinition of the conceptual framework.

As explained in the previous section and in the conceptual framework, in order for the institutionalisation of knowledge sharing to be successful from an organisational perspective, a set of knowledge management strategies needs to be produced and reproduced at the same time through monitoring and evaluation. Over time, these processes become routinised and embedded in organisational belief leading to more effective ways of enacting knowledge sharing and its institutionalisation. Furthermore, the knowledge management strategies produced, believed to contribute significantly to knowledge sharing institutionalisation, are informed by the social determinants identified and presented throughout this chapter. These determinants are categorised and enacted from a structural standpoint through the modalities of the concept of duality of structure of structuration theory, the theoretical lens through which this whole study was guided.
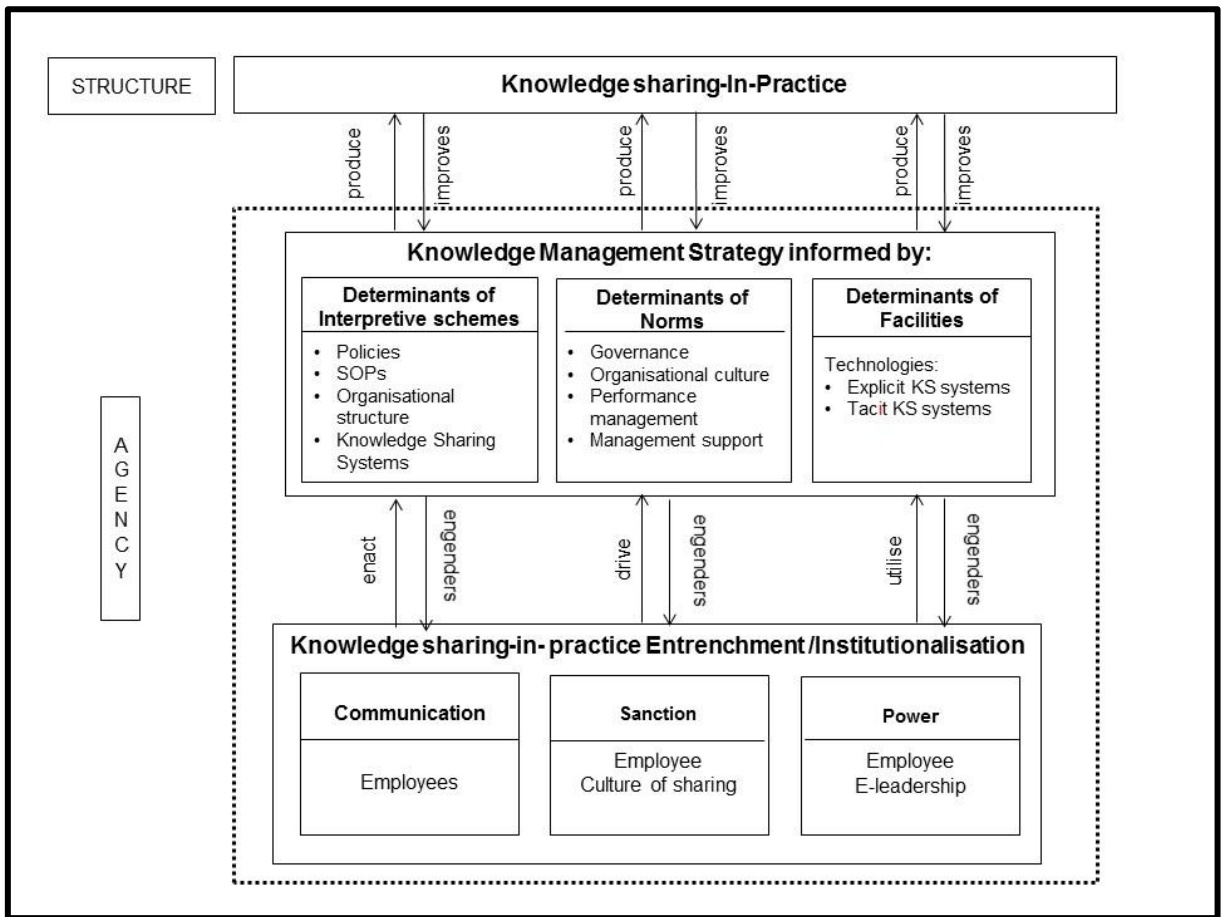
Figure 5.1: General Framework: Knowledge Sharing-in-Practice

As such, in the general framework presented above, the social determinants believed to inform the production of knowledge management strategies are categorised according to the modalities being interpretive schemes (lines of communication), norms (best practice and governance) and facilities (Information Technology). These modalities engendered the mode of interaction, which are the lines of communication for knowledge sharing made possible through employee involvement, the employees' culture of sharing knowledge adequately through a normative set of rules (i.e., behaviour change); and finally, power, which entails the ability of employees to be in better control of resources, which in this case involves the use of information technology, leading to what is called e-leadership. Therefore, the intertwined relationship between the modalities and the modes of interaction contribute to the production of the structure of Knowledge Sharing-in-Practice and at the same time is improved through this structure, thereby affirming the application of the concept of duality of structure.

5.6.   SUMMARY

This chapter outlined the results and interpretation of the findings generated from the two data collection techniques, being a focus group discussion for the qualitative approach, followed by a survey from a quantitative perspective. It is important to note that a mixed method approach was applied in this study to better address the research questions enabling the achievement

of the research objectives. The data was analysed using content analysis and descriptive statistics for the qualitative and quantitative stances, respectively. Furthermore, although employing a mixed method approach, this study was predominantly qualitative, and the quantitative side was not used to generalise the findings, but to support and expand on the results generated from the qualitative side for reliability and validity purposes.

Based on the underpinning concept of the duality of structure, key components of the theory of structuration were used as a theoretical lens through which the research questions were addressed and answered. The outcomes indicate that the institutionalisation of the knowledge sharing in an organisation is contingent on the effective enactment of knowledge sharing practices through the social determinants of interpretive schemes which entail people, policies, Standard Operating Procedures, knowledge sharing systems; the social determinants of norms, which refer to the set of values and practices, driven by proper governance procedure, organisational culture, management support; and the social determinant of facilities, presented as the use of technology, enacted through the implementation of information technology infrastructure such as the Internet, intranet, knowledge management systems and SharePoint (Microsoft).

Therefore, through the entrenchment of these social determinants, the structure of Knowledge Sharing-in-Practice is created and reproduced over time and space, permitting the institutionalisation of knowledge sharing in an organisation.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1.   INTRODUCTION

In the previous chapter, the analysis and interpretation of the findings obtained from the focus group and the survey respectively, were outlined. These findings were guided by the concept of the duality of structure, the theoretical lens, through which the entire study was conducted, and employed mixed methods (qualitative and quantitative respectively).

This study was predominantly qualitative in nature. This is due to the fact that this research aimed at unearthing the social determinants for the institutionalisation of knowledge sharing in an organisation. The quantitative approach was used to expand on and support the data generated from the qualitative focus group interviews to validate the findings. A focus group comprising seven staff members operating within the Development Information and Geographic Information Systems (DI & GIS) department was used to generate in-depth perceptions and insights on matters of institutionalisation of knowledge sharing in an organisation. This was followed by a quantitative survey conducted with the remaining forty-six employees operating within the department to broaden the scope of the findings generated from the focus group with the intention of enhancing the reliability and validity of the research findings.

Content analysis and descriptive statistics were used to analyse the data obtained from the qualitative and quantitative aspects, respectively. The data was analysed in respect of the research questions posed, exploring the themes that were obtained from the review of literature, any other emerging themes that were revealed in the focus group, and through the data obtained from the quantitative survey. The concept of the duality of structure of structuration theory served to categorise the themes identified and to inform the interpretation of the findings.

In the end, the objective of this research was to propose a general framework to guide the institutionalisation of knowledge sharing in an organisation. This, as the outcome of the research is through the identification of its social determinants, with a guide for the entrenchment of knowledge sharing practices. In order to achieve the main objective, the concept of duality of structure was used as the basis to categorise the sub research questions.

6.2. OVERVIEW OF THE RESEARCH

As discussed in the introduction, the aim of this research was to explore the interplay between social factors that determine the institutionalisation of knowledge sharing in an organisation. This was achieved using the concept of duality of structure, the social theory that served to guide the design of the data collection instruments and the collection and analysis of data to address the main objective. This led to the proposed framework for knowledge sharing institutionalisation at the organisational level.

In chapter 1, the importance of knowledge management and knowledge sharing in particular were presented. The research was put in context, considering the significance of the institutionalisation of knowledge sharing in an organisation. Moreover, the problem statement, the aim, objective as well as the main question and sub-questions were also presented. In the second chapter, the theoretical concept of duality of structure was presented. This is considering that this social theory, being a key element of structuration theory, served to underpin the whole study. Therefore, in Chapter 2, an overview of the theory of structuration and its importance to empirical research were highlighted. This chapter also described how the theory supports the information systems realm. More importantly the problem conceptualisation and the conceptual framework, guided by the theory, were achieved.

In the third chapter, current trends and literature on knowledge sharing and its institutionalisation were elaborated. The implication of knowledge management and knowledge sharing in particular were presented in a view to better grasp the importance of knowledge sharing institutionalisation. Knowledge management strategies, corporate support and other elements that served to conceptualise the research problem and framework were examined in detail. In chapter four, as described in the introduction, the methodology pertaining to how this study was conducted and analysed was highlighted. Therefore, considering that the study, although employing a mixed method approach, was predominantly qualitative, it was important to elaborate on the processes followed for the research approach and the type of data collection methods used for both the qualitative and quantitative aspects. In addition, the unit of analysis under study, being the Development Information and Geographical Information Systems department, was presented, as well as the sampling method applied. The data analysis processes for both methods were also described.

The next section elaborates on the research findings that emerged from the sub research questions. Furthermore, the theoretical and practical implications and contributions for this study will also be highlighted, as well as the research limitations and recommendations for future research.

6.3.   SOCIAL DETERMINANTS: LINES OF COMMUNICATION FOR KNOWLEDGE SHARING

The findings revealed that the social determinants for interpretive schemes, being the entrenchment of the lines of communication for the institutionalisation of knowledge sharing in an organisation, are manifested through the use of policies, Standard Operating Procedures (SOPs), organisational structure, people (employees) and knowledge sharing systems.

Having policies in place constitutes an important enabler that would set the map for knowledge sharing to take place, especially with explicit knowledge. However, having policies in place does not guarantee compliance. This is because it is believed that implementing policies alone does not motivate employees to comply. Therefore, considering that in itself, policies would not require employees in an organisation to comply when it comes to knowledge sharing success, SOPs have been identified as a tool that would more effectively bring about compliance with the policies by defining and driving how knowledge sharing would occur. Aspects of organisational structure also emerged as an important determinant for the institutionalisation of knowledge sharing in an organisation. This entails having a body, presumably driven by management, in the organisation that would concentrate on the matter of knowledge management and knowledge sharing in particular, enabling, driving and providing strategic directives given from top managers and executives on what type of knowledge would be shared and how it would be shared. Organisational structure is therefore important for knowledge sharing effectiveness, whether sharing tacit or explicit knowledge.

In addition to the above, the consideration of people's (employees) involvement cannot be ignored or neglected. This is because without human capital, knowledge sharing would not occur in the first place. Considering people is therefore central for the success of knowledge sharing institutionalisation in an organisation as it is through this medium that other features can occur. This means that without human involvement, policies and Standard Operating Procedures, an organisational structure would not exist as these are manifestations brought about by people's involvement. Furthermore, human capital is crucial for creating and sustaining a social network needed for successful sharing of knowledge. By engaging socially more often, trust and social cohesion is enhanced, facilitating the willingness for employees to engage in knowledge sharing activities more openly. As such the assertion that people (employees) support the entrenchment of knowledge sharing in an organisation is justified.

Another crucial determinant identified is the use of knowledge sharing systems. Through technology infrastructures such as the Internet, intranet, Microsoft SharePoint and a knowledge hub for instance, employees within the DI and GIS department were able to improve the line of communication not only amongst themselves in the department but between their

department and other departments, and within the broader organisation as well. It is therefore believed that by using knowledge sharing systems, reports, documents, guidelines and other forms of communication tools, information is shared more efficiently, providing faster access to information, thereby enhancing the line of communication believed to entrench knowledge sharing in an organisation.

6.4. SOCIAL DETERMINANTS: CORPORATE GOVERNANCE FOR KNOWLEDGE SHARING

The main social determinants of norms for the institutionalisation of knowledge sharing are governance, organisational structure, performance management, mandate and management support for knowledge sharing.

As discussed in Section 5.3.2.1, if a mandate was enforced on the department of Development Information and Geographical Information Systems (DI & GIS), it would constitute a formalised approach to the entrenchment of knowledge sharing in the organisation. In addition, policy provisions, and the resultant Standard Operating Procedures, or guidelines, would support the mandate for knowledge sharing. This would enable proper policy alignment for the improvement of knowledge sharing. As such, it is important to establish a mandate to show the importance of knowledge sharing within the department and across the organisation. In light of this, the importance of the support of management, or corporate support, is acknowledged. This is because in order to drive the type of moral codes and set of values needed for knowledge sharing success, it is believed that management directives on the type of knowledge to be shared, how it should be shared, and the considerations that come with it, would be better enforced if coming from executives, or management in general. Furthermore, through management support, dual reporting lines between managers and employees are enhanced, enabling managers to drive and implement the type of moral codes and belief needed to make knowledge sharing more effective. Another determinant believed to play a positive role in knowledge sharing entrenchment is performance management. Even though its application is yet to be seen within the DI and GIS department, it is a good idea to encourage employees through their performance appraisal systems to share knowledge amongst themselves. This could therefore be another influential element to motivate employees to engage more with knowledge sharing. Performance management, therefore, would be suitable to enforce the normative set of rules needed for knowledge sharing effectiveness.

Moreover, an organisational culture has been identified as a crucial determinant for the institutionalisation of knowledge sharing in an organisation. Despite the fact that employees within the department were not aware that such a culture existed, it was evident that it had already existed to drive the norms needed for the institutionalisation of knowledge sharing in the organisation. Through the implementation of policies, SOPs, organisational structure,

people (employees), knowledge sharing systems and other features put in place, a culture of knowledge sharing was therefore entrenched within the DI and GIS department. Organisational culture is therefore considered as an important enabler for knowledge sharing not only because it creates and facilitates a proper environment for social interactions amongst employees but also because through a culture for knowledge sharing, moral codes and norms on how to engage with the sharing of knowledge are enforced. Finally, governance, unexpectedly, was also identified as a crucial determinant for the type of normative set of values that would entrench knowledge sharing from an organisational standpoint. If perceived as a set of good practices, governance encompasses all knowledge management strategies detailed in Chapter 5. It is envisaged that governance would enforce the normative set of rules needed for knowledge sharing success. This takes into consideration aspects of organisational culture and other strategies in place, for instance, as they constitute a set of good practices for the institutionalisation of knowledge sharing.

6.5. SOCIAL DETERMINANTS: TECHNOLOGY FOR KNOWLEDGE SHARING

The social determinants of facilities identified for knowledge sharing in an organisation refer to the use of technology in the context of this study. Indeed, having technology infrastructure plays an important role in the institutionalisation of knowledge sharing. Through technology, direct access to information can be provided amongst employees within the DI and GIS department and with other departments in the organisation. Furthermore, through the use of technology, integration and coordination of other departments can be achieved, allowing them to communicate, exchange and share information more efficiently.

Through the knowledge hub for instance, tacit knowledge, such as reports, documents, policies, guidelines and/or SOPs could be stored in a knowledge repository, allowing employees across the organisation to get access to information. Surely, the willingness of employees to engage with knowledge sharing activities is achieved effectively and efficiently through the use of technology. Therefore, through the use of technology, power is exercised on how information and knowledge could be distributed anywhere in the organisation. This would indeed allow faster access to information, direct communication amongst employees, integration and coordination of various departments in the organisation and definitely facilitate their willingness to engage in knowledge sharing.

## 6.6.	METHODOLOGICAL CONTRIBUTION

Although employing a mixed method approach, being qualitative and quantitative, this research is qualitative in nature making use of an interpretive case study. This is because the intention was to unearth personal beliefs and perceptions on the social determinants enabling the institutionalisation of knowledge sharing in an organisation, thereby leading this study to be conducted inductively. However, to avoid the risk of producing results that are too subjective; quantitative analysis had to be introduced to corroborate the qualitative findings. Furthermore, as far as the researcher is concerned, it is not usual to see a study employing a mixed method approach where the study is predominantly qualitative. Since this study required direct interaction with the unit of analysis under study, being the Development Information and Geographical Information Systems (DI and GIS) department, the empirical nature of this study is justified. The choice of the data collection instruments, being the focus group and the survey, strengthen the richness of the data generated. Perceptions on the matter of institutionalisation of knowledge sharing were discovered using a focus group interaction between the researcher and the focus group participants, while support of the findings generated from this qualitative standpoint was achieved through a quantitative survey, thereby enhancing the reliability and the validity of the research findings. Another methodological contribution is the type of data analysis techniques used in this study. Content analysis and descriptive statistics were used to analyse the data generated from the qualitative and quantitative approaches, respectively. Applying both approaches enabled the collection of in-depth data through content analysis, which was supported by descriptive statistics. This approach provided effective corroboration of the research findings. This is mainly because the data obtained through descriptive statistics was not used to generalise but rather to expand and support the research findings emanating from the qualitative approach.

## 6.7.	THEORETICAL CONTRIBUTION

The theoretical contribution of this study offers new perspectives on how research paradigms can be combined to address a social phenomenon with embedded sociotechnical processes. In addition, the use of the concept of duality of structure as a theoretical lens through which this study was conducted justifies the qualitative nature of this study. The duality of structure plays a major role in terms of addressing knowledge sharing and its institutionalisation. The intertwined relationship between structure and agency, and more importantly through the modalities and modes of interaction of the duality of structure, enables the adaption of those concepts and proposes a general framework for the institutionalisation of knowledge sharing. Moreover, using a social theory like structuration theory in a study employing a mixed method approach highlights the uniqueness of the research. The research questions were guided and answered using principles and concepts of the theory of structuration, making the process followed throughout this study more understandable. Furthermore, the use of structuration

theory together with the interpretive case study methodology has yielded a new and comprehensive understanding of the study of the social determinants for the institutionalisation of knowledge sharing in an organisation.

6.8. PRACTICAL CONTRIBUTIONS

The practical contribution of this research resides in the understanding of matters of knowledge sharing and its institutionalisation in an organisation, through an interpretive case study methodology. Practitioners could make use of the general framework proposed to understand how the institutionalisation of knowledge sharing would be effective. They would also have clear ideas of the type of knowledge management strategies needed and the processes to follow for entrenchment. As such, managers, departments and institutions would be able to direct and manage knowledge sharing more effectively, developing new ideas, implementing new strategies and making knowledge sharing entrenchment a success from an organisational perspective. After all, the institutionalisation of knowledge sharing entails the production of knowledge management strategies informed by the social determinants identified in this study. Over time, these strategies become routinised and embedded in the organisational processes. The reproduction process comes with the monitoring and evaluation of these strategies, from which recommendations are made for improvement, thereby leading to knowledge sharing institutionalisation in an organisation.

6.9. RESEARCH LIMITATIONS

Some limitations need to be considered when approaching this research. The study was conducted in one department, being the DI and GIS department of a public local organisation in the Western Cape, South Africa. This implies that the findings emanating from the data analysis processes cannot be generalised to other organisations. Future research could replicate the study in other departments within the same organisation or in private organisations within the same province or other provinces across South Africa to corroborate the research findings generated throughout this study. By employing a mixed method approach, the time-consuming nature of using two approaches might have been to the detriment of one or other method in terms of the intensiveness of the data collected. As such, this might pose a limitation to the depth of data collected. Future research could try to focus on one research approach, to assess whether the same results or more in-depth findings would emerge. The same applies to the choice of data collection instruments. Although the researcher was able to expand and support the research findings generated from the focus group discussion through a quantitative survey, conducting a one-on-one interview instead of a focus group discussion would generate more data. It is therefore recommended that for future research, especially where both qualitative and quantitative methods are combined, individual interviews should be used for the qualitative perspective to verify the richness of data collected

in both aspects. It should also be determined whether the same research instruments would generate similar or different results in a different context. In addition, future research could be replicated in both private and public organisations in other provinces to compare the research findings.

6.10. RECOMMENDATIONS AND FUTURE RESEARCH

Considering that this research made use of the duality of structure of structuration theory as a guide through which the social determinants for the institutionalisation of knowledge sharing were identified, it is recommended that other researchers employ different theories to determine whether similar determinants would emerge from the research findings. Finally, since governance was an unexpected outcome generated from the data analysis, it is recommended that this determinant should be explored in detail, particularly as it relates to institutionalising knowledge sharing within various kinds of organisations.

Furthermore, it is recommended to executives and management within the department of Development Information and Geographic Information Systems (DI & GIS), as well as other departments in the organisation, to consider the aspect of people (employees) as crucial if they want to successfully address the institutionalisation of knowledge sharing. The reason that this is important is because knowledge sharing would be taking place without employee engagement and willingness to interact with each other. Instead, it is recommended to prioritise employee motivation and satisfaction.

6.11. CONCLUSION

This study highlights the importance of knowledge sharing in an organisation. The fact that knowledge sharing is not institutionalised can be considered a challenge, especially when it comes to organisational performance and success. It was therefore important to address and elaborate on the social enablers that cause the institutionalisation of knowledge sharing to be understood and realised. Throughout the whole research, the theory of structuration was used as the theoretical lens. This theory enabled the conceptualisation and the proposition of a general framework for the institutionalisation of knowledge sharing in the organisation. It is believed that through the social determinants of the line of communication, corporate governance (norms) and technology entrenched in the organisation, the prospect of knowledge sharing institutionalisation can be realised. This, not only in terms of the production of knowledge management strategies that would unfold, but also through the monitoring and evaluation processes for these strategies leading to their reproduction; and through which recommendations could be made to improve them. It is therefore perceived that aspects of institutionalisation would emerge through the cycle of production and reproduction of knowledge management strategies conducted over time.

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APPENDICES

APPENDIX A: INTRODUCTORY LETTER FOR THE COLLECTION OF RESEARCH DATA

Cape Peninsula University of Technology

To whom it may concern

Re: Introductory letter for the collection of research data

Mr Henry Vincent Ndjave Ndjoy is registered for the MTech: Business Information Systems degree at CPUT with student number 211014656. The thesis is titled "Social determinant for the institutionalization of knowledge sharing in selected organisations in the Western Cape, South Africa", and aims to develop a framework for institutionalization of knowledge sharing. The main supervisor(s) for this research is/are Dr Micahel Twum-Darko and Ms Lee-Anne Harker.

In order to meet the requirements of the University's Higher Degrees Committee (HDC) the student must get consent to collect data from organizations which they have identified as potential sources of data. In this case the student will issue a questionnaire to gather relevant data.

If you agree to this, you are requested to complete the attached form (an electronic version will be made available to you if you so desire) and print it on your organisation's letterhead.

For further clarification on this matter please contact either the supervisor(s) identified above, or the Departmental Research Committee Secretary at 021 460 3833.

Regards

Dr. Michael Twum-Darko
Academic and Postgraduate Programme
Date:

1 | P a g e

PO Box 1906 Bellville 7535 South Africa
086 123 2788

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APPENDIX B: RESEARCH STUDY APPROVAL

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

CORPORATE SERVICES AND COMPLIANCE

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2015-09-04

Henri-Vincent Ndjave Ndjoy
M-Tech candidate
CPUT

RESEARCH STUDY APPROVAL

I refer to your request to conduct research study on the Topic: The social determinants for institutionalisation of knowledge sharing for selected organisations in the Western Cape, South Africa.

The request for research is approved subject to the following conditions:

1. The respondents (City officials) are not obliged to respond or participate, but do so voluntarily and to the extent that they are able or wish to respond or participate.
2. If the research results are published, the name of the City of Cape Town is not to be used without the City's prior permission.
3. It is to be stated in your thesis that it has been prepared in your personal capacity and does not reflect the views of your employer.
4. A copy of the final, completed thesis is to be sent to the Director: Information Systems and Technology(Andre Stelzner); the Acting Director : Internal Audit (Vincent Botto) and the Director: Development Information and Geographic Information System (Keith Smith)

I wish you well in your research.

GERHARD RAS
EXECUTIVE DIRECTOR: CORPORATE SERVICES & COMPLIANCE

APPENDIX C: ETHICAL CLEARANCE

Cape Peninsula University of Technology

P.O. Box 1906 • Bellville 7535 South Africa •Tel: +27 21 6801680 • Email: saliefa@cput.ac.za
Symphony Road Bellville 7535

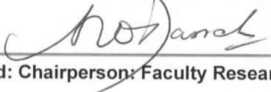| Office of the Chairperson Research Ethics Committee	Faculty:	**BUSINESS**

At a meeting of the Research Ethics Committee on 16 September 2015, Ethics Approval

was granted to NDJAVE NDJOY, HENRI VINCENT (211014656) for research activities

Related to the MTech/DTech: MTech: BUSINESS INFORMATION SYSTEMS

at the Cape Peninsula University of Technology

Title of dissertation/thesis:	The social determinants for the institutionalisation of knowledge sharing in selected organisations in the Western Cape, South Africa. Supervisor: Dr M Twum-Darko

Comments:

Decision: APPROVED

Signed: Chairperson: Research Ethics Committee	16 September 2015 Date
Signed: Chairperson: Faculty Research Committee	28/09/2015 Date

Clearance Certificate No | 2015FBREC290

APPENDIX D: INTERVIEW GUIDE

Questionnaire for Interview

Social determinants for institutionalisation of knowledge sharing in selected organisations, Western Cape South Africa.

This questionnaire is designed to reveal perceptions of social determinants important for the institutionalisation of knowledge sharing in a selected organisation in the Western Cape, South Africa. The outcome of this research is envisaged to generate new strategies for reinforcing efforts to nurture and invigorate knowledge sharing within an organisation. The results of the study will be presented as a general framework to support institutionalisation of knowledge sharing at the organisational level.

Note: Please be assured that the results of this interview will be dealt with complete confidence. **The data obtained in this study is strictly confidential and will be used for academic purposes only.**

Determinants for Institutionalisation of knowledge sharing:

Interpretive schemes

1.   How do you ensure that knowledge sharing occurs in the organisation?

2.   Do you use any forms of communication to enhance sharing of knowledge amongst employees? If yes, what types of communication tools are in place to encourage knowledge sharing? If no, please elaborate on the reasons.

3.   Do you have strategies in place to guide knowledge sharing activities? Please elaborate.

4.   Do you find those strategies effective in the way that they enhance the lines of communication amongst co-workers? Please elaborate.

5.   Do you make use of formal methods of documenting knowledge and creating knowledge bases enabling employees to share knowledge? Please elaborate on them by indicating how they influence/impact your sharing of knowledge in your organisation.

Norms

6. How would you describe your organisational culture in terms of knowledge sharing and what is management's role in influencing this culture?

7. What types of moral codes or values do you think are necessary for successful knowledge sharing in your organisation? Please elaborate.

8. How is/ can knowledge sharing be institutionalised as a culture/norm?

9. What would you consider as motivating factors on your willingness to share knowledge among your co-workers?

Facilities

10. Do you think that organisational structure plays an important role in the sharing of knowledge? (Yes/No). Please elaborate.

11. How has the organisational structure influenced knowledge sharing in your organisation?

12. What type of systems or mechanisms do you have in place to enable people to share knowledge?

13. What type of technologies do you consider important in the enhancement of knowledge distribution within your organisation?

14. What would you consider as the benefits of using technology to share knowledge across your organisation?

15. Are employees more willing to share their knowledge using information technology? What are the possible challenges you face with regard to technology and knowledge sharing?

16. Are processes in place to ensure that knowledge sharing takes place? Please elaborate.

Social determinants for institutionalisation of knowledge sharing in selected organisations, Western Cape South Africa.

The focus group discussion is designed to reveal perceptions of social determinants important for the institutionalisation of knowledge sharing in a selected organisation in the Western Cape, South Africa. The outcome of this research is envisaged to generate new strategies for reinforcing efforts to nurture and invigorate knowledge sharing within an organisation. The results of the study will be presented as a general framework to support institutionalisation of knowledge sharing at the organisational level.

Note: Please be assured that the results of this group discussion will be dealt with complete confidence. **The data obtained in this study is strictly confidential and will be used for academic purposes only.**

Transcription Focus Group Conducted on the 12ᵗʰ February 2016

Researcher: Good Day everyone. I am Henri Vincent, MTech in Business Information Systems at Cape Peninsula University of technology and I am here with my supervisor regarding the conducting of our study. The study entails identifying social determinants for institutionalisation of knowledge sharing at organisational level.

Respondent 1: Thank you, from my side. The research started on this phase of the project with me. Then, in my absence, my assistant, Mr P, facilitated everything for him in order to move forward with his study. This is a City manager approved study. Just to give you a quick background about who we are and what we do… we are the DI and GIS department. Essentially, we carry the information and knowledge management mandate for the city. So, you can look at us as Corporate IKM. Under Corporate IKM, we have many branches but for the purpose of today all the branches under the department form part of the corporate IKM mandate. Let us make this focus group a dialogue. From my side, I manage one of the branch which information and knowledge management. We do have six changes (branches). So, for the purpose of your study, I am here with my staff members who have different portfolio. And we also have one of our strongest branches in terms of the development information represented by Mrs J, various members and interns. And as we go along, we will try to talk about unmentioned aspects you may need for understanding.

Researcher: Thank you Mr K for your brief introduction. The first question I would like to ask is, "How do you make sure that knowledge sharing is effective in the organisation? How do you make knowledge sharing happen"?

Respondent 1: Let me take it from where I started in terms of the corporate structure. Someone at the fore site like Dr Darko mentioned when we came to the unicity from the seven administrations to somewhere in the unicity organigram realised that knowledge management had a place. They realised the importance to have in the corporate structure, a body that would

look at knowledge management. I would start answering you by looking at that. Corporately, the organisation ensured there was a body that have to mandate for insuring knowledge management. Inside knowledge management, there is the aspect of knowledge sharing. That is the one thing. If I break it down from there, then we had to come up with policies, frameworks and strategies that will address this issue of knowledge management that would sort of set the roadmap for how this happen. This has happened since 2005 up to now. So again, in terms of how do we ensure knowledge sharing from a corporate structure, which is the way we do it. If you want to go further than that, we got to start talking about the mechanisms that we put in place. And our vision for knowledge sharing is that we want to build knowledge hubs. Inside those knowledge hubs, all the processes and procedures and people involved there will ensure knowledge sharing. So, to that end, frameworks were driven by the vision of knowledge hubs. And our first knowledge hubs called "DIRC", which was always meant to act as the first kind of template for the broader vision of ours; which of course is driven our director. And we were successful with that. We built it. We launched it. We did all the supporting. Mrs J did a lot in the marketing side. Once that was up in terms of ensuring knowledge sharing, it became something real and not conceptualised that we wanted to sell. Up to the point of delivery of our platform, people would not really get in what we, the knowledge management workers first understood. As soon as we made our product, things started to fall into places. We then got council, we were all welcomed in certain departments and we took it from there. So, our pitch when we go to department as the corporate IKM unit is always to try to get them either start knowledge hubs in certain business areas or contribute to existing knowledge hubs.

I will use another example, the "open data" project that we started two years ago. We are the 1st municipality in Africa to launch open data. It is a very big project but again it simply follows our philosophy to building integrated business knowledge hubs. In this case, "open data" was the focus. In DIRC, however, development information was the focus and so forth and so on. Our long-term vision is to have the whole of City driven by those knowledge hubs. Remember, all of the business of making the City run, is being done daily by administration which consist of anywhere between 50 and 80 departments. But the richness of information and knowledge that flows out of that is what we want to integrate into our knowledge hubs to support planning and other related activities.

***Respondent 2:** If I can add something to that? When you ask how we ensure that knowledge sharing occurs in an organisation…I mean you did mentioned about policies and frameworks, but was it in at some point that it was sort of mandatory coming down from city managers or…that they are going to maybe enforce…that would be a strong word but in terms of policies…that everyone had to comply? Do you mind elaborating more on that?*

***Respondent 1:** Our long-term vision via the policies implementation at the moment is that we are still being more current that stick if you know what I mean…we are trying to sell a valued proposition and getting people involved. We said to them, "Look…these are the benefits to you as a business; these are the benefits to corporate and the City as a whole by getting involved with us". But as Mrs J is pointing out, that is going to become a not so nice approach over time. Policies are in place in terms of enforcement. One of our long-term visions is to make sure that this become something on their business plan to which they will be holding…becoming an element of compliance (Key Operating Indicator KOI). But for now, we are playing nice.*

***Respondent 3:** What the department would like to say, what promote the sharing, the partnership is that…and it is different from other departments…but is what values it can bring…and that is why it is a concept difficult to explain to people. Because it is concept, it is*

not tangible, it is not real…but in DIRC we built something that you can actually market. And that is one of the things that promote the type of culture.

Researcher: *Thank you all for your contribution. I think this leads to another part of the discussion very important…you have policies, processes, procedures and mechanism in place. Are those mechanism effectives in the deployment of knowledge across the organisation? If no can you elaborate on that?*

Respondent 1: *Let me take a back seat and try to contextualise this point. You are speaking here now about our corporate mandate. However, long before we came along and long before the creation of this department, we must accept that knowledge management and knowledge sharing and information management was happening already across the organisation in all the departments. From where we sit though, it is not as coordinated and integrated as what our vision would like it to be. So, in the case of knowledge sharing not happening and information, how did those departments operated all along? Long before we came along, they have been delivering services to the City for decades. I would like you to keep that in mind. Therefore, our job wasto start formularise, coordinate things and to start integrating all various components. As for me, knowledge management and knowledge sharing are synonymous with integration and coordination. All those efforts have been happening at ground level.*

Respondent 4: *I think as Mr K explained, knowledge management existence in an individual department was probably more silo whereas with corporate IKM it was more transversal (transversal knowledge sharing) …could be more transparent and enhance those mechanism that have been put in place. And coming back to your point about on policies, we have a number of policies sort of fitting into various branches in our department. So, the policy itself doesn't really kind of enforce people in the organisation to always comply. And what we are moving toward is the implementation of SOPs (standard operating procedures) that would have more effective translation into compliance in the organisation.*

Supervisor: *May I ask something? In every organisation there are structure which forms part of governance, right? Where do you sit in the governance structure of this organisation?*

Respondent 1: *Thank you for this very good question. One of task is to be placed in a position of influence in terms of governance. So, what you have currently is various governance forums but you would find out that it is mainly information technology based as opposed to information management. So, we seat in various forums but we don't have a dedicated IKM governed forum driven by a city manager and an executive management. Then we are constantly battling to emphasise the importance of our area of business to businesses. Mr A was talking about silos versus integration. We are saying we would like to realise the power of knowledge management. Taking all in silos and you are making them corporate; you would just be increasing the value of your knowledge.*

Respondent 5: *If I may elaborate more on that, in our recent IKM working group in developing an IKIM framework or guideline of our department and the city, one of the things that have been identified is governance. We need to have governance, a set of senior stakeholder of the city to come together. It is a structure that has been identified but hasn't formalised and put in place. And it is definitely a task that our department is aiming for in the next few months.*

Respondent 1: The 10 years of history into the department has shown that we have a very high-level knowledge management steering group or type of governance structure ensured frameworks, policies take form. This was never formalised into the standing governance committee that should be looking after that (implementation of policies that would guide knowledge sharing).

Respondent 2: If I can add to that comment…initially, our department was always part of planning and economic directorate if I may put it that way as the IKM developed and the GIS side of the department changed, got more important, don't you think that was the reason we could have been part of the corporate services directorate at the time changed from a more strategic vision to a more corporate one? I don't know. I am just assuming.

Supervisor: Before you answer, can I just add to that …do you see the role you occupy in the organisation as a strategic one or not?

Respondent 4: Well, that is one of our biggest challenges because as Mr K mentioned in the introduction, we have six branches under our department. Four out of the six branches are corporate, while the two others occupy a more strategic and sort of specific to a particular function and sector. For instance, one of our branches, Development Information, is one of the core unit of our branch. Our core business is directly to be involved in sort of strategic approach (strategic research, policies, framework and other programmes).

Respondent 1: Knowledge management occupy a strategic position in the organisation. From data, the knowledge management comes in when it comes to strategic decision making and work planning etc.… for interest sake, our names used to be Strategic Development Information and GIS. Then the mayor decided to remove the term strategic from our names.

Respondent 4: Because there was a strategic policy unit already in place and there was also a strategic development information unit in our branch. Even though the strategic unit has moved to the mayor office, it doesn't mean that we don't deal with strategic anymore.

Respondent 5: If I may expand on what has been said here, the City is an organisation that comprises more or less 27000 people. Our department comprise of total of 54-60 people including interns. Our resource is not enough to tackle all various challenges we want to address…for instance, IT department support the City with IT deployment and maintenance and they are resourced accordingly (almost 1000 employees). So, our resource, with the 54 that we are, needs to do everything or choose the battle that we can fight because we just cannot fight all of them.

Researcher: In that way, do you make use of communicating tools beside the knowledge hubs? If yes, can elaborate on that?

Supervisor: Let me simplify it. Your "DIRC" is a knowledge repository. So how do people access it? What have you provided to make it easier for people to access information?

Respondent 1: Currently we would say that our main knowledge management platform is "SharePoint" from Microsoft. And we are fortunate in terms of our internal infrastructure (Western Cape, the City…) that our ICT are very strong. Therefore, we don't have issues with that infrastructure in place. SharePoint infrastructure has been in place in its basic forms from 2007 through right our lasted version 2013. We are still currently based in our 2013 intranet. Infrastructure was always put in place but that hasn't always been leveraged. Since our department came along, we have able to show the potential in terms of knowledge management using SharePoint. Believe me it was there before, just that it was not utilised and

leveraged properly until we came along. So, after more demands from the system, we were able to use that as our chief knowledge base.

Respondent 4: *If I could just add... Yes, the "DIRC" is a repository and sometimes can be stuck in the sense that it doesn't sort of motivate people to go to it and use it. So, to sort answer your question, one of mechanism we have in place is to have monthly or quarterly communication panel or group comprising of colleagues that sit and discuss about the use of that repository and make amendment on how to improve the platform. I think that is an additional tool that we utilise is direct communications to core groups of users.*

Respondent 5: *DIRC is also located under the City intranet, therefore making it available to all City staff.*

Respondent 2: *But that has been quite a big deal to bring all staff and employees to use the platform.*

Respondent 1: *In terms of making ourselves known and heard, we market and sell ourselves to our various partners, during various executive meetings and we explain the benefits that we (IKM) can offer. We also do workshop, our GIS staff go on a monthly basis to sub council sit along administrative in one of our big venues to discuss about some of our tools being DIRC, corporate IKM. We also have an important number of interns on one programme. Our intern almost the IKM marketing person of that year scattered throughout the City. We constantly are pushing our programme.*

Respondent 2: *And also from our point of view, when we have any request for DIRC regarding development information or statistics or some research undertaken, then I always try to send the link for DIRC, therefore pointing people to the site since it is the first portal of corporate IKM and try to make it more automated.*

Respondent 5: *Essentially DIRC is a couple of things not a content repository. On one side, we store content like documents, research reports, polices, plans in that repository. The other components include a research hub that is like a research management tool. Then we do have a special portal in the DIRC that comprises a lot other components. It is like the view lists special layers of the City special access to it. We also have a data directory that list data for data repository from various departments. We also got an expertise locator. So DIRC is a big tool that include various components other that a knowledge repository.*

Respondent 1: *When we wrote the IKM policies, one of the items we emphasised is that when everything is signed off, City managers will issue a proof or something to force other business to come to DIRC and get all the City statistics, materials they may require. So, every City official has to go first the official statistics and once we delivered on the functionalities for validation and accountability.*

Respondent 2: *Yet, the department that still is responsible for that statistics (human settlement, informal settlement) …I mean they still look at our information but we would engage with them prior making it official.*

Respondent 1: *It is a form of governance. Via our processes in getting the information unto the site (DIRC), we have to ensure that we don't get burned. We have to make sure that we do not misrepresent. Mrs C has agreements with all the parties that feed the official statistics. From then, in a sense, all of them sign off to acknowledge the input of a given quarter. Now if something goes wrong, we would protect ourselves by saying that we put these informations*

on but we have got agreements proof of the customers. Now in term of governance, this is something we need to do more often in order to protect ourselves.

Researcher: *What would consider as motivators for the sharing of knowledge amongst employees?*

Respondent 5: *I think I know where you are coming from. You are talking about the ideal world where professionals start to share their knowledge. That is a cultural approach in an organisation. Some organisations succeed well because it is something built into their culture but in others it is not. I don't know if you have learnt more about us but the City is hierarchical bureaucratic organisation type, if I may say it like that, where knowledge sharing would not happen as it should between a manager and his or her assistants or workers because this is not the way the organisation was guided. I am not even sure that what we are trying in terms of our knowledge management strategy is to create a culture. Where professionals genuinely share their knowledge, help each other…no, I don't think so. When you create a culture of equality, maybe it can start…but not in our organisation. This happens in the new dynamic organisations.*

Respondent 6: *If you look at the type of organisation that you have, that is what the private sector does. They use knowledge management for competitive advantage. They share information to be steps ahead from competitors to deliver their services very faster. Here we are talking about service delivery. We are not even in competition with anyone. The information we have is shared as a unit.*

Respondent 1: *We can propose new strategy to enforce knowledge sharing from a cultural point of view but the reality is that in the ideal world, everyone in an organisation is supposed to share what they know. However, in the real world, we have got to have some reasons that make our while to share. In Deloite, they are becoming stronger as a group when they share they knowledge and expertise amongst various business unit. They have got resources (money) for it from top to bottom line. If I came back to your question, what is the key to unlock knowledge sharing? If you have a concrete answer, we would be happy to use it (meaning we don't have a proper one…everything differs based on various contexts). We admitted that we have got to show valued proposition.*

Respondent 6: *Like they all mentioned, it is not like there are no tools available. Our DIRC is there, as well as SharePoint. But they are not all integrated.*

Researcher: *In terms of moral codes, what types of norms do you consider necessary for effective sharing of knowledge?*

Respondent 6: *Like I say, we are not a kind of profit making organisation. We are just mandated by legislation. There are cases for instance where knowledge management is not mandatory in terms of legislation. In the context of IKM, we can only show them the importance of sharing knowledge. If we were mandated, we would have the power to indicate and direct how knowledge should be shared in an organisation and our department.*

Respondent 3: *We can all become psychologists and look at what motivate individuals, departments to share knowledge and with a big organisation like ours, it is very difficult to know with certitude those factors.*

Supervisor: *You must also understand that we are coming from a research perspective where we want to identify, should this have taken place or being there, would that be feasible? So,*

the kind of framework or model we will come up with will indicate those factors. It is a very good point to know about those attributes to find out if they are there.

Respondent 1: *Transversal management has become a wide area of focus in the last two years in terms of transforming the organisation. So, in terms of enhancer of knowledge sharing, flat structure, organisation structure play an important role. Having dual reporting line pushed by management will definitely motivate employees to share knowledge more effectively.*

Respondent 5: *Because of the type of organisation we are, we can only have certain characteristics. In other organisations, knowledge sharing is a core imperative. It is written into their structure that knowledge sharing is something they need to do to direct their organisation vision. That is not the case in an organisation like ours.*

Respondent 4: *One of concrete mechanisms could be sort of building the need for knowledge sharing using the performance management of departments as well as employees in a department. Therefore, they could be measured to what extend they engage with knowledge management. Therefore, realistically in a bureaucratic organisation, building a performance management as a possible alternative we may seek to use.*

Researcher: *Thank you for all your contributions and also for the opportunity to have this forum with you and try to get more insight into our study. We can assure that everything said will be dealt with strict confidentiality. We will get back to you shortly for the second phase of our data collection process, which is the survey.*

APPENDIX F: EMAIL INVITATION TO THE COMPLETION OF THE SURVEY

Henri Vincent Ndjave Ndjoy

From: Henri Vincent Ndjave Ndjoy
To:
Date: 31 May 2016 at 12:35 PM
Subject: Invitation to the completion of the survey
Attachments: Research Questionnaire HV Ndjave Ndjoy.docx, Approval Henri-Vincent Ndjave Ndjoy-Consent Letter.pdf

Good day Sir/Madam

I am Henri Vincent, a student currently completing his Mtech (Magister Technologiae) in Business Information Systems at the Cape Peninsula University of Technology (CPUT).

I have requested and been granted permission from the City of Cape Town to undertake a survey with relevant staff of the Development Information & GIS department.

This is an invitation to assist with the completion of the attached survey for research and academic purposes. Please see approval letter attached.

The title of this study is **"The social determinants for the institutionalisation of knowledge sharing in a selected organisation in the Western Cape, South Africa"**

In fact, the aim of this study includes identifying the social enablers for institutionalising knowledge sharing, with your department as the case-study through which the research is conducted.
The first part of the study took place on the 16th February 2016 in the form of a focus group discussion with six staff members of the DI & GIS department. This discussion entailed the gathering of perceptions, insights and opinions on matters of knowledge sharing institutionalisation. Various findings and variables were generated from the discussion.
The attached quantitative survey serves as a supporting tool for the purpose of testing and validating the findings already gathered during the qualitative focus group discussion.

Please note that this study is purely for academic and research purposes and be assured that confidentiality as well as anonymity will be respected.

I am always available if explanation, clarification or additional information is required.
Hoping for your assistance and participation and would greatly appreciate if all surveys be submitted by the 10 June 2016.

Kind Regards
Henri Vincent
0782156744
h.vince007@gmail.com

RESEARCH QUESTIONNAIRE

RESEARCHER DETAILS	
Name:	Henri Vincent
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RESEARCH TITLE
The social determinants for the institutionalisation of knowledge sharing in a selected organisation in the Western Cape, South Africa.

ETHICAL CONSIDERATIONS
Participation in this study is purely voluntary. Anonymity of the respondent will be strictly respected. The information gleaned from this process will be used solely for academic purposes and confidentiality will also be respected.

HOW TO COMPLETE THE SURVEY
In order to complete the questionnaire, the participant should tick the relevant check box. Only one box is required to be ticked by the participant.

PRIMARY OBJECTIVE OF RESEARCH
The study is designed to reveal perceptions about the social determinants for the institutionalisation of knowledge sharing within an organisation. The outcome of this research is envisaged to generate new strategies for reinforcing efforts to nurture and invigorate knowledge sharing within an organisation. The results of the study will be presented as a general framework to support the institutionalisation of knowledge sharing at the organisational level.

INFORMED CONSENT

Please note that you are welcome to contact either the researcher and/or the supervisors for clarification on questions you may not understand. Moreover, you are free to withdraw from the study at any time should you feel to do so.

Key Terms:

Knowledge base:
Data and knowledge repository from which employees operating in various departments can access information.

Governance:
All processes of governing, whether undertaken by formal or informal organisations and includes the mechanisms required to balance the powers of the members (with the associated accountability), and their primary duty of enhancing the prosperity and viability of the organisation. It is also referred to as corporate governance.

Panel:
Group meetings and workshops for knowledge sharing.

Knowledge sharing systems:
Technology applications, software and hardware used to facilitate the storage, access and dissemination of knowledge across the organisation.

Management support:
The roles and responsibilities of top senior managers and executives to effectively influence knowledge sharing activities by encouraging employees to freely share what they know through proper leadership and effective and efficient knowledge sharing strategies.

Mandate:
Authority given by City managers to legally carry out tasks and activities, such as aspects of knowledge management and knowledge sharing in an organisation.

Name of participant _____ Signature of participant _____

Date: _____

DELINEATION CRITERIA

1. Under which branch are you working?

Spatial Data Management	[ ]	Development Information	[ ]
Geomatics	[ ]	Knowledge Resources & Support	[ ]
Information & Knowledge Management (IKM)	[ ]	Records Management	[ ]

2. On which occupational category are you operating?

Manager	[ ]
Professional	[ ]
Technical	[ ]
Intern – Student	[ ]

3. You are

Male	[ ]	Female	[ ]

4. Your population (ethnic) group is

Black	[ ]	Indian	[ ]
Coloured	[ ]	White	[ ]

5. Your length of service in the organisation is

1 – 5 years	[ ]	11 – 15 years	[ ]
6 – 10 years	[ ]	16+ years	[ ]

LINES OF COMMUNICATION

6. Having policies in place encourages knowledge sharing amongst employees.

Strongly Disagree	[ ]
Disagree	[ ]
Neutral	[ ]
Agree	[ ]
Strongly Agree	[ ]

7. The use of Standard Operating Procedures (SOPs) and Guidelines (or equivalent) is considered as effective for enforcing knowledge sharing.

Strongly Disagree	[ ]
Disagree	[ ]
Neutral	[ ]
Agree	[ ]
Strongly Agree	[ ]

8. I consider people's involvement in creating and sustaining networking amongst co-workers as a driver for knowledge sharing in the organisation.

Strongly Disagree	☐
Disagree	☐
Neutral	☐
Agree	☐
Strongly Agree	☐

9. I consider the use of knowledge sharing systems as a fundamental means of communication for knowledge sharing.

Strongly Disagree	☐
Disagree	☐
Neutral	☐
Agree	☐
Strongly Agree	☐

10. Formal methods of documenting knowledge and the creation of a knowledge base encourage employees to share knowledge.

Strongly Disagree	☐
Disagree	☐
Neutral	☐
Agree	☐
Strongly Agree	☐

11. The organisational structure is a means to influence the lines of communication and knowledge sharing amongst employees in the organisation.

Strongly Disagree	☐
Disagree	☐
Neutral	☐
Agree	☐
Strongly Agree	☐

12. Communication panels enhance knowledge sharing activities amongst co-workers.

Strongly Disagree	☐
Disagree	☐
Neutral	☐
Agree	☐
Strongly Agree	☐

CORPORATE GOVERNANCE
13. A mandate is necessary to encourage knowledge sharing in the organisation.

Strongly Disagree	☐
Disagree	☐
Neutral	☐
Agree	☐
Strongly Agree	☐

14. The role of management support is very important in terms of governance for knowledge sharing.

Strongly Disagree	☐
Disagree	☐
Neutral	☐
Agree	☐
Strongly Agree	☐

15. Organisational culture is important for successful knowledge sharing in the organisation.

Strongly Disagree	☐
Disagree	☐
Neutral	☐
Agree	☐
Strongly Agree	☐

16. Performance management is a driver for corporate governance in terms of knowledge sharing amongst employees and departments in the organisation.

Strongly Disagree	☐
Disagree	☐
Neutral	☐
Agree	☐
Strongly	☐

17. Organisational structure plays a major role in terms of corporate governance for knowledge sharing in the organisation.

Strongly Disagree	☐
Disagree	☐
Neutral	☐
Agree	☐
Strongly Agree	☐

TECHNOLOGY INFRASTRUCTURE
18. Employees are more willing to share their knowledge by using information technology.

Strongly Disagree ☐

Disagree ☐

Neutral ☐

Agree ☐

Strongly Agree ☐

19. Technology infrastructure provides efficient and effective means to enhance direct communication amongst co-workers.

Strongly Disagree ☐

Disagree ☐

Neutral ☐

Agree ☐

Strongly Agree ☐

20. Technology infrastructures are effective and efficient in terms of integrating and coordinating various departments.

Strongly Disagree ☐

Disagree ☐

Neutral ☐

Agree ☐

Strongly Agree ☐

21. Technology provides faster access to information.

Strongly Disagree ☐

Disagree ☐

Neutral ☐

Agree ☐

Strongly Agree ☐

THANK YOU FOR YOUR PARTICIPATION
If you would like to receive feedback on the study please provide us with your email address:

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