PUBLIC SECTOR KNOWLEDGE MANAGEMENT IN A KNOWLEDGE ECONOMY: THE CASE OF ETHEKWINI METROPOLITAN MUNICIPALITY

By

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DECLARATION

I, Lungelo Goodenough Msomi, declare that

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(ii)   This dissertation has not been submitted for any degree or examination at any other university.

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Signature:

ACKNOWLEDGEMENTS

DEDICATIONS

I hereby dedicate this study to:

My son, Lunga Zamokuhle Mvelo Msomi; may you grow up to be anything you want to be and I hope that you turn out to be better than me. Daddy loves you.

Mr K.C. Buxeka, beloved friend and colleague; may his soul rest in peace and his memory live on through his son and family.

GLOSSARY OF ACRONYMS

ABET	Adult Basic Education and Training
ABMP	Area Based Management Programme
CBO	Community-based Organisation
COGTA	Department of Cooperative Governance and Traditional Affairs
DMS	Database Management System
GDP	Gross Domestic Product
GIPO	Geographical Information and Policy Office
GIS	Geographic Information Systems
GITOC	Government Information Technology Office Council
HR	Human Resources
ICT	Information Communication Technology
IDP	Integrated Development Plan
INK	Inanda, Ntuzuma, KwaMashu
IS	Information Services
IT	Information Technology
KM	Knowledge Management
KMRG	Knowledge Management Reference Group
KZN	KwaZulu-Natal
MDG	Millennium Development Goal
MILE	Municipal Institute of Learning
MSLCS	Municipal Services and Living Conditions Survey
NGO	Non-governmental Organisation
SACN	South African Cities Network
SDU	Skills Development Unit
SITA	State Information Technology Agency
SPSS	Statistical Package for the Social Science
UKZN	University of KwaZulu-Natal
UN	United Nations
URP	Urban Renewal Programme

ABSTRACT

Public Sector Knowledge Management in a Knowledge Economy: The Case of eThekwini Metropolitan Municipality.

In the 21st century, which has been labelled the information age, knowledge is predominantly seen as one of the most, if not the most, important asset in organisations. Knowledge should therefore be managed carefully. However, knowledge management (KM) is a relatively new managerial practice, particularly in South Africa. Although there is evidence of KM being introduced and implemented in the South African public sector, there is scant empirical evidence of progress and benefits. This mixed method research design employed a case study strategy with eThekwini Metropolitan Municipality as the case and six municipal units/departments as units of analysis. The study is driven by a theoretical framework that encompasses KM constructs of codification strategy and personalisation strategy on the one hand with personal motivation and organizational structure as factors that affect knowledge transfer on the other hand. Probability and purposive sampling techniques were used to engage study respondents and ethical protocols were followed. Sources of evidence include surveys, interviews, observation and documentary evidence. Quantitative data were analysed using SPSS and qualitative data through a combination of content, thematic and matrix analysis.

The municipality is innovatively shifting from the rationalist conception of knowledge transfer as objective and universal to the post-rationalist approach (McFarlane 2006). The latter conceives knowledge and learning as partial, social, produced through practices, and both spatially and materially relational. Findings show that the municipality emphasises formal and informal social learning as an important medium for knowledge creation and sharing. However, KM in eThekwini Metropolitan Municipality is somewhat disjointed and not yet holistically embedded. Nevertheless, findings reveal statistically significant relationships between knowledge creation and sharing as dependent variables and organisational structure and characteristics as independent variables. Together, interaction of these and other variables demonstrate KM practices implemented in the municipality. Findings may be transferable to other similarly situated municipalities but not necessarily generalizable. Through triangulation of data, findings further shed light on KM and organisational structure opportunities of which municipalities can take advantage. Study results and recommendations contribute to the body of knowledge on public sector KM as both a managerial practice and an emerging academic discipline.

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Chapter 1
Introduction to the Study

1.1 Introduction

In this information age, knowledge is viewed as possibly the most essential asset requiring careful management within organisations. However, Knowledge Management (KM) is a relatively new managerial practice, especially in South Africa. Academically, as a research topic and emerging discipline, KM has not, as yet, abundantly entered the public sector literature. This is concerning, as the public sector's main activity is primarily the development and provision of knowledge. In this chapter an introduction to this study on KM in the context of local government is provided. The problem statement is followed by key terms and definitions used in the study. The ontological and epistemological outlook of the study is presented. In view of the research problem, certain research objectives, research questions and hypotheses are identified. An indication of the significance of this study is followed by ethical considerations and limitations of the study. An outline of dissertation chapters is highlighted before this chapter is summarised.

1.2 Problem statement

The role of local government in terms of service delivery has been a topic of much deliberation. Notwithstanding efforts made, the numerous challenges have yet to be resolved and the quality of services delivered requires betterment (iLGM, 2009:1). In South Africa, post 1994, local government's focus toward development became a pivotal constitutional feature (Mgwebi, 2013:1). However, an understanding of what a developmental local authority actually does and how KM transpires in relation to governing local communities remains yet elusive (iLGM, 2009:1).

Among the critical obstacles contributing to the stasis of the local government is incapacity or under-capacity: a skills deficit, inadequate financial structures and underfunded directives (iLGM, 2009:5). The National Department of Cooperative Government and Traditional Affairs (COGTA) states that the improvement of service delivery has been inconsistent country-wide with different areas facing distinctive challenges (2009:39). This reflects the varying socio-economic conditions and municipal competencies. A survey conducted by eThekwini municipality has identified problems experienced by citizens and the overall citizen dissatisfaction with services rendered. These include long waiting times and slow processing of forms at Municipal Offices; lack of opportunities for public consultation on Municipal Affairs; and poor quality, untimely information supplied to the public (eThekwini Municipality, 2015:27). Hence, local government seems to lack the capacity and means to satisfy the social, economic and constitutional demands. There tends to be lack of cohesiveness and protracted fragmentation in even the most basic efforts of local government (iLGM, 2009:6). The above mentioned citizen dissatisfaction issues amongst others could be improved with the implementation of KM systems. Ideally, knowledge sharing and creation

should focus on local government but, crucially, also span across different government departments and sectors. This would enable insight into the few pockets of excellence that do exist in the current public sector (iLGM, 2009:6).

Mphahlele (2010:21) states that KM can trim operational costs while boosting customer service in the public sector. It is a vital component in improving the performance and quality of service delivery and assisting in the creation and fulfilment of public policies. Furthermore, KM is necessary to comply with the public service challenge of consistent performance. It has the ability to achieve an ongoing inter-departmental kinship and connection, so that ideas and solutions are shared which minimises the repetition of mistakes. Moreover, KM enhances knowledge sharing relating to customer and partner needs, thus improving service delivery and maximising the potential of the individuals and the organisation. There is evidence that KM has been introduced and implemented in the South African public sector but there is little viable proof of progress or benefits achieved (Mphahlele, 2010:11). The dearth of empirical evidence on public sector KM is problematic and exacerbates the broader service delivery problem. This study attempts to address the empiricism void by interrogating the extent to which eThekwini Metropolitan Municipality has implemented KM practices, with specific reference to knowledge creation and sharing.

Of utmost importance is the consideration that each of the 278 municipalities in South Africa has varying capacities within different social and economic environments. Depending on the different challenges, improved KM can centre and enhance the obligations to build a capacity that delivers (Mgwebi, 2013:2). Indeed without evidence-based guidance on how to shape KM in the public sector generally and municipalities in particular service delivery problems will likely persist. Such persistence would impede democratic governance and frustrate policy implementation, such as the National Development Plan: Vision 2030. To begin to address these problems, this study will narrowly focus on knowledge creation and sharing within the eThekwini Metropolitan Municipality. Particular attention will be given to the Municipal Institute of Learning (MILE), the Skills Development Unit (SDU), the Organisational Development and Change Management Unit, the Information Services (IS) Department, Libraries and Heritage Department, and the Performance Management Unit. The study will examine factors of personal motivation and organisational structure, and explore how these factors impact on knowledge transfer and influence knowledge transfer strategies. While several studies, as discussed in chapter 2, have begun to reveal insight into relevant factors influencing knowledge transfer, how organisations can transfer knowledge in a way that optimises knowledge sharing and creation remains unsolved. The intention of this study is that the findings will contribute to this existing body of knowledge within a developmental local government context.

There are certain key terms and definitions used in this study which are next delineated.

1.3 Key Terms and Definitions

As with any dissertation research, certain key terms and definitions will be utilised throughout the study. Table 1-1 shows the key terms and definitions for this study. Some definitions were drawn from the literature review while others were co-constructed by the researcher and respondents during the execution of this study.

Table 1-1: Key Terms and Definitions of the Study

Key Terms	Definitions
Codification Strategy	The strategy used to codify and store knowledge, facilitating effortless use and access to everyone within the organisation (Nakano, Muniz and Harzing, 2013:292)
Knowledge Creation	An innovative process of developing new knowledge and adding value to existing knowledge. This variable is operationalised as codification strategy or personalisation strategy as the case may be.
Knowledge Management	The set of business policies and actions undertaken for the purpose of favouring the creation of knowledge, its transfer to all organisational members and its subsequent application, all of it with a view to achieving distinctive competencies which can give the organisation a long term competitive advantage (Pinho, Rego and Cunha, 2011:216)
Knowledge Sharing	The process of giving and receiving knowledge for personal and organisational growth "to help others and to collaborate with others to solve problems, develop new ideas, or implement policies or procedure" (Amayah, 2013:1). This variable is operationalised as codification strategy or personalisation strategy as the case may be.
Knowledge Transfer	The movement of knowledge from one person or location to another inclusive of explicit and tacit knowledge and without the obligation of new or different knowledge moving in the opposite direction.
Organisational Characteristics	The set of functions; processes and policies that make up the organisational culture of the organisation.
Organisational Structure	The physical composition of the organisation in terms of sections/ departments and policies that govern organisational functions and interactions.
Personal Motivation	Internal factors that prompt an individual to conduct themselves in a certain manner and perform certain functions outside of their prescribed functions/ job descriptions; in light of community,

	normative and personal considerations and benefits (Amayah, 2013:457).
Personalisation Strategy	The strategy used to share knowledge when the knowledge is tied closely to the one who developed it and there is frequent person to person contact in strategy implementation (Nakano et al, 2013:292).
Post-rationalist paradigm	Situational learning where knowledge construction is augmented by its specific context and impacted by its particular social and physical environment and emerges from socially constructed practices (Ferguson, Huysman & Soekijad, 2010:1801).
Social Learning	The process of learning through dialogues and social interaction in a formal or informal setting (Noorderhaven and Harzing, 2009:723).

The next section introduces the ontological and epistemological outlook underlying this study.

1.4 Ontological and epistemological focus of the study

All social scientists' positioning on their subjects is shaped by their ontological and epistemological outlooks. Frequently their positions are implied rather than stated, but regardless of whether they are acknowledged, they shape the approach to theory and the methods which the social scientist utilises. This study will adopt the post-rationalist approach as an ontological outlook and epistemological framework. The post-rationalist approach proposes that knowledge is contained in systems of continuous practices; it is relational and mediated by artifacts; it is always rooted in a context of interaction and acquired through some form of participation in a community of practice; and it is perpetually refined and evolving, hence organic and transient, and emphasises the socio-material construction of knowledge, the spatial relationality of knowledge and the importance of practices (McFarlane, 2006:293). The post-rationalist approach prescribes to situational learning where knowledge construction is augmented by its specific context and impacted by its particular social and physical environment and emerges from socially constructed practices (Ferguson, Huysman & Soekijad, 2010:1801).

This highlights how the post-rationalist approach is a means of moving away from the simplistic view of KM which views some knowledge as superior to other knowledge and where knowledge transfer and sharing is concerned only with technology and ignores social constructs. The post-rationalist approach does not perceive KM as merely a tool to improve developmental initiatives but rather as a means for shared growth and development by involving those most affected in the proposal or generation of solutions to their problems. This approach is especially important now as there is a movement away from viewing development only in terms of economic and infrastructural factors but also looking at social/humanistic elements such as alleviation of poverty (McFarlane, 2006:293).

1.5 Objectives of the study

Based on the research problem which revolves around local government service delivery challenges and is concerned specifically with circumstances surrounding KM as a tool to improve service delivery, certain aims of this study were constructed. The objectives of this research study are to:

- Determine whether organisational composition and governance in certain units of the eThekwini Metropolitan Municipality support KM.

- Identify public organisational characteristics that stimulate knowledge creation and sharing in certain units of eThekwini municipality.

- Discover knowledge creation and sharing techniques that can be used for a wider application in the South African local government sphere.

The particular eThekwini municipal units under study are the Municipal Institute of Learning (MILE), the Skills Development Unit (SDU), the Organisational Development and Change Management Unit, the Information Services (IS) Department, Libraries and Heritage Department, and the Performance Management Unit.

1.6 Research questions

Given the research problem, study aims and the point of departure for this study, research questions were drawn accordingly. The central research question is:

To what extent is eThekwini Metropolitan Municipality implementing KM practices, with specific reference to knowledge creation and sharing?

- How does the eThekwini Metropolitan Municipality support KM?

- How is knowledge shared within and between the different units and clusters?

- What techniques of knowledge creation and sharing can be used for wider application in the South African local government sphere?

1.7 Hypotheses

Null Hypothesis: There is no correlation between public organisation characteristics and knowledge creation and sharing.

Alternate Hypothesis: There is a correlation between public organisation characteristics and knowledge creation and sharing.

The dependent variables are knowledge sharing and knowledge creation. Each variable is operationalised as codification or personalisation KM strategies as defined in Table 1-1 and explained in section 2.12 which discusses the theoretical framework adopted for this study. The independent variables are organisational structure and organisational characteristics which are likewise defined in Table 1-1.

1.8 Research Methodology

Any research study being conducted needs the appropriate research design and methodology for it to be fruitful and achieve its set objectives. The appropriateness of research design and methods is determined by the research problem as well as the research objectives, the research questions and hypotheses, if any. For this study the mixed methods research design was adopted and a single case study research strategy employed. Both probability and non-probability sampling strategies were applied. Primary data were collected through semi-structured interviews, survey questionnaires and observation, Documentary evidence was obtained as secondary data. Qualitative data were analysed by a combination of content, thematic and matrix analysis. Survey data were analysed through statistical software, namely Statistical Package for Social Sciences. Certain elements of research rigour were applied. Justification for and outcomes of these methodological decisions are further explained in chapter 3.

1.9 Significance of the study

The current era characterised by globalisation and cross-border activities and transactions across public, private and civil society sectors is referred to as a knowledge economy. Knowledge management becomes crucial in a knowledge economy. Post-1994, South Africa is a democratic country within which all citizens have been endowed with certain constitutional rights, included socio-economic rights to service delivery. Local government is considered the sphere of government closest to the people. In order for constitutional and other law and policy mandates to be adhered to, there is a need for local government to engage in KM in a way that improves service delivery. The significance of the undertaking of this study is that findings will shed light on how to implement KM strategies. Hence, findings from this study will contribute to the body of knowledge on KM with specific reference to the role of local government. By discovering relationships between local government organisational characteristics and knowledge sharing and management, empirical evidence would be made available to the municipality under study as well as other municipalities similarly situation. Moreover, findings from this study provide practical recommendations which are contextualised to the South African public sector. Results of this study will also inform decision-making of policymaker with regards to KM. An absence of such a study would leave public sector decision makers yet unaware of how to implement KM practices in a way that advances democratic governance for all. It is presumed that understanding practices of KM implementation will lay a foundation for service delivery improvement.

1.10 Ethical considerations

There are ethical standards which govern all people, processes and actions. In conducting social science research one also has to abide by research ethics. Ethical considerations in social science research generally relate to demonstrating respect for persons by treating individuals as autonomous agents and protecting those with diminished autonomy. The researcher must consider the maximization of benefits and reduction of risk that might occur from the research. For this study ethical considerations as established by University of KwaZulu-Natal protocols were followed. This means that study participants were advised that participation in this study is voluntary, that they could withdraw from participation at any time and that there is no monetary gain for study participation. Respondents were informed of ethical protocols and acknowledged these protocols through agreement, before any data were collected. The manner in which ethical considerations were followed is further explained in chapter 3, section 3.8

1.11 Limitations of the study

The study will involve the collection of primary qualitative data. Qualitative data does not produce generalisable findings, which could be seen as a limitation. However, findings may be used to generate theoretical propositions and may be useful to other municipalities similarly situated which would help overcome any perceived limitations. While results from quantitative data are known to be generalisable, the return of 229 surveys may or may not be seen as sufficient for generalisability to KM in other similar municipalities. There are a variety of types of municipalities in South Africa and this study was focused on one metropolitan municipality. Another limitation could be that some municipal employees may not wish to participate in the study and may be under the mistaken belief that the research is investigating a particular unit. Limited funding and time constraints may also constrain the study.

1.12 Outline of chapters

Table 1-2 provides an outline of the dissertation chapters.

Table 1-2 Outline of Dissertation Chapters

Chapter One Introduction to the Study	Chapter 1 is an outline of the entire study and provides the reader with the rationale for undertaking this study. It introduces the reader to the topic and points to the main purpose of the study.
Chapter Two Toward a Public Sector Knowledge Management Foundation	Chapter 2 presents a review of KM literature, including knowledge transfer, knowledge sharing, and knowledge creation in the context of developmental local government.
Chapter Three Research Methodology	This chapter details the mixed methods research design executed in the study including research strategy, sampling, data collection and analysis. Rigour in mixed methods research is

	discussed along with ethical considerations and delimitations of the study.
Chapter Four Data Presentation, Analysis and Findings	Chapter 4 presents primary and secondary data. Findings are analysed through various techniques. The discussion of the findings are integrated with existing literature.
Chapter Five Conclusions, Recommendations and Visions of Future Research	Finally, chapter 5 provides an overarching interpretation of the results of the study whilst offering conclusions and recommendations as well as proposing visions of future research.

1.13 Chapter summary

KM has been applied by the public sectors of developed countries for some time now and the rewards are said to be significant. For a new democracy and a developing country like South Africa, the dividends of KM in the public sector cannot be over accentuated. It is generally believed that KM can improve all aspects of service delivery which is a prerogative for the South African public sector. This chapter has briefly introduced the concept of KM, highlighting the reasons underlying the decision to undertake this study, as well as the significance of such a study. The philosophical worldview of post-rationalism underlying this study was identified. Research questions, research objectives and hypotheses were presented. This chapter also highlighted the research methodology utilised followed by ethical considerations and limitations of the study. An outline of dissertation chapters was provided before the chapter was concluded by this study. The next chapter is comprised of a review of relevant literature.

Chapter 2
Toward a Public Sector Knowledge Management Foundation

2.1 Introduction

In developing countries, public sector organisations are increasingly turning to Knowledge Management (KM) practices to increase the potential holistic growth of the society. Many have frequently claimed that greater pressures are faced by organisations in the public sector in terms of efficacy and accountability as opposed to private sector organisations. The scope of pertinent demands faced by organisations in the public sector might likewise be more taxing on the public than the private sector, given mandates of law and policy as well as resource constraints. Thus, the improvement of KM practices in public sector organisations is a compelling requirement for the growth of developing economies. Public sector organisations are mainly knowledge-intensive organisations. To exploit their knowledge effectively, knowledge sharing among the different units and departments is required. Research on knowledge sharing has focused on three factors: enablers, processes, and organisational performance. This chapter will discuss KM in the South African local government, which is the crux of this study. Thereafter, the focus will shift to knowledge creation and sharing; looking not only into enablers, but also factors affecting knowledge transfer both positively and negatively. It will also look at strategies that allow for successful knowledge creation and sharing as components of KM. A review of factors affecting knowledge transfer is followed by discussion of how these factors relate to enablers of knowledge sharing and creation. This chapter ends with a convergence of literature on KM, which gives rise to the theoretical framework that will guide this study.

2.2 Definitions

In this study the concept of knowledge is defined as "a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information" (Noorderhaven & Harzing, 2009:721). Bosua and Venkitachalam (2013:3) see KM as an onerous course of delineating individual and collective organisational knowledge, and then utilising it as an advantage for organisations to compete more effectively over time. Gaffoor and Cloete (2010:2) provide a different perspective: they define KM as "the formalisation of and access to experience, knowledge, and expertise that create new capabilities, enable superior performance, encourage innovation, and enhance customer value". Both these definitions are well synthesised by Pinho, Rego and Cunha (2011:217) who argue that KM encompasses, via managerial facilitation, the acquisition, formation, storage, distribution and development of knowledge by individuals and groups. They maintain that an attentive strategy is required. One that projects the right knowledge to the relevant people at the accordant time, and assists people to share and apply information in ways that improve organisational performance.

KM is the means by which an organisation utilises its cumulative brainpower to fulfil its strategic objectives. It does not merely refer to technology; it is about achieving a keen understanding of how people work. Moreover, it includes sharing concepts and ideas, identifying groups of people with similar work tasks and investigating how they can learn from one another (Arora, 2011:166). For the basis of this research study and consistent with the concept of KM as defined above, KM will be viewed "as the set of business policies and actions undertaken for the purpose of favouring the creation of knowledge, its transfer to all firm members and its subsequent application, all of it with a view to achieving distinctive competencies which can give the organisation a long term competitive advantage" (Pinho et al, 2011:216).

2.3 The knowledge economy

The term knowledge economy covers a wide set of endeavours and interpretations. Powell and Snellman (2004:200) assert that at least three strands of research fall under this term. The first approach originated in the 1960s, its focal point being the rise of new science-based industries and their role in social and economic change. The second approach focuses on whether particular industries are especially knowledge-intensive. The 1990s witnessed unusual financial market and macro-economic developments. As a result knowledge-intensive industries grew, accompanied by an increase in productivity. Hence, the literature began to proclaim a difference in the operation of the knowledge economy from the past in some fundamental way (Powell & Snellman, 2004:200).

The third strand of work is more contracted and supervisory in its direction. It focuses on the impact that learning and continuous innovation have within organisations. Some organisations seem to be especially adept at knowledge creation and sharing, prompting researcher interest in dissecting why and whether these practices can be replicated (Powell & Snellman, 2004:200). The extensive economic and sociological effects of questioning whether knowledge is tacit or codified and determining what kinds of social arrangements enhance or impede knowledge creation and sharing have recently begun to attract attention. However, cohesive empirical research on this topic is minimal (Powell & Snellman, 2004:200).

The feebleness or even complete absence of a definition of a knowledge economy is prevalent in literature. This is one of various ambiguities that contribute to the notion of the knowledge economy as being abstract rather than analytically useful (Brinkley, 2006:3). In support of this view, Smith and Norway (2000:2) attest that there is no consistent definition, let alone a theoretical concept of a knowledge economy. It is at best, a generic term, rather than a definite idea; thus, forethought should be used in using the term. Brinkley (2006:5) goes as far as arguing whether a knowledge economy really exists at all as the economy has always been knowledge-driven; the result being innovation and technical advancements. Knowledge based

institutions have aided the retention and spread of knowledge for centuries. Currently, what is visible is essentially more of the same but operating on a bigger scale and at a faster pace.

The capability of storing, sharing and analysing knowledge through networks and communities using information and communication technologies allows organisations to use the unique properties of knowledge to their full advantage. It provides organisations with a competitive edge. Perhaps the most important aspect is that knowledge is the ultimate economic renewable resource. Knowledge cannot be depleted by use; rather, its value to an economy occurs by sharing it with others (Brinkley, 2006:5). Powell and Snellman (2004:201) maintain that the vital elements of a knowledge economy involve an emphasis on cerebral proficiencies rather than natural resources or physical resources. This is combined with efforts to assimilate improvements at every stage of the production progression. In line with this view and for the basis of this study the knowledge economy is defined as "an economy where economic success is increasingly based on the effective utilization of intangible assets such as knowledge, skills and innovative potential as the key resource for competitive advantage" (Brinkley, 2006:4). This perspective is in accordance with the third strand of work on the knowledge economy discussed above, as this study looks to add to this scarce body of knowledge.

2.4 Knowledge-based view

The knowledge-based view contends that knowledge can be considered as the most strategically significant resource of the organisation. This is because it is central to many organisational activities and processes, such as technological administration, the discernment of organisational management, and innovation within the organisation (Lopez & Esteves, 2011:88). The knowledge-based view portrays organisations as repositories of knowledge and competencies. The view posits the notion that knowledge is a valuable means of attaining competitive advantage (Anand, Ward & Tatikona, 2009:304). According to this approach, the competitive advantage of organisations arises when their ability to create and transfer knowledge is of a premium standard. It reaches further than the conventional concerns of strategic management and addresses other key issues such as organisational theory. For example, the role of management and the allocation of decision making rights, the nature of coordination within the organisation, the theory of innovation, amongst others (Lopez & Esteves, 2011:89). From a knowledge-based viewpoint therefore, knowledge sharing is considered critical to the organisation's effectiveness (Amayah, 2013:454). The knowledge-based view has primarily expounded the virtues of hierarchy in promoting the sharing and preservation of knowledge, but it tends to negate the role of markets and development of knowledge. It is not only crucial how managers capitalize on knowledge or competencies that have already been developed, but how they also implement methods to generate knowledge efficiently and build capacity (Lopez & Esteves, 2011:90).

Transferability of knowledge is essential, not only between organisations, but even more critically, within the organisation. This highlights the important difference between explicit and tacit knowledge for knowledge transfer across individuals, space and time. At organisational and individual levels, knowledge absorption depends on the receiver's ability to build new knowledge around existing knowledge. Therefore, the skill in transferring and assembling knowledge is fundamental in assigning the most favourable location of decision-making authority within the organisation (Lopez & Esteves, 2011:90). A lack of absorptive capacity is a significant obstacle to internal knowledge transfer within organisations. The role of KM in a developmental context is discussed in the next section, while knowledge creation and sharing or transfer is also discussed below.

2.5 Knowledge Management in a developmental context

Development institutions such as the World Bank are progressively emphasising the significance of knowledge and learning in the development of poor countries. This can be seen, for example, in the World Banks' World Development Report of 1998/99 entitled *Knowledge for Development*. The report contends that knowledge is paramount to diminish poverty and to aid economic growth (McFarlane, 2006:287). Ferguson et al (2010:1797) state that the universal environment of many development hurdles, joined with the necessity to mould local responses, warrants the integration of knowledge by development stakeholders in their strategies. Development is dependent on context-relevant knowledge being at hand and skilfully applied in the decision-making processes. If policymakers and practitioners are to better handle development challenges, it is imperative that awareness is fostered of the considerable role that knowledge plays in their work. Practitioners need to be acutely aware of what knowledge means for their management practices, and how it can better their efforts (Ferguson et al, 2010:1797). According to McFarlane (2006:288) there is a dire need that within development initiatives, the knowledge and capacities of the urban poor should be the focus.

Ferguson et al (2010:1798) suggest that better clarity in terms of the meaning and an organisational implication of development is required. This need is now more crucial as development impact has shifted from being measured economically (an indication of welfare), to being based on humanitarian grounds: related to people's ability to access, generate, and utilised relevant knowledge in an information society during a global era (Ferguson et al, 2010:1797). This view emphasises social and human capital as imperative factors for determining a citizenry's aptitude to react to the difficulties in their surroundings and to be more actively involved in the processes of decision-making that influences their livelihoods (Ferguson et al, 2010:1798).

It has become accepted that development requires knowledge networking among beneficiaries, decision-makers and agencies, which on a broader scale is in line with Millennium Development Goal (MDG) 8. This is one of eight goals generated by the United Nations (UN) and focused upon by most countries. MDG 8 calls for the undertaking of a global partnership for development (Ferguson et al, 2010:1798). According to the UN (2015:62), after increasing significantly in the first decade of the new millennium, official development assistance has since plateaued in recent years.

The value of international networks, where national and local leaders rely primarily on representational knowledge of foreign experts, has often been questioned. This is because international knowledge networks may result in the local knowledge of intended beneficiaries being overlooked (Ferguson et al, 2010:1799). McFarlane (2006:289) indicates that development policy makers often view knowledge creation as evolving without the influence of the political environment. Frequently knowledge is considered as a static commodity which can delivered 'as is' providing development solutions. This propagates a North-South divide where knowledge from the rich countries is drawn by the poor countries for the latter to develop. This North-South divide is a political and socio-economic phenomenon whereby economically developed countries are collectively referred to as the global North. Less economically developed countries or countries with economies in transition are referred to as the global South. Another reason for this study is to generate findings about KM based upon the experience and strategies in the global South by studying a South African municipality.

Knowledge transfer approaches involve a prescriptive approach to learning. The focus is on transfer of knowledge that is deemed best practise among Northern development professionals. This is often in opposition to knowledge inherent in outside sources. Since such knowledge transfer approaches actually refer to teaching instead of learning, this type of approach risks reinforcing knowledge asymmetries (Ferguson et al, 2010:1800). In development practice, the transfer of knowledge frequently takes place from the global North to the global South. This sometimes results in Western development solutions being imposed on developing populations whose context and reality radically differ from the westernised global North countries (Ferguson et al, 2010:1800). Knowledge is considered equipped for enlightening the darkness of poverty. However, with enlightenment ideals and modernist thought from outside the development context guiding the progress of distant others, the unquestioned assumption and consumption of knowledge along a North-South divide not only risks marginalising alternative voices, but also risks stereotyping the poor as ignorant or shameful and reliant on the North for knowledge and enlightenment (McFarlane, 2006:291). In contrast, findings from this study demonstrate how and to what extent South African officials in eThekwini are managing, creating and sharing knowledge in their own way (Ruffin,

2013:68). Understanding types of knowledge and KM processes may help illuminate the developmental context on its own merit.

2.6 Types of knowledge and Knowledge Management processes

The two elementary knowledge types are explicit and tacit knowledge. Knowledge which can or has been kept in certain media, verbalised, categorised and can be transmitted to other readily is explicit knowledge (Shan, Zhao & Hua, 2012:215). Tacit knowledge, on the other hand, is knowledge that is tough to transfer to other people through verbalisation and writing. It often comprises of cultures and habits that one may not easily recognise (Shan et al, 2012:215).

Tacit knowledge in the workplace is usually acquired individually or as a group through the process of learning by doing and is more dependent on its holder. It is attached to the person's mind, rooted in his/her personal experiences, thus making it difficult to divulge to others (Panahi, Watson & Partridge, 2013:2). Tacit knowledge is knowledge that has not been arranged and is somewhat difficult to organise; it is subjective and established through individual experiences (Anand et al, 2009:304). There are two elements to tacit knowledge, which are that it is both cognitive and technical. The technical aspect is related to know-how, crafts and informal skills. The cognitive aspect includes ideas, values, beliefs, paradigms, intuition and mental models (Panahi et al, 2013:2). Tacit knowledge may be shared using socialisation practices and may be converted to explicit knowledge through externalisation practices (Anand et al, 2009:306).

The socialisation process involves the transfer of new knowledge via shared experiences as it surpasses the boundaries of the prevailing meanings and rules. An organisation gains new knowledge by interactions: observing, discussing, analysing, sharing experiences, or living in the same environment (Shan et al, 2012:215). Socialisation practices pool peoples' tacit knowledge and construct shared understanding amongst members of a group on practices that are being examined.

However, this group-level tacit knowledge, which is the outcome of the socialisation practices, is not always concrete enough to be communicated in clear written or illustrative forms. In contrast, externalisation practices allow for the explicit expression of tacit concepts in the form of verbal and visual representations (Anand et al, 2009:306). Externalisation practices convert tacit knowledge, which is held by the group and individuals, into explicit forms, such as objective pictures or numbers, diagrams and written descriptions that enable group analysis and dialogue (Anand et al, 2009:306). Externalisation practices help to create new knowledge, as tacit knowledge moves past boundaries and becomes collective group knowledge (Shan et al, 2012:215).

Explicit knowledge is organised knowledge expressed in figures, numbers and words. It is considered impartial and reasonably easy to share through standard operating procedure, data and specifications (Anand et al, 2009:304). Anand et al (2009:306) further maintain that sharing explicit knowledge through combination practices or changing it to tacit knowledge through internalisation practices are possible ways to capture explicit knowledge.

Combination practices are those that combine features of explicit knowledge from different sources, reconfiguring and organising them to produce new explicit knowledge for the group. In contrast, internalisation practices convert explicit knowledge into tacit knowledge so that it is generally understood by the team and used to improve how work is undertaken in the organisation (Anand et al, 2009:306). An example of the combination process is when the finance department combines financial reports from each department into one consolidated annual financial report. Internalisation would be, for instance, when in the midst of a training programme, employees are required to read training manuals and documents thereby internalising tacit knowledge and trying to create new knowledge (Shan et al, 2012:215).

Nakano, et al (2013:292) persuasively state that although it is analytically useful to study knowledge as either being tacit or explicit, the real features of knowledge vary along a spectrum. Knowledge concerning tasks is not only stowed in documents, folders and files; it also exists in an individual's relationships and actions and is mixed in with everyday activities. An example of this is standard operational procedures, which incorporate explicit knowledge resulting from prior experiences. Simultaneously, these procedures are useless until actually enacted by workers. As these workers follow procedures and perform their tasks, they acquire tacit knowledge, which is internal and context related, therefore difficult to share (Nakano et al, 2013:293).

Bosua and Venkitachalam (2013:3) discuss four KM processes, namely: knowledge creation, transfer, storage/retrieval, and application/reuse. They assert that the creation and transfer of knowledge may be regarded as symbiotic and interlinked as the transfer of knowledge frequently leads to the creation of new knowledge and its creation depends on the transfer of knowledge. They go on to say that both knowledge creation and transfer can take place by means of communication and dialogue related to team-based or individual collaboration and interaction. In the same manner knowledge storage/retrieval and reuse/application can be seen as interlinked. This is because the reuse and application of knowledge is frequently dependant on the availability of knowledge in one or more explicit forms. In other words, codified knowledge can be stored for subsequent use or application (Bosua & Venkitachalam, 2013:3).

Ferguson et al (2010:1799) express that many active KM methods appear to focus on easily accessible technologies and devices to retrieve and transfer knowledge. This approach has been coined the rationalist

approach. The rationalist approach to KM considers knowledge to be universal and objective, as a technical object which may be transferred in a direct manner unchanged from context to context. In so doing, the notion of knowledge is separated from context and politics, which frequently prompts unproductive results. This generally leads to the rejection of KM as it is deemed ineffective (Ferguson et al, 2010:1799). An alternative to this rationalist approach is post-rationalism. Post-rationalism emphasises the situated character of knowledge and the locale-specific orientation of knowledge. It emphasises knowing as enactment of a practice in which actors engage, embedded in wider social relations beyond the cognitive contents of individuals' minds (Ferguson et al, 2010:1799).

2.7 Alignment of Knowledge Management strategies with work procedures/processes

Literature on KM shows that KM strategies often fail to provide knowledge process outcomes, such as the betterment of one or more practices of codification, transfer and creation. This is ascribed to the misalignment between workgroup KM practices and KM strategy in organisations (Bosua & Venkitachalam, 2013:2). The focus and relevance of KM strategies in organisations is to improve all of the KM processes. As a result, KM strategies are intended to set out enablers and interventions to align with KM practices which are external and internal to the organisation (Bosua & Venkitachalam, 2013:3). Gaffoor and Cloete (2010:6) argue that the KM strategy must be aligned tactically with the overall organisational strategy and utilised as a planning tool directed toward achievement of KM goals. It should also have a framework that both meets organisational needs and provides appropriate solutions. The Hansen et al model as discussed by Bosua and Venkitachalam (2013:4) proposes a personalisation and codification approach to a KM strategy. These scholars contend that the personalisation strategy through networking and collaboration aims to bind people to foster the transfer and creation of tacit knowledge. Consequently, investing moderately in IT infrastructure is recommended to enable dialogues and tacit knowledge exchanges. The codification strategy relates to the storage and codification of knowledge for its easy access, reuse and application. A significant investment in IT infrastructure is recommended to implement the codification strategy. This includes knowledge bases, content systems and repositories which permit teams or individuals to reuse and access codified knowledge. When designing strategies, organisations should identify where tacit and explicit knowledge resides to make sure knowledge is created and transferred to the right people (Syed-Ikhsan & Rowland, 2004:96).

Bosua and Venkitachalam (2013:18) argue that for the alignment of workgroup KM practices and KM strategy to be achieved, managers must firstly define the KM strategy focus. Based on the nature of the organisation and its hierarchal structure, managers must institute suitable alignment enablers. This is to align the chosen KM strategy focus with its workgroup KM processes, utilising either social networks or

alignment enablers. Secondly, in institutions without a definite KM strategy focus seeking to improve KM practices, managers should find and align sections or departments that demonstrate effective KM practices. They should then aim to reproduce such practices across all sections or departments. Finally, the inherent authenticity of any KM practice, whether it is knowledge creation, capturing, transfer or reuse, can guide management to externalise and cultivate a KM strategy for the long-term future of the institution. Such KM practices are essential in shaping the framework of sectional KM practices, which could also lead to strategic actions across the organisation.

2.8 Knowledge Management in the public sector

There are several benefits related with KM in the public sector, such as creating the chance for workers to improve their knowledge, skills and performance via team work. The benefits of KM also include knowledge sharing and better quality innovation, enhanced efficiency and performance productivity. Furthermore, KM allows for more collaboration and better decision making. It reduces the duplication of work, and could therefore decrease operating costs and increase service delivery. KM strategically enables a competitive advantage and creates value across levels in an organisation (Gaffoor & Cloete, 2010:4). As a result, it appears that, to improve public sector performance, KM awareness is needed among lower level personnel and managers and not just within the upper echelon.

Syed-Ikhsan and Rowland (2004:97) state that KM in public administration can enhance decision-making within the public service, aid the public in participating effectively in decision-making, build competitive societal intellectual capital capabilities and develop a KM work force. Employment of KM allows standardisation and automation of customer service and support processes. It introduces a customer-centric universal front office delivery model in public sector institutions as well as improved and more consistent public service quality; more accessible services aligned with customer preferences. It creates a more streamlined and efficient customer service process and relieves skilled personnel from routine customer service work, thus enabling them to focus on more value-added activities (Arora, 2011:169). From this it is clear that KM brings a broad range of benefits to the public sector, individuals and society as a whole.

In the last decade KM has received increased priority within the context of the South African public sector. In 2007 KM was identified by the Department of Provincial and Local Government as a managerial skill central to local government senior managers. To develop the local sphere of government the aptitude for managers to advance knowledge sharing and creation is required (Gaffoor & Cloete, 2010:4). However emphasis has been given only to the KM proficiencies of managers without enough importance given to an organisation-wide application of KM systems (Gaffoor & Cloete, 2010:4). Hence this study is undertaken to shed light on the importance of a holistic view of KM in relation to public sector institutions.

Municipalities in South Africa operate in an environment categorized by great competition and uncertainty. These municipalities are under enormous pressure to modernise and transform their functions so as to expedite growth in the knowledge economy. For South African local government to remain globally competitive it should become aware of the importance of KM in accomplishing organisational goals and achieving service delivery success (Gaffoor & Cloete, 2010:5). It is vital to comprehensively employ KM in support of and within public administration to enable its individuals and organisations to work smarter thus allowing society to prosper (Syed-Ikhsan & Rowland, 2004:97).

The South African public sector has features unique to it that have implications for KM. One such feature is the issue of language. Kruger and Johnson (2010:58) argue that having to deal with 11 official languages, communication, which is a key factor of sharing knowledge, is frequently and sternly hindered. They argue that if people find it challenging to convey their message or understand concepts they are reluctant to share their knowledge. The problem of languages in South Africa is exacerbated by the presence of nine ethnicities - each one with its own community, vernacular and manner of speaking. An additional challenge is the need for a unified management style where European, African and Asian cultures are fused. Three management styles namely, Eurocentric, Afrocentric, and Synergistic Inspirational, either directly or indirectly influence the successful institutionalisation and growth of KM (Kruger & Johnson, 2010:58).

The Eurocentric approach remains prevalent in South Africa, is still considered by many as a continuation of oppression and leads to a socialisation of the general public along ethnic and race lines (Kruger & Johnson, 2010:59). The Afrocentric approach is an 'Ubuntu' based system that encourages the use of indigenous approaches in dealing with challenges whether external or internal to the institution. Ubuntu roughly translated means humanity towards others. It is thought to be inclusive oriented as opposed to the Eurocentric exclusivist style. The Synergistic Inspirational method combines both the above-mentioned management approaches. It encompasses the combination of the long-standing respected African management principles, philosophies and practices and Western approaches of management (Kruger & Johnson, 2010:59).

KM practices require high levels of employee motivation and a conducive organisational structure to gain the benefits of knowledge for organisational effectiveness. There are other factors involved as these two factors mentioned above do not work in an isolated environment, but the ones mentioned are seen as the most potent in this study. Successful KM processes need to translate internalised tacit knowledge into explicit knowledge in order to share it. Individuals and groups in the organisation ought to internalise and make codified knowledge meaningful to them after it has been retrieved from the KM system. Therefore,

KM consists of all the explicit and tacit knowledge that groups and individuals have about systems, processes and products.

2.9 Local government Knowledge Management in South Africa

As a result of the assertions that government has made regarding the knowledge economy, there are high expectations that KM will soon be entrenched within local government sectors (eThekwini Municipality, 2014:9). The National Development Plan (NDP) envisages that South Africa will have shifted to a more knowledge intensive economy by the year 2030 (South Africa, 2011:48). The eThekwini Municipality (2014:10) puts forward that in the local government sector there is a necessity to prioritise KM to the extent that it should be a required skill and competency so that employees may be able to progress knowledge creation and sharing with the objective of enhancing the knowledge economy.

As a result of great uncertainty facing municipalities across South Africa and the need to collaborate, South African municipalities have to accept the importance of KM for improved and efficient service delivery and as a means to keep abreast of changes and be competitive with the rest of the world (eThekwini Municipality, 2014:10). The sharing of knowledge is already taking place in municipalities but in a fragmented and scattered fashion as opposed to recognised KM practices (Kitchin, Ovens & Turpin, 2013:4). The adoption of KM by municipalities will allow for the systematic capture and organisation of the abundance of knowledge and expertise of partners, beneficiaries, staff, stakeholders and clients, thereby allowing knowledge and expertise which are already within the municipality to be effortlessly accessible (Kitchin et al, 2013:4). By means of identifying, creating, organising, storing, sharing and using knowledge, KM builds institutional memory ensuring that valuable knowledge is not lost when experienced staff leave.

In South Africa, KM efforts in local government are currently driven by the metropolitan municipalities: Cape Town, eThekwini, Johannesburg, Buffalo City, Mangaung, Tshwane, Nelson Mandela Bay, Msunduzi Local Municipality and Ekurhuleni, however, there is a need to bring in more cities. The aforementioned nine cities are members of the South African Cities Network (SACN) and are represented in the SACN's Knowledge Management Reference Group (KMRG). The SACN's main activities are to promote innovation and strategic thinking between cities and update leaders on current and emerging trends in urban policy in South Africa and across the world. The cohort fosters cooperation and exchange of best practice, makes recommendations to member cities and mobilises the capacity of cities to support local and national government. The KMRG has regular KM peer-based learning sessions and organises KM related training for city KM practitioners and stakeholders. It uses city KM units as a direct communication and dissemination point for information and knowledge products and essentially provides learning and sharing platforms.

All the cities that are members of the SACN are already involved in knowledge sharing initiatives and have differing KM recognition levels. The scale, emphasis, location and extent of the KM function vary across the cities (Kitchin et al, 2013:2). Although they are part of the same network and reference group, the aforementioned cities are very different in terms of their KM. Cape Town, Johannesburg and Buffalo City all have KM strategies in place while eThekwini's strategy is still under development. EThekwini Municipality is a unique case in that it is the only municipality to have KM as a part of its Integrated Development Plan (IDP). As a result of the different contexts in which these municipalities operate, one may find that their KM strategies will also differ in terms of focus areas. Cape Town's strategy is to focus more on systems and the use of Information and Communication Technology (ICT); Johannesburg's focus is on processes; Buffalo City's focus is on political leadership; and eThekwini's focus, in terms of the development of their strategy, are individual and groups of people within the municipality who have been identified as organisational assets.

EThekwini, Cape Town and Johannesburg, (the largest cities in South Africa), as well as Buffalo City, all have reputable KM practices and processes that they are mainstreaming and institutionalising. While Ekurhuleni remains at infant junctures of institutionalising KM, Nelson Mandela Bay and Tshwane are in the course of shaping their function of KM (Kitchin et al, 2013:2). Mangaung, which had actually acknowledged and started institutionalising KM fairly early on, suffered setbacks due to staff turnover. Unfortunately, put together, this signifies the most progressive KM capacity in South African local government to date (Kitchin et al, 2013:2).

KM is about finding the balance between systems, people and processes. The balance of these elements determines the focus of the KM strategy. In the case of the City of Johannesburg, the process started in the year 2002 with the creation of the Johannesburg Innovation and Knowledge Exchange (JIKE), where KM was seen more as a service function rather than a strategic one. JIKE essentially carried out the KM function of the other departments. As time went on and as JIKE developed, it started to adopt the role of a support function where it moved away from carrying out the KM function of other departments to actually assisting them and supporting them to carry out their own KM. This occurred around the year 2007. In 2013, JIKE was transformed to become the Innovation and Knowledge Management (IKMU) Unit, which serves a strategic function for the City of Johannesburg. This came about due to the realisation that KM needs to impact on communities, not just the administrative functions of the municipality. The City of Johannesburg considers KM to be vital for ensuring enhanced municipal service delivery. The IKMU is accountable for ensuring the practice and endorsement of an effective KM practice and culture within the City of Johannesburg (Kitchin et al, 2013:8). The unit is part of the Group Strategy Policy Coordination and Relations (GSPCR) department, which is also accountable for integrated and community-based planning,

monitoring and evaluation, and strategy and relations. Refer to chapter 4, section 4.2 for a detailed background on the evolution of KM within eThekwini Metropolitan Municipality. The next section will discuss factors affecting knowledge transfer. Thereafter, knowledge creation and sharing in relation to KM will be explored. This then leads to a discussion of the theoretical framework that guides this study.

2.10 Factors affecting knowledge transfer

Knowledge is more than a collection of data or information. It is entrenched in human experience within a social context. The management of knowledge transfer requires close attention to individuals and cultures as well as to IT and organisational structures (Lopez & Esteves, 2011:89). In the knowledge based economy evident in this global era, knowledge sharing is progressively seen as vital to organisational effectiveness. An employee's willingness to share knowledge with fellow colleagues allows organisations to effectively manage their knowledge resources. However, knowledge sharing is challenging in organisations. Firstly, employees' tacit knowledge is difficult to share on the basis of its very nature. Secondly, knowledge sharing is typically voluntary (Amayah, 2013:454). Among the factors that affect knowledge transfer are trust, culture, personal motivation, information technology, human resources, organisational structure, strategy and leadership and directives from politicians. Each of these factors is discussed in turn before considering knowledge creation and sharing in relation to these factors and KM.

2.10.1 Trust

"The willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party'' is how trust is defined by Boh, Nguyen and Xu (2012:30) and is said to be one factor that can affect the transfer of knowledge. Boh et al (2012:31) contend that with safety nets in place, such as sanctions, policies and organisational regulations to protect individuals' self-interests, employees will feel safer to share knowledge. If the knowledge is abused, employees have the assurance that the knowledge seeker will be reprimanded for such behaviour. This will thus encourage individuals to engage in knowledge transfer. An environment which is caring and open is key to KM because it inspires relations amongst individuals. Such an environment expedites the sharing of knowledge. If employees trust an information source to be objective and reliable, then they will be more likely to use the knowledge made available to them. Therefore trust leads to greater openness between individuals, encourages a willingness to collaborate with others and knowledge sharing (Amayah, 2013:458). The availability of trust within an organisation allows for knowledge transfer because it increases the will of individuals and groups to commit to helping other partners to understand new external knowledge (Boh et al, 2012:38). As trust becomes part of organisational culture, a more enabling environment for knowledge sharing is likely to develop.

2.10.2 Culture

Another factor that affects the transfer of knowledge is organisational culture. From a broad perspective, culture may be viewed as the shared values and beliefs which are broadly shared between individuals. From an organisational view, it consists of values, norms and assumptions that are entrenched in the organisation's practices. Gaffoor and Cloete (2010:3) define organisational culture as "the unique combination of values, beliefs and models of behaviour in an organisation". They argue that organisational culture is a representation of the institution's main ideals thus prescribing the social standards for employees. For the basis of this dissertation, culture is defined as "the shared values, beliefs and practices of the people in the organisation" (Syed-Ikhsan & Rowland, 2004:100). Organisational culture can affect the transfer of knowledge (Boh et al, 2012:31). Syed-Ikhsan and Rowland (2004:100) highlight the importance of understanding the role of organisational culture in knowledge transfer and sharing before attempting to employ new strategies. Organisational culture influences the outcomes of other factors, such as management methods and technology which fundamentally bears upon the success or failure of KM (Syed-Ikhsan & Rowland, 2004:100). An institutional culture that supports KM depicts at least five characteristics. These are (1) a proclivity toward wide-range knowledge sharing amongst all employees, (2) an emancipated workgroup, (3) interaction and communication within and across sections or departments, (4) performance indicators and objectives which are harmonised throughout the institution and (5) a transparent organisational milieu (Gaffoor & Cloete, 2010:3).

"Firms can introduce the culture of knowledge sharing to the workers, not only by inserting KM design into the firm's strategy but also by changing the workers' attitude to support the awareness of and commitment to knowledge sharing in an organisation" (Rahab, Sulistyandari & Sudjono, 2011:113). The two main types of culture are individualistic and collectivist culture. Individualistic people are prone to viewing themselves as independent of collectives and their ties with others are loose. Collectivists are inclined to share resources with group members and are concerned with the consequences of their actions on the group (Boh et al, 2012:32). Of these two cultures, the individualistic culture is the one which is less favourable for encouraging knowledge sharing and knowledge transfer. This makes it crucial to not only consider the alignment of individual values with organisational culture when looking at knowledge transfer; but to also consider whether or not these are conducive for knowledge transfer (Boh et al, 2012:38). If an institution possesses an organisation-wide KM system but lacks the organisational culture which supports the KM system then the effectiveness of KM in the organisation is hampered (Gaffoor & Cloete, 2010:3). Aspects of organisational culture which are vital drivers of knowledge sharing include reward systems linked to knowledge sharing, open leadership climate and top management support (Rahab et al, 2011:113). Organisational culture establishes work systems, beliefs and values that impede or inspire both knowledge sharing and organisational learning. Hence, if the organisational climate is not conducive to knowledge

sharing, then individuals would be less likely to engage in continuous learning and knowledge sharing (Amayah, 2013:457).

A work environment favourable for knowledge sharing is created by using an amalgamation of organisational practices and communication tools. These should be bolstered by social networks, communication, trust, and lively interaction amongst employees. Mutual concerns about efficacy between employees and managers would be addressed (Nakano et al, 2013:291). "The adoption of participative operational practices and structured procedures on the shop floor promotes knowledge creation and sharing. These practices utilise cross-functional relationships and promote cooperation, the formation of ad hoc relationships and the creation of structures that are less hierarchical than traditional organisational configurations. These practices also create a sense of membership, common language and shared understanding, which synergize to enable knowledge sharing" (Nakano et al, 2013:293).

Amayah (2013:456) argues that in the public sector, because employees often associate knowledge with power and promotion opportunities, it is more difficult to facilitate knowledge sharing. The organisational structure, time allocation, leadership and trust could be knowledge sharing barriers. This view is supported by Syed-Ikhsan and Rowland (2004:101) who posit that public sector employees view information as an asset that must be personally guarded and not passed to other departments or agencies. To these scholars public sector employees tend to be concerned with what they may lose or gain by sharing knowledge. Hence, such employees need a strong personal motivation to share knowledge (Syed-Ikhsan and Rowland, 2004:101). The variable of personal motivation is discussed next.

2.10.3 Personal motivation

The willingness of employees to share knowledge may be increased by individual motivators. The perception that the act of sharing knowledge is worth the energy and effective in helping others motivates employees to share their knowledge (Rahab et al, 2011:113). Community concerns, normative considerations and personal benefits are three classifications of motivating factors that have a bearing on people's inclination to share their knowledge with other employees (Amayah, 2013:457). First, community concerns refer to the moral obligation that one feels toward benefiting or advancing other people in one's network. In other words forming relations with colleagues by sharing knowledge tends to fortify one's position within an organisation as a means to shape a stronger community. Second, organisational standards that individuals are required to follow are referred to as normative considerations. Normative considerations take into consideration cultural norms and values that can influence a person to share their knowledge. Since values affect behaviours, goals and attitudes; people that share values and a common vision are more likely to share their knowledge. Finally, personal benefits attained by individuals from sharing knowledge include those of an intellectual and emotional nature. Moreover, enhanced professional status and reputation

as well as career advancement are personal benefits that could motivate one to share knowledge (Amayah, 2013:457). In the global knowledge-based economy era, this sharing of knowledge and subsequent creation of knowledge is often best accomplished through the use of information technology.

2.10.4 Information Technology

Information Technology (IT) is fundamental to the upkeep and configuration of KM efforts. IT endorses KM by expediting swift searches that generate retrieval of and access to information. This subsequently, inspires communication and cooperation among members of an institution (Gaffoor & Cloete, 2010:4). An investigation of the institution and its existing system is needed when an organisation is considering the application of a particular KM tool. This is necessary to establish which device is going to be the best in furthering the contextual requirements of the organisation. According to Pinho et al (2011:226), factors that affect knowledge sharing and transfer from a technological perspective are maladjustments between processes and IT systems, and/or between user's needs and IT systems/processes; as well as poor IT systems and lack of processes to support information/knowledge distribution.

On the issue of knowledge sharing using IT systems, Panahi et al (2013:3) posit two schools of thought. The first advocates that knowledge is either absolutely tacit or absolutely explicit. Proponents of this school of thought contend that since the nature of tacit knowledge is highly personal, IT may not be as rich as face-to-face tacit knowledge sharing. In contrast the second school of thought argues that knowledge is not neatly divided by absolutism between tacit and explicit knowledge when it comes to the use of IT systems. Rather, knowledge may be tacit across various levels. Those advancing the second school of thought claim that low to medium level tacit knowledge sharing may be effortlessly facilitated by IT while high level tacit knowledge sharing can be only fairly supported by IT systems (Panahi et al, 2013:3).

Averweg (2012:5) argues that by allowing for the efficient presentation, acquisition and sharing of knowledge, intranet technology is also an essential part of the organisation. It is this reason that, in the institutional environment of municipal organisations, an intranet system needs to be well managed to promptly enhance the sharing of knowledge. Averweg's (2012:1) study found that eThekwini Municipality's intranet was at a medium maturity level. Whilst there was information sharing, the intranet was not found to be of use as a structure for sharing knowledge. There was room for enhancement of the content on the intranet although it appeared to augment knowledge sharing in a limited capacity.

Factors of trust, organisational culture, personal motivation and information technology are arguably only as effective in knowledge transfer and creation as the human resources who embody these factors.

2.10.5 Human Resources

An organisation's human resources have a significant bearing on the institution's KM practices. Workers' past experiences, qualifications and skills are valuable to an organisation. When employees are employed in the right positions, at the right times, the effortless generation of new knowledge can be expected. In addition to skills and knowledge that employees already have, they are also able to gain important knowledge from training and induction programmes. Ample training allows workers to transfer their knowledge into the institution's policies, traditions, practices and processes (Gaffoor & Cloete, 2010:3). The knowledge which employees gain from learning or training will empower them to transfer their knowledge into the organisation's culture, capabilities, strategies, policies, job descriptions and organisational processes (Syed-Ikhsan & Rowland, 2004:103). Employees who lack sufficient training and explicit knowledge, labour to keep up with co-workers. It is therefore vital for organisations to institute effective training programmes to assist workers to acquire knowledge and participate in the transfer and creation of knowledge within the organisation.

Gaffoor and Cloete (2010:3) point out that knowledge contributions from employees who are willing to construct a conducive KM culture are essential for the effective execution of KM in an organisation. This includes employee willingness participate in knowledge-based networking activities that promote knowledge creation and sharing. Organisations should therefore employ KM strategies that are people centred, encourage learning and inspire sharing by means of teamwork and motivation. Such strategies should give workers enough time to learn and reflect on their new knowledge in a way that helps them build upon their existing knowledge. However a serious problem for KM generally, and the civil service in particular, is that of high rates of staff turnover.

Employee transfers to other posts or retirement from public service may result in the loss of vital organisational knowledge and institutional memory. As such it is essential to have applicable procedures in place to make sure that knowledge and information is retained within the organisation (Syed-Ikhsan & Rowland, 2004:102). Appropriate posting and deployment is also central to KM because knowledge is is more likely to be effortlessly created if personnel are placed in posts that suit their skills (Syed-Ikhsan & Rowland, 2004:103). Methods and processes for knowledge retention and proper deployment are best built into organisational structures, which is a factor discussed next.

2.10.6 Organisational structure

Gaffoor and Cloete (2010:4) define organisational structure as "the manner in which individuals and posts are organised to make the performance of the organisation's work possible". They argue that a linear rigid top-down structuring of the organisations' functions does not contribute to the practice of creating organisational knowledge. When power and the ability to create knowledge is confined to top management,

it tends to be used merely as an instrument instead of as a tangible product. A bottom-up structuring of the organisation, in which middle and lower level workers are accountable for the creation of knowledge is equally unfavourable. This model can considerably slow organisational processes which can disorient achievement of organisational goals. Formal organisational arrangements which constrict reporting only within sectional or departmental channels limit each section's or department's access to knowledge accumulated by other sections or departments of the organisation (Syed-Ikhsan & Rowland, 2004:101). This suggests the need for a holistic approach to KM.

Toward that end, Gaffoor and Cloete (2010:4) argue that a model which facilitates employees across all levels working together as a collective in the generation and management of knowledge is required. Therefore, the structure of an organisation should stimulate organisation-wide communication which cuts across and within organisational units and supports the interdependence of various networks and teams. The realignment of an organisation's structure to expedite the effective flow and creation of knowledge throughout the organisation is a desirable KM strategy. Syed-Ikhsan and Rowland (2004:102) support this argument and state that knowledge creation and transfer is certainly enhanced if an organisation implements communication networks which function autonomously. Ongoing functional communication networks allow knowledge seekers and providers easy access to information by means of the shortest path. The incorporation of knowledge transfer, creation and retention into organisational structures must be driven by effective strategy and leadership.

2.10.7 Strategy and leadership

The successful application of a KM system necessitates an organisational strategy that respects the input of various members of the organisation. The policies and programmes that evolve from the organisation's strategy should be in alignment with one another and be jointly accommodating of the organisation's KM strategy (Gaffoor & Cloete, 2010:4). A successful KM strategy therefore, is dependent on leadership which appreciates 'trial and error' and displays dedication to continuous improvement and innovation (Gaffoor & Cloete, 2010:4). Administrative strategy and leadership and political strategy and leadership highlight the longstanding debate in public administration as to whether the relationship between administration and politics is dichotomous or complementary in nature. Whether one supports the former or latter view, public administration staff would have to mindful of political directives.

2.10.8 Directives from politicians

Although the factor of political directives is not discussed in most KM literature, it will be touched on very briefly here. Syed-Ikhsan and Rowland (2004:107) argue that in public organisations, political influences impact greatly on the creation of knowledge and often there are unwritten policies or directions that need to be followed. Thus, it may be accepted that political influence in a public organisation has an impact on

the effectiveness of knowledge transfer. In a study based on the Ministry of Entrepreneur Development of Malaysia it was found that political issues have a significant relationship with both the creation and transfer of knowledge (Syed-Ikhsan & Rowland, 2004:109).

Pinho et al (2011:217) argue that an examination of the factors affecting the KM flow/processes must focus on the interplay between the negative and positive effects of these factors, with the goal of reducing the negative and increasing the positive. Political directives can thus be considered an additional factor that impacts on organisational knowledge transfer and creation.

2.11 Knowledge sharing and creation strategies

Earlier sections provided an overview of KM in public sector organisations and factors affecting knowledge transfer. This section turns to knowledge sharing and creation strategies that undergird KM, including knowledge transfer. Knowledge sharing can be said to lead to knowledge creation. "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 procedure" (Amayah, 2013:1). Lopez and Esteves (2011:89) contend that organisations generally use two mutually exclusive strategies to knowledge sharing and creation. The first is known as the codification strategy whereby repositories are used to carefully codify and store knowledge, facilitating effortless use and access to everyone within the organisation. The second is termed the personalisation strategy. Here, knowledge is mainly shared by means of direct person to person contact and the knowledge shared is tied closely to the one who developed it.

Although stated differently by various scholars, KM literature generally discusses knowledge from two perspectives similar to those proposed by (Lopez and Esteves, 2011:89) The first views knowledge as an asset that is storable and may be pooled and distributed. This is consistent with but not the same as the codification strategy. While knowledge may be pooled and distributed, it may not be codified and available to everyone. The second perspective on knowledge sharing and creation envisages knowledge as entrenched in human relations and thus inseparable from human actions. The latter viewpoint emphasises the role of social relations and both collective and individual activities in KM (Nakano et al, 2013:292). This human relations perspective is somewhat distinct from the personalisation strategy since the knowledge shared is not necessarily closely tied to the person who developed it but is seen as produced and shared by and through individuals and collectives. The human relations standpoint is consistent with social learning knowledge.

Noorderhaven and Harzing (2009:723) argue that social learning knowledge is formed through dialogues and interactions between people. It gives emphasis to the idea that knowledge is not a physical object that is passed from one person to another but rather it "is socially constructed through collaborative efforts with

common objectives or by dialectically opposing different perspectives in dialogic interests". Rahab et al (2011:113) state that at an individual level, knowledge sharing refers to communication between co-workers to assist one another to achieve higher levels of work-related performance. For the organisation, knowledge sharing refers to processes associated with the capturing, organising, reusing, and transferring of knowledge-based experiences; making organisational knowledge accessible to everyone who needs it. However, social interaction should not be viewed only as a means of transferring already existing knowledge. It is in fact a prerequisite for the production of knowledge as indeed all knowledge is socially constructed (Noorderhaven & Harzing, 2009:725). Socially constructing knowledge while sharing and creating it stimulate employee bonding and united action. Such bonding and action are driven by individual engagement and collective performance concerned with organisational efficacy (Nakano et al, 2013:292).

For knowledge to be useful to others it needs to be extracted from the local situation and translated so that it is understandable and the receiver is able to interpret and adapt it to local practices. This is especially true of tacit knowledge, which cannot be simply captured, converted or transferred as it is only manifested via action. Social interaction is thus not only a channel for the transfer of knowledge produced at one end and consumed at another but also an important condition for the possibility of knowledge sharing and integration (Noorderhaven & Harzing, 2009:720). Social interaction significantly influences the extent to which knowledge sharing happens, not just within an organisation but also between different organisations.

Knowledge sharing and creation has been known to be the basis for organisational partnerships and the generation of social capital. Lopez and Esteves (2011:88) reveal that external stakeholders provide opportunities to introduce new knowledge into an organisation. Acquisition of proficiencies and knowledge from one partner organisation to another or mutual exchange of proficiencies and knowledge creates a deeper and broader knowledge base for partner organisations. These authors further state that the on-going process of acquiring outside information from partners, adapting it into the existing knowledge base and utilising that knowledge to productively embark on functional activities, procreates internal capabilities. This interchange that empowers people and organisations shows that social capital can be regarded as a factor which contributes to the willingness to share knowledge (Amayah, 2013:458) as well as to co-create socially constructed knowledge. Knowledge and creation strategies combined with knowledge transfer are foundational to holistic KM.

2.12 Theoretical framework

The theoretical framework for this study is developed from a convergence of factors affecting knowledge transfer and the key concepts of knowledge sharing and creation as reviewed in the literature and applied to KM within local South African government structures. Figure 2-1 below depicts the broad theoretical

framework that highlights the interdependent relationship between the organisational strategy and the KM strategy. The KM strategy is affected by knowledge transfer factors of trust, culture, personal motivation, IT, HR, organisational structure, strategy and leadership, and political directives. These factors need to be considered when developing the organisational KM strategy.

Once discovered, those factors that hinder KM initiatives should be removed and those that promote these initiatives advanced. Thereafter, the enabling factors will determine which knowledge sharing strategy is best suited to the institution: either codification, personalisation, social learning or a combination of these strategies. The alignment of the organizational strategy, KM and knowledge sharing strategies, will result in the development of organisational characteristics that support knowledge creation and sharing. These characteristics will enable local government to deal more effectively with its context-specific challenges, which include demonstration of commitment and capacity to give effect to social, economic and constitutional demands.

Organisational Strategy

KM Strategy

Trust, Culture, Personal Motivation,

IT, HR, Organisational Structure,

Strategy and Leadership and

Political Directives

Personalisation Strategy

Where knowledge is closely tied to the person who developed it and is shared mainly through direct person to person contacts

Codification Strategy

Where knowledge is carefully codified and stored in an appropriate repository, enabling easy access and use by anyone in the company

Organisational characteristics that support knowledge creation and sharing

Figure 2-1: Broad Theoretical Framework   (Adapted by researcher from: Bosua and Venkitachalam, 2013; Lopez and Esteves, 2011; Amayah, 2013; Boh et al, 2012; Syed-Ikhsan and Rowland, 2004; Gaffoor and Cloete, 2010; Rahab et al, 2011; Nakano et al, 2013; Pinho et al, 2011; Panahi et al, 2013; Averweg, 2012; Noorderhaven and Harzing, 2009)

While Figure 2-1 reflects a broad theoretical framework, Figure 2-2 depicts the narrow theoretical framework for this study. The narrow theoretical framework shapes the contours for this study which focuses specifically on the alignment of the KM strategy with the knowledge transfer strategy in terms of two factors: personal motivation and organisational structure. The interaction of these two factors will determine the knowledge sharing strategy to be adopted: either codification, personalisation, social learning strategies or a combination of these strategies. However, the codification and personalisation strategies are seen within the parameters of this study as subsumed within social learning strategies. Therefore, the focus is primarily drawn to the underlying codification and personalisation strategies. In effect, knowledge creation and sharing, for the purpose of this study, are operationalised as codification strategies on the one hand and personalisation strategies on the other hand. Personal motivation and organisational structure have been selected from the range of factors shown in the literature to affect knowledge transfer. This selection is made because according to existing research and experience, they are considered to be the most important factors for the South African context yet understudied. Figure 2-2 shows the narrow theoretical framework.
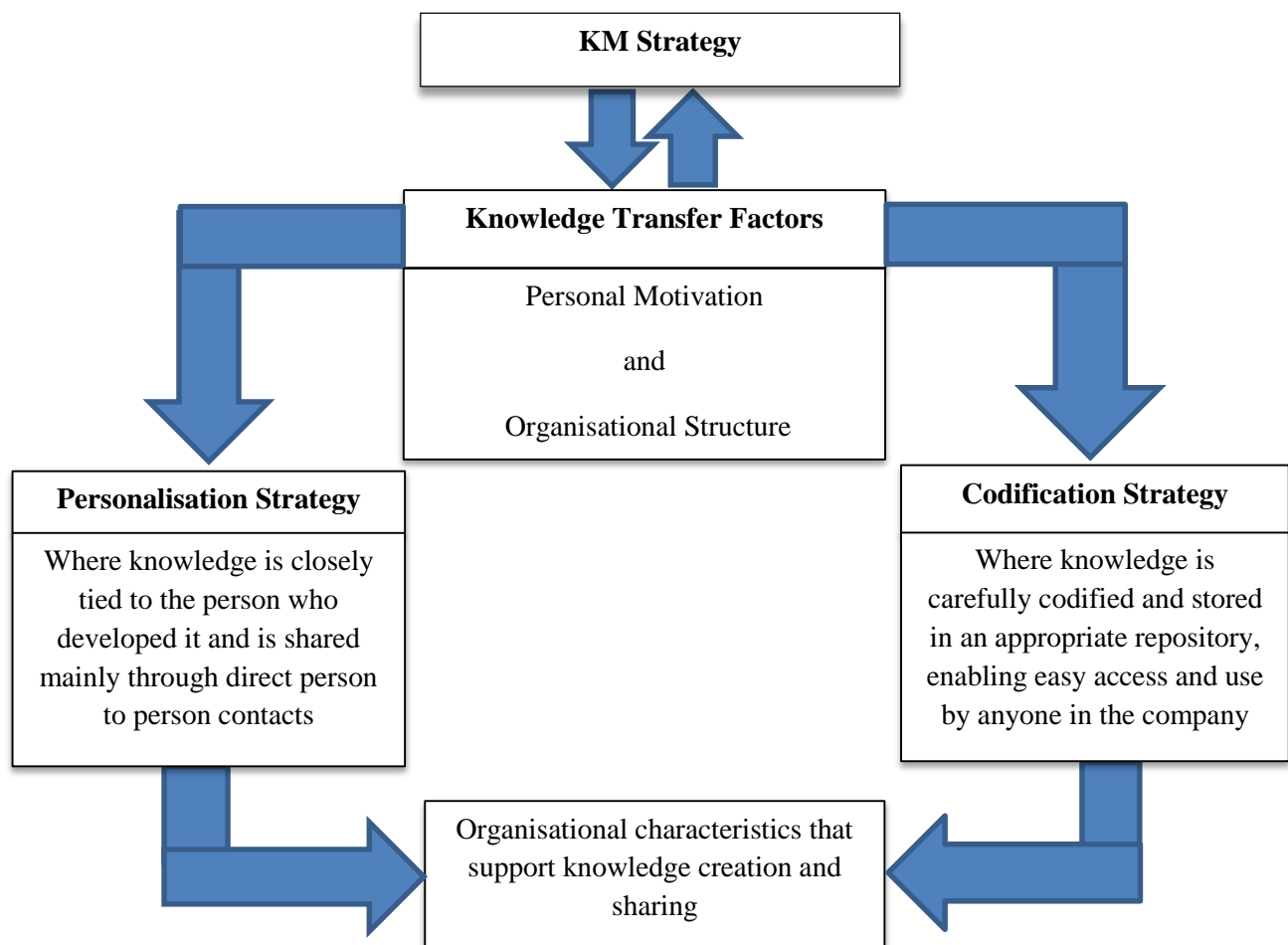
Figure 2-2: Narrow Theoretical Framework (Adapted by researcher from: Bosua and Venkitachalam; Rahab et al, 2011; Amayah, 2013; Gaffoor and Cloete; 2010; Syed-Ikhsan and Rowland, 2004; Lopez and Esteves, 2011; Nakano et al, 2013; Noorderhaven and Harzing, 2009)

The decision about which knowledge sharing strategies and factors affecting knowledge transfer to study was also influenced by employment of the post-rationalist approach, which takes organisational context into account. Organisational context is expected to shed light on KM in a global South country such as South Africa. While the overarching research problem revolves around service delivery challenges of local government, the narrow focus of this study is on the extent to which eThekwini municipality implements KM strategies. Exploring the extent to which KM strategies are implemented can begin to unravel ways in which KM could improve service delivery as that broader inquiry is beyond the contours on this study. At any rate, as indicated in section 1.2, it is presumed that KM is necessary to address public service challenges of sustained performance, collaboration and maximisation of individual and collective employee and organisational performance. In the absence of clear empirical evidence in this regard, as a point of departure, this study established research objectives and research questions that revolve around knowledge sharing and creation as components of KM. In addition, in light of the literature review and research problem drawn from the literature review, it is hypothesised that there is no correlation between public organisation characteristics and knowledge creation and sharing. Taken as a whole, the narrow theoretical framework guiding the study integrates certain factors influencing knowledge transfer (personal motivation and organisational structure) with mutually exclusive KM strategies (personalisation and codification), as shown in Figure 2-2.

2.13 Chapter summary

In this chapter, KM literature was discussed. Types of KM were examined in the South African developmental context, highlighting the local sphere of government. Factors affecting knowledge transfer as drawn from literature, along with strategies for knowledge sharing and creation were explored. It was shown that KM processes need greater levels of employee motivation and a conducive organisational culture and structure in order to harness the benefits of knowledge sharing and creation for organisational effectiveness. Personal motivation and organisational structure have been identified as the most applicable factors for the specific context of this study however there are other factors also involved. Successful KM processes need to translate internalised tacit knowledge into explicit knowledge in order to share it. Individuals and groups in the organisation need to internalise and make codified knowledge meaningful to them after it is recouped from the KM system. Knowledge is also created or constructed through social learning. Therefore, KM comprises all the explicit and tacit knowledge which people and groups have regarding processes, products and systems within an organisation. Knowledge creation and sharing thrive in positive environments thereby enhancing KM strategies. Conversely, negative environments will diminish knowledge creation and sharing resulting in poorly implemented and fragmented KM strategies

that are likely to fail in terms of their organisational effectiveness objective. A broad theoretical framework based on the literature and the narrow theoretical framework which guides this dissertation research study were identified in this chapter. The next chapter focuses upon the research design and methods employed to carry out this dissertation research study.

Chapter 3
Research Methodology

3.1 Introduction

This chapter examines the research design and methods used to conduct the study and the justification for methodological choices. The mixed methods research design and case study strategy are presented. This is followed by a discussion of sampling strategies and techniques applied in this study. Data collection activities are highlighted along with data analysis modes consistent with mixed method research. Rigour in mixed methods studies is explored before the chapter concludes with ethical considerations and study delimitations.

3.2 Research design

This study employed a mixed methods research design. This research design was selected because quantitative and qualitative methods in isolation are insufficient to explore the complexity of the issue at hand: ascertaining to what extent the eThekwini Metropolitan Municipality is implementing KM practices, specifically with regard to knowledge creation and sharing. When quantitative and qualitative approaches are used in combination they complement one another and achieve a more comprehensive analysis (Ivankova, 2002:43). In support of this argument, Creswell (2009:15) states that with the mixed methods approach, the biases inherent in each method cancel each other out.

Mixed methods research design incorporates methods of collecting or analysing data from the quantitative and qualitative paradigms in a single research study (Williams, 2007:70). Venkatesh, Brown and Bala (2013:24) state that advocates of mixed methods research are conscious of the worth of both qualitative and quantitative paradigms to nurture a deeper insight into the phenomenon of interest. Mixed methods research falls on a continuum from not mixed to fully mixed methods, with partially mixed designs occupying regions somewhere between the two (Leech & Onwuegbuzie, 2009:267). When devising a mixed methods study, concerns of implementation, integration and priority need to be considered. Implementation means deciding and justifying how the qualitative and quantitative data collection and analysis will take place. Implementation of the combined approaches could consist of simultaneous, parallel or chronological collection and analysis of data. The stage at which connecting and mixing qualitative and quantitative data takes place in the research process is referred to as integration. Priority relates to which research method shall be given greater emphasis in the study, either the qualitative or quantitative research method (Ivankova, 2002:44). Leech and Onwuegbuzie (2009:273) argue that most mixed methods studies can be represented by one of eight designs as illustrated by figure 3-1 below.

Figure 3-1: Mixed Methods Research Design
(Adopted from: Leech and Onwuegbuzie, 2009:273)
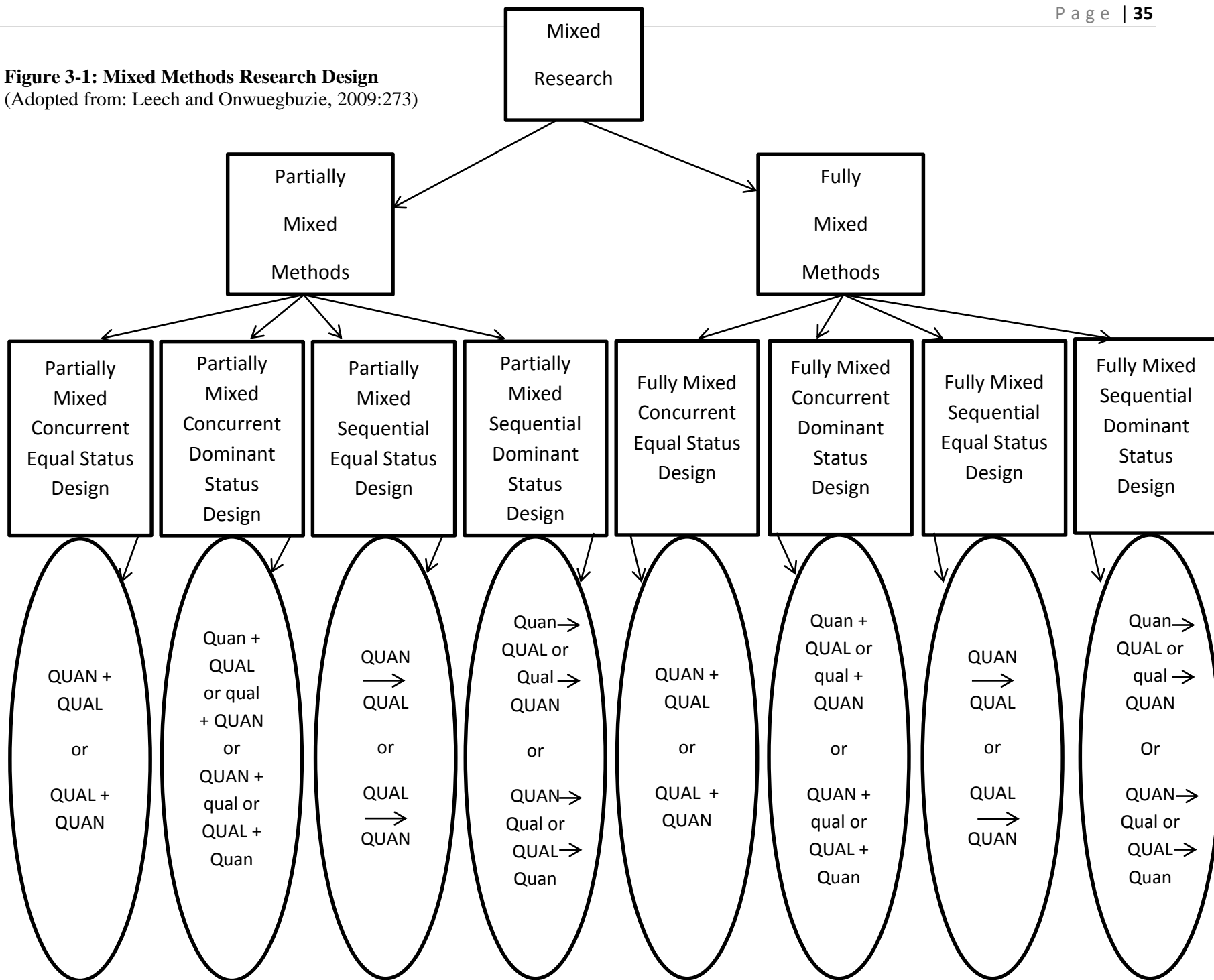
For this study, priority was initially set to be given to the qualitative method, as this method was deemed to present the greatest potential for data collection and analysis in the study. A smaller quantitative component was intended to provide the context in which KM takes place in the eThekwini Metropolitan Municipality. The study was to have utilised sequential mixed methods design, comprising of two distinct phases. In the first phase, the quantitative, numeric data collected was intended to provide the foundation on which the study would be built. In the second phase, the qualitative, explanatory data collected was to have provided a deeper understanding of the situation. As such, the quantitative data and results would have provided a general understanding of the research problem, while the qualitative data and its analysis would have enhanced and explained the reasons behind the occurrence of the former. The quantitative and qualitative methods and the results of the two phases would have been integrated during the discussion of the outcomes of the whole study.

However, due to deviations made from the proposed study with regard to sampling and data collection (expanded upon below), adjustments had to be made in terms of the set priority. Because the survey questionnaire had to be distributed to the entire organisation, rather than selected departments, the quantitative method was given priority in practice as it is more suitable for a wider perspective. Instead of just providing a general understanding of the selected departments, the data provided a more holistic insight into KM. This meant that the sequential mixed methods design was no longer appropriate for the study. The concurrent mixed methods design, as depicted in Figure 3-1, became more befitting and the qualitative and quantitative data were thus analysed as complementary to one other as opposed to one informing the basis for the collection of the other.

3.2.1 Qualitative research

This section examines qualitative research as a component of mixed methods research design. Qualitative research design is the most appropriate design choice for extracting descriptive experiences and perceptions from individuals. Qualitative research is defined as the revelatory analysis of definite issues and the researcher is charged with making sense of chaotic data while preserving perceptions of respondents (Lucas, 2012:47). This type of research is said to be more subjective in nature, requires standardisation to advance rigour and seeks to gain a deeper understanding of a situation. It often makes use of interviews, observations and focus groups as data collection methods. Ethnography, grounded theory, case studies and narrative studies are also employed as research strategies (Moalusi, 2012:55). A key aspect of qualitative research is striving to be as neutral and objective as possible in the process of collecting, interpreting and presenting data.

During qualitative data collection, particular care is taken by researchers to minimise their influence on responses from interview respondents (Snape & Spencer, 2003:20). Qualitative interviews are designed to

protect the participant's point of view of the phenomena under study. The interaction between the researcher and the participant often results in new knowledge being developed (Moalusi, 2012:55). There are certain limitations associated with qualitative research. A specific limitation relates to the complex data analysis procedures that have to be followed. Another is the possible influence of the researcher's subjectivity on the process. For this reason, every effort should be made to rigidly follow standardised data analysis methods as subsequently discussed.

Interview bias and response bias can affect the findings of a research study. Interviewer bias refers to the way in which participants respond to the interviewer based on his/her behaviour, tone of voice, and comments made (Chenail, 2011:258). For example, participants may not be willing to share their true feelings or experiences with the interviewer due to a lack of trust; or may only provide information they think the researcher wants to hear (Moalusi, 2012:60). Both these forms of bias can be reduced by building sufficient understanding with the participants. This can be achieved by the researcher communicating with candidates prior to the interviews via telephone calls and/or e-mails to explain the study and request participation (Moalusi, 2012:60). Brief discussions may also be had with the candidates prior to the commencement of the official interviews. These can be used to assure the participants that their responses will remain confidential and their identities will remain anonymous (Moalusi, 2012:61). The researcher may also conduct a pilot study to identify potential bias and appraise proposed methods to see if they work as envisioned (Chenail, 2011:257). In this dissertation research, a pilot study was not conducted. How interviews were carried out is further explored in section 3.5.1.1. The parameters of quantitative research are next discussed.

3.2.2 Quantitative research

This section will focus on quantitative research as the second component of a mixed methods research design. In quantitative research, a researcher depends on statistical information. According to Sibanda (2009:2) quantitative research is a research method that tells a story about specific phenomena using numbers and statistics. The purpose of quantitative research is to test hypotheses, look at cause and effect, and make predictions. Sibanda (2009:2) further explains that, in quantitative research, the researcher and his/her prejudices are unknown to participants in the study and participant features are deliberately hidden from the researcher. Variables are isolated by the researcher and he/she casually relates these variables to ascertain the frequency and degree of relationships. The researcher, in addition, is the one who establishes the variables for investigation and decides on which instruments will produce greatly dependable and valid scores (Ivankova, 2002:43). These decisions are based on the literature review, research problem and establishment of research objectives and questions as well as a hypothesis as appropriate. The specific

objectives, questions and hypotheses in this study look immediately appropriate to being responded to using quantitative approaches.

Table 3–1 provides a summary of the key research areas of this study. These are the philosophical worldview or paradigm, research strategy, data collection methods, type of study and the ontological and epistemological outlooks. An individual's interpretation of reality and existence is known as ontology and the understanding of how a person attains knowledge is dubbed epistemology. Mack (2010:5) defines ontology as the investigation of assertions and theories which are reached about the make-up of social reality; assertions about what it looks like, what exists, what elements make it up and how do these elements interact with one another. Epistemology as defined by Mack (2010:5), is the theory of knowledge embedded in the theoretical perspective and thereby in the methodology. Table 3-1 provides a research methodology summary that was used in connection with the mixed methods design.

Table 3-1: Research Summary

Philosophical Paradigm	Ontology	Epistemology	Research Strategy	Primary Data Collection and Analysis	Type
Post-rationalism	All creative thought is a matter of challenging assumptions	Knowledge is co-constructed in a specific context and embedded within a particular social and physical environment and it emerges from socially constructed practices	Case Study	Semi-structured interviews (content/ thematic/matrix analysis); survey questionnaires (SPSS); and observation	Descriptive

(Adapted by researcher from: Lucas, 2012)

As table 3-1 reveals and as indicated in section 1.4, the post-rationalist approach provides the ontological outlook and epistemological framework for this study. The post-rationalist approach is aligned with a mixed method research design in order to assess situational learning in eThekwini municipality as it pertains to KM. The post-rationalist paradigm, given its focus on context-based knowledge construction, is useful in understanding eThekwini's particular social and physical environment that emerges from socially constructed KM practices (Ferguson, Huysman & Soekijad, 2010:1801). This underlying post-rationalist paradigm of the mixed method research design is geared toward a holistic approach of exploring and understanding knowledge transfer as well as knowledge creation and sharing. The post-rationalist paradigm is likewise relvant to the case study strategy used to execute the mixed methods research design. This is a descriptive case study, which means the research is not only about describing a case, but also about covering

its specific social scenes and interactions (Yin, 2009:49). Just as case study research interrogates real-life socially constructed knowledge and practices, so does the post-rationalist worldview support such interrogation. The case study strategy is further discussed in section 3.3. Data collection methods are discussed in section 3.5 following the discussions on research strategy and sampling strategy in sections 3.3 and 3.4. Data analysis is highlighted in section 3.6.

3.3 Research strategy

This study employed a single case study inquiry research strategy. This strategy was selected for this study because it comprises an all-encompassing method. According to Yin (2009:13) the case study inquiry "copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result benefits from the prior development of theoretical proposition to guide data collection and analysis." The case study's ability to investigate cases in depth and employ multiple sources of evidence makes it an appropriate strategy for descriptive research studies (Rose, Spinks & Canhoto, 2015:3). Baxter and Jack (2008:548) state that in descriptive research studies, the case study research strategy is used to describe a phenomenon and the real-life context in which it occurs. The case study research strategy can be used to generate theory, to test theory and, as adopted in this study, to provide description. The unit of analysis in a study refers to the level of abstraction at which one looks for variability. The unit of observation is the level at which data is collected and the unit of analysis refers to the level at which data will be analysed (Guest, Namey & Mitchell, 2012:25). The six selected organisational units within eThekwini Metropolitan Municipality form the units of analysis for the qualitative component of this study. The six organisational units that comprise the units of analysis represent a sampling of organisational units in the municipality. The organisational units are profiled below while the sampling strategy and technique are also discussed.

3.4 Sampling strategy and technique

Sampling strategies and techniques differ in qualitative and quantitative studies. On the one hand, for qualitative studies, sampling likely involves the identification and selection of individuals or groups that hold particular knowledge about the phenomena under study. On the other hand, in quantitative studies, sampling strategies require a target population that tends to be representative of a larger study population. For the qualitative component of this study, non-probability sampling was used. Lucas (2012:52) states that with non-probability sampling, certain individuals are targeted because of what the individuals know about the subject matter. Therefore, there is no possibility of inclusion of every person. Since certain eThekwini employees are deemed to know more about KM than others, given the role of such employees in KM, non-probability sampling was appropriate for this study. More specifically, purposive sampling, is the most

appropriate sampling technique for this specific study. Participants who met the necessary criteria and were willing to participate were purposefully selected to take part in the study.

The target population for the study were employees of eThekwini Metropolitan Municipality, specifically the Municipal Institute of Learning (MILE), the Skills Development Unit (SDU), the Organisational Development and Change Management Unit, the Information Services (IS) Department, Libraries and Heritage Department, and the Performance Management Unit. The units and sampling are captured in Table 3-2. MILE was chosen for this study because it acts as co-ordinator for eThekwini's KM agenda. It is responsible for policy co-ordination, improvement of internal access to information, and the creation of an enabling KM organisational culture through sharing of innovations and good practices. The SDU was selected because its purpose is to promote the principles of lifelong learning within the eThekwini Municipality area. It strives to achieve this through provision of comprehensive and extensive human capital development strategies and interventions in order to ensure compliance with the Skills Development Act 97 of 1998 and other legislative mandates. In cooperation with other units and departments, SDU is responsible for several knowledge related programmes. These include teacher support programmes, learner excellence programmes, cooperative education, learnerships and internships, and Adult Basic Education and Training (ABET). SDU is also responsible for the development of eThekwini as a learning city through the establishment of partnerships and networks to optimise learning opportunities, access to information and knowledge sharing for the benefit of all citizens. The Organisational Development and Change Management Unit was selected for this study because it is responsible for productivity improvement in the municipality. This is achieved through interventions into methods and materials in use and recommendation of changes to improve productivity. Moreover, it strives to undertake business process management interventions in order to improve the delivery of municipal services to citizens. The Libraries and Heritage Department is included in the study because it seeks to promote the quality of life, creativity and life-long learning for citizens of the municipality. It provides integrated access to information and knowledge through the development, interpretation and preservation of culture and heritage in libraries, museums, art galleries, science centres. The Performance Management Unit forms part of the study as it sets out to create an environment that enables staff and the organisation to perform at its highest levels. It serves to measure and monitor the implementation of the Integrated Development Plan (IDP) and the strategy of the organisation. It also measures the performance of the organisation's entities and provides assistance to officials and training on performance management.

Table 3-2 depicts the proposed and actual sample sizes of the qualitative component of this study. The deviation between the quantities of proposed and actual interviews is a result of the time lapse between the

initial study proposal and the completion of internal processes required for data collection. Departmental re-structuring occurred prior to commencement of field research and some positions were vacated.

Table 3-2: Sample Size for Qualitative Component

Organisational Unit	Proposed Interviews with Senior Management	Actual Interviews with Senior Management
Municipal Institute of Learning	2	2
Skills Development Unit	2	1
The Organisational Development and Change Management Unit	2	2
Information Services Department	2	2
Libraries Department	2	3
Performance Management Unit	2	2
Total	**12**	**12**

The proposed and actual sample sizes for the qualitative component were consistent, unlike the proposed and actual sample size for the qualitative component of this study.

As indicated above, in quantitative studies, sampling strategies require a target population that tends to be representative of a larger study population. In that case there is a possibility of a wider range of study respondents and probability sampling is used. One feature of probability sampling is random sampling. This is when citizens within a population are sampled by means of a random process to ensure that every person within the population gets equal probability of being chosen for the sample (Lucas, 2012: 61). The process of selecting a sample has to guarantee that all individuals in the population that can be chosen have the same probability of being chosen. For this study random sampling was conducted for the quantitative portion of the research. Table 3-3 depicts the proposed sample size of the quantitative component of this study. However, the Research and Higher Degrees Committee of the School of Management, Information Technology and Governance recommended that the proposed quantity of completed questionnaires be reduced as the number was considered too high for master's dissertation research.

Table 3-3: Sample Size for Quantitative Component

Institution	Proposed Survey Questionnaires
Municipal Institute of Learning	
Skills Development Unit	146 x 40% = 58
The Organisational Development and Change Management Unit	43 x 40% = 17
Information Services Department	147 x 40% = 59
Libraries Department	1121 x 40% = 448
Performance Management Unit	26 x 40% = 10
Total	**592**

In terms of random sampling, all eThekwini employees with recognised log-in details had an equal chance of participating in the survey. As explained more fully in section 3.5.1.2, the survey was placed on the municipal website and had to be conducted online due to time and financial constraints of the researcher. Therefore, survey respondents were not restricted to employees of the selected organisational units of municipality designated as units of analysis of the study. Any employees with a municipal e-mail address (as this was how the link to the survey questionnaire was distributed) could be part of the sampling size. A total of 229 survey questionnaires was returned.

When choosing a sample size, personal bias can lead to inaccurate representation of the population. Consequently, the findings of the study may become counterfactual and pointless. During the selection of persons to take part in a qualitative study, one's personal bias may play a role (Lucas, 2012:53). The researcher had no control over which employees randomly decided to participate in the quantitative component of this study. Nevertheless, since the researcher is devoted to attaining a rich and comprehensive description of what is being researched, the sample size was influenced by the data acquired and not by the quantity of interviews conducted or survey questionnaires returned.

3.5 Data collection

Data were collected through an amalgamation of semi-structured interviews, survey questionnaires, documentary evidence and observations. The interviews comprised of a series of closed questions to procure specific information, open ended questions to attain a depiction of the circumstances, and probing questions to discover a specific emphasis of direction or importance to the research area. The interviews were recorded to facilitate better data capturing and interpretation. The recordings and transcripts have been stored for the prescribed period of time to improve confirmability of the study. The interviews were aimed at attaining descriptive and explorative experiences and perceptions of the participants, guided by the different themes examined in the literature review.

The survey questionnaires consisted of a few open ended questions intended to glean demographic information, while the balance was composed of closed questions to ensure consistency of the required information for statistical analysis at a later stage. Documentary evidence was obtained by liaising with the MILE offices. The researcher also attended seminars and masterclasses arranged by MILE where further knowledge and insight into KM was gained through naturalistic observation as opposed to participant observation.

3.5.1 Description of the data collection methods selected

3.5.1.1 Interviews

Lucas (2012:54) defines an interview as "a conversation with the specific purpose of gathering information". He argues that individual interviews give insight into attitudes, beliefs, experiences and perceptions that lie beneath the study phenomena. Interview data enable the researcher to secure valuable descriptive information, which in turn supports the understanding of the contributor's comprehension of social reality. Compared to survey questionnaires, interviews are far more personal. With the individual interview, the researcher works directly with the participant and can thus probe or ask follow-up questions. Ritchie (2003:36) states that interviews are specifically suited where an understanding of complex systems, processes or experiences is required. Interviews are useful when one strives for comprehensive information regarding a person's thoughts and behaviours or wants to examine new issues in depth (Boyce, 2006:3). Interviews enable a thorough examination of people's particular viewpoints for greater understanding of the personal setting within which the research phenomenon is situated (Ritchie, 2003:36)

Although they can be very time consuming, respondents generally find interviews easier than surveys; especially when opinions or impressions are being sought (Boyce, 2006:3). Interviews can be conducted with one, two or even three individuals. Paired or triad interviews offer prospects for individual in-depth investigation. Moreover, they allow participants to reflect on, and draw comparisons with, what they hear

from others (Ritchie, 2003:37). Interviews provide a more explicit view by gathering information compared that allows probing of respondent answers to designated questions. Furthermore, the interview setting can make for a more relaxed atmosphere where people tend to feel more comfortable relaying information in conversation with the researcher as opposed to filling out a questionnaire (Boyce, 2006:3).

Interviews can be categorised into three varieties: informal conversational interviews; general interview guide approach or structured interviews; and standardised semi-structured open-ended interviews or unstructured interviews (Turner, 2010:754). Informal conversational interviews rely "entirely on the spontaneous generation of questions in a natural interaction, typically one that occurs as part of on-going participant observation fieldwork" (Turner, 2010:755). As a means to stay as adaptable and open as probable to the participant's priorities and nature, no predetermined questions are asked. During the interview, 'goes with the flow' of the interview dynamic.

The general interview guide approach is quite flexible in that the manner in which the questions are worded is dependent upon the researcher conducting the interview (Turner, 2010:754). Its intent is to make sure that common similar aspects of data are gathered from each respondent. This affords greater focus as opposed to the conversational approach, while also allowing for a level of adaptability and freedom in extracting data. It involves a broad agenda, which maps the issues to be explored across the sample, but the order, wording and method of exploration up will vary considerably between interviews (Arthur & Nazroo, 2003:111).

The standardised semi-structured open-ended interview is pre-designed in terms of the wording of questions. All participants are asked identical questions. However, the questions are worded in a manner that allows for open-ended responses and probing of those responses (Turner, 2010:754). The interviewer asks key questions in the same manner each time and then delves for further information; but embellishment is more limited than in unstructured, in-depth interviews (Arthur & Nazroo, 2003:111). This approach promotes faster interviews that can be more effectively analysed and compared. Arthur and Nazroo (2003:111) warn that there are diverse models of interviewing, and terms are not necessarily used consistently. What other scholars describe as semi-structured interviews may be described by others as unstructured or, at the other end of the spectrum, open-ended survey interviews. Semi-structured interviews follow an interview guide developed by the interviewer but allow for the interviewer to follow topical trajectories in the conversation that may stray from the guide when he or she feels this is appropriate (Turner, 2010: 757).

The researcher utilised semi-structured interviews for data collection in this study. Upon arranging each interview, the purpose of the interview, the reason the respondent had been chosen, the expected outcomes

of the study and the expected duration of the interview were explained in full. Just prior to each interview commencing, written informed consent was given by the respondent. Each facet of the interview was reiterated, the respondent was assured of the confidentiality of the information and the use of a tape recorder was explained. The interviews were arranged at the convenience of the respondent in terms of time and venue to ensure full co-operation. Most of the interviewees felt comfortable conducting the interviews at their offices. Due to the close proximity of most of the respondents, in certain instances the researcher was able to conduct more than one interview on the same day, which helped to save time and reduce costs.

Key data were summarised immediately following each interview. The interviews were all recorded and each was sent for transcription as and when financial resources became available. The interviews were sent to a professional transcriber for transcription due to time limitations and lack of access to necessary transcription software. The interview questions administered in this study are shown in Appendix A. Research interviews are often combined with other forms of data collection in order to provide the researcher with a well-rounded collection of information for analyses. For this study, the interviews were coupled with data collected through survey questionnaires as well as observation and the use of secondary data provided by the municipality and found in relevant literature.

3.5.1.2 Survey questionnaires

The purpose of a survey questionnaire is to provide statistical estimates of the characteristics of a target population as well as perceptions of respondents regarding certain variables. A key premise of the survey process is that by describing the sample of who actually completes the survey, one can describe the survey respondent demographics (Fowler, 2014:8). However, there are a few hindrances to administering surveys. For instance, reaction rates from surveys tend to be exceptionally low and surveys are not the best vehicles for soliciting detailed written reactions. If there is confusion with regard to any of the survey questions, the researcher is not present to offer clarity to the respondent. In addition, the researcher cannot be completely certain that the survey was completed by the respondent for whom it was intended (Marshall, 2004:132).

The circulation and return of a survey questionnaire along with costs to be incurred by the researcher need to be measured when deciding on the method of administering data collection. If a survey is emailed out to an entire study population, a huge geological spread can be achieved, but reaction rates tend to be poor; if introduced to respondents independently however, a higher reaction rate is likely. Administering surveys to a group in one setting is an option, however this approach carries the danger of respondents being aware of each other's reactions and in this way tainting the responses (Marshall, 2004:134). Questionnaires can be posted on the web, which has the potential to conquer a number of the issues, yet will nevertheless not be generally accessible to those without internet access. Additionally, if there are distinctive strategies used for diverse groups, it must be recognised if these will predisposition the outcomes (Marshall, 2004:134).

For the basis of this study, the survey questionnaire was designed in accordance with the hypotheses being tested. The null hypothesis is that there is no correlation between public organisation characteristics and knowledge creation and sharing. The alternative hypothesis is that there is a correlation between public organisation characteristics and knowledge creation and sharing. The dependent variables are knowledge sharing and knowledge creation (each operationalised as codification or personalisation KM strategies). The independent variables are organisational structure and organisational characteristics.

A link to the survey questionnaire (which was set up on the eThekwini Municipality website) was distributed via email. This method was chosen as it was the most viable to reach a high number of respondents; it was cost effective, and the respondents would have the latitude to complete the questionnaires at their own convenience. To ensure the highest possible response rate, a covering letter clarifying the motivation behind the study was included in each email. The letter also outlined the obligation on the part of the respondent, what approbation had been given for the study, an assurance of the respondent's anonymity and an explanation regarding to whom the information would be accessible. To access the survey, respondents had to acknowledge awareness that participation was voluntary, they could withdraw from completing the survey at any time and confidentiality and anonymity were explained as ethical consideration that would be observed. Contact details and the manner in which the results would be made available to participants were clearly stated; and the fact that non-participation in the study would not be detrimental was emphasised. Appendix B-1 exhibits the Indemnity Page of the survey questionnaire to which respondents were asked to agree before undertaking the survey. The survey questionnaire is exhibited in Appendix B-2. An email was sent out to all employees in possession of a corporate email who had 'log-on' authority to the municipality's computers. The access was structured in such a way that each respondent could respond only once to the survey questionnaire.

3.5.1.3 Observation and documentary evidence
Creswell (2009:7) states that in practice, the researcher collects information through the use of data collection instruments, completed by the participants, and through observations recorded by the researcher. Observation gives the researcher a chance to record and analyse behaviour interactions as they happen, while not being a part of the study population (Ritchie & Lewis, 2003:35). Another method for data collection is the use of documentary evidence. Documentary evidence analysis involves the study of existing documents, either to understand their substantive content or to highlight deeper meanings, which may be revealed by their style and coverage (Ritchie & Lewis, 2003:35).

For this study, data were also collected through observation and the analysis of documentary evidence. Due to his constant liaison with MILE, the researcher was able to attend seminars and masterclasses on different aspects of KM. Here the researcher was able to observe knowledge creation and sharing in action, as well

as record, in the field journal, some critical information on KM specific to the South African context. As a result of regular visits to the MILE offices, the researcher was also able to draft documents and internal communications, which provided some evidence that could not be sourced through interviews, survey questionnaires or observation. Literature review also contributed to documentary evidence. Once data were collected, the next step was data analysis.

3.6 Data analysis

3.6.1 Qualitative data analysis

This section will discuss the data analysis process for the qualitative component of the study. Quantitative data analysis is discussed in section 3.6.2. The qualitative data analysis process is non-linear, cumulative and involves frequent revisiting of data (Lacey & Luff, 2009:10). Having organised and prepared the data, the first step of analysis is the development of a manageable classification or coding scheme. Raw data, which includes field notes, documents and transcripts, constitutes the undigested complexity of reality. Simplifying and making sense out of that complexity is the challenge of content analysis (Patton, 2002:463). According to Lucas (2012:43), content analysis refers to any qualitative data reduction effort that takes a volume of raw qualitative data and attempts to identify core consistencies and meanings. The primary meanings discovered through the process of content analysis are generally referred to as themes or patterns (Patton, 2002:110). Content analysis may be used in conjunction with thematic analysis. Thematic analysis minimally organises and describes ones data set in rich detail and interprets various aspects of the research topic (Patton, 2002: 217).

Lacey and Luff (2009:14) prescribe that upon his/her findings through content analysis, the researcher may identify a thematic framework. They consider this to be the early coding outline, which is established from both emerging issues and a priori issues identified when the researcher initially read through the transcripts to familiarise himself/herself with the data. Coding includes arranging the information into theoretical classifications and crafting concepts or themes which are frequently surfacing throughout data analysis (Lucas, 2012:56). This stage primarily involves inductive analysis. Patton (2002:110) indicates that inductive analysis includes the ascertaining of categories, themes and patterns emerging from the raw data via the researcher's constant dealings with the data.

When themes, categories and patterns have been established, the final stage of qualitative data analysis involves testing and affirming the authenticity and appropriateness of the content analysis. This includes a careful examination of a deviate case, if one occurred, or data that did not fit into the categories developed (Patton, 2002:111). This can best be accomplished through matrix analysis or charting. Lacey and Luff (2009:14) state that matrix analysis involves utilising descriptive titles that emerge from the thematic

framework to construct matrices of the researcher's data so that there is a comprehensive view of the whole dataset. The matrices may either be case by case for each of the participants across all themes, or thematic for each theme across all participants. The crucial idea is for a single thread to develop around which everything else is arranged (Lucas, 2012:57).

For this study, a combination of content analysis, thematic analysis and matrix analysis was employed. First, all the interviews were transcribed from the recordings. The field notes and documentary evidence were organised in preparation for qualitative data analysis. The transcripts were also organised to make data more easily retrievable. This was done by grouping the responses to each question and any elaboration around the responses into several independent documents. Following this, two types of coding were undertaken. One coding process related to categories that led to themes. The second type of coding related to responses from study participants. All responses from participants were coded allowing only the researcher to be able to identify the respondents from memory. This was done in an effort to protect confidentiality and anonymity of participant responses. Upon categorical coding all the organised data, the researcher began to conduct a thematic analysis. This process involved colour- coding the data according to themes and categories emerging from the data as well as a priori issues. The colour-coding was used to make it easier to identify different overarching and recurring themes. The coding relative to the responses was protected to keep track of which respondents said what in relation to the emerging themes and patterns. During this process the researcher also kept a journal, noting perceptions and emerging themes and questions that could be later tested. Once identified, the themes and categories, were then used to create matrices which allowed for better analysis with reduced data. The codes assigned to respondents were then used to attribute responses to those participants. Figure 3-2 below summarises the whole process of qualitative data analysis in the form of a diagram or flow chart read from the bottom-up.

Interpreting the meaning of themes/descriptions

↑

Interrelating themes/descriptions

↑

Themes		Descriptions

↑

Coding of data
(Hand or Computer)

↑

Reading through all data

↑

Organising and preparing data for analysis

↑

Raw Data
(Transcripts, field notes etc.)
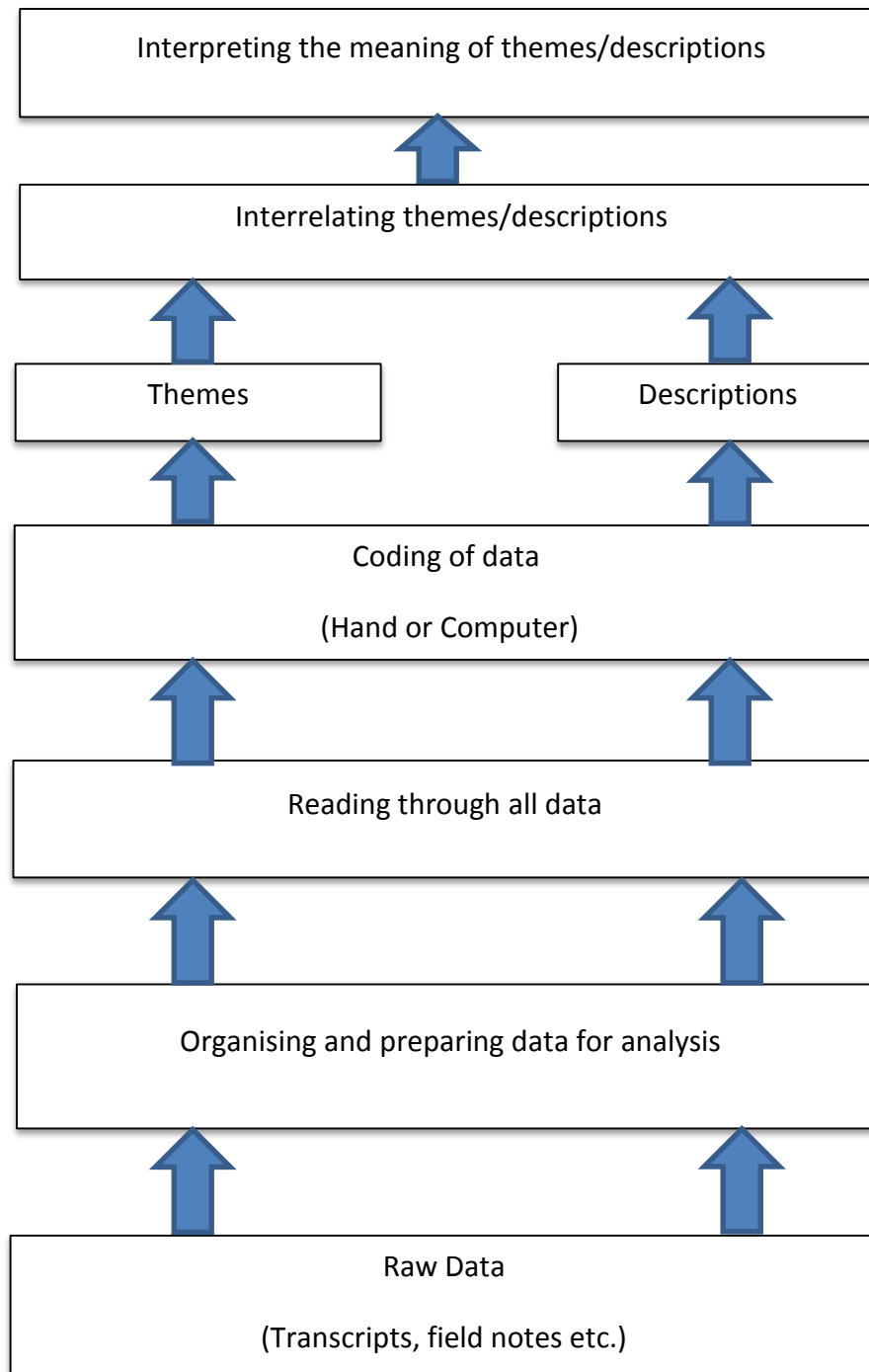
Figure 3-2: Qualitative Data Analysis Process
(Adapted by researcher from: Creswell, 2009:116)

The early stages of data reduction are attached as Appendix D. After the further reduction of data through the use of matrices, key issues identified in the literature were discussed in relation to the results of this study. Key themes which emerged from the data were also discussed in relation to KM literature and these discussions can be found in chapter 4 of this study. The next section explains the process of quantitative data analysis used in this study.

3.6.2 Quantitative data analysis

Quantitative data analysis infuses all stages of a study within a quantitative research design. Unlike qualitative studies wherein analysis is inductive in nature, quantitative data analysis is considered deductive in nature (Creswell, 2009:106). Concern with quantitative data analysis should commence during the design of a study, continue as detailed plans are created to collect data in different forms, and become the focus of attention after data is collected. Data analysis is completed only during the report writing and reiterative reviewing stages (Centre for Disease Control and Prevention, 2009:1). Neuman (2004:248) advises that upon completion of data collection, the researcher needs to assess whether or not his/her expectations in relation to the data characteristics and quality have been met. Based on this assessment, a choice between possible analyses should be made in terms of the nature of the data. Much turns on identification of the variables being studied and the hypothesis being tested (Creswell, 2009:108). If the data does not meet the assumptions of the methods planned, then the researcher will have to decide what to do with the data collected. The researcher may decide on a different form of data analysis but if the data is deemed incomplete or untrustworthy, additional data collection may be necessary.

The Centre for Disease Control and Prevention (2009:2) puts forward that following the analysis of the data, findings must be reviewed to identify patterns, consider similarities and differences between responses from survey participants, and summarise the data findings using tables, charts and graphs. A common method to summarise findings according to Michael (2001:1), is a crosstabulation table. Crosstabulation refers to a combined frequency distribution of instances established on two or more categorical variables. Displaying a distribution of cases by their values on two or more variables is known as contingency table analysis and is another of the more commonly used analytic methods in the social sciences (Michael, 2001:1). White and Korotayev (2004:4) state that the joint frequency distribution can be analysed using the chi-square test to determine whether the variables are statistically independent or if they are associated.

For the quantitative part of the study the researcher worked with his supervisor and a statistician to confirm that the variables put forth were in line with the dearth of studies in the literature and that the hypothesis formulated could be tested in a way that could contribute to the body of literature on KM. In other words, the research sought to construct and test variables and a hypothesis that had been seldom considered by studies about KM in the public sector. Statistical Package for the Social Science (SPSS) software was used

to perform the analysis. Because the survey questionnaire was conducted online, the responses were automatically captured into an Excel spreadsheet as each was received. From the spreadsheet, the data were transferred into SPSS version 22. During this step, the variables were captured and redefined as necessary, and responses were codified. The appropriate measurements were also defined (nominal and scale). The data analysis procedure began by cleaning and screening the data. The total sample size included 229 participants. Fortunately, there were no missing values so the data cleaning was unproblematic. Screening the data included checking for errors and outliers.

The demographic profile of respondents was first displayed, followed by descriptive data analyses. Frequencies and percentages of each demographic variable were then displayed. The graphs and charts were built in Microsoft Excel. The next sections included public organisational characteristics and knowledge creation and sharing. Basic descriptive statistics were used to assess the number of participants (frequencies) and percentages of participants who said "Yes", "No" or "Don't know". Charts were also provided.

To provide more insight into the analysis, the researcher looked at the proportion of participants who said "yes" within some groups, (gender, education, working experience). The purpose was to ascertain if there was a statistically significant difference in the responses (from males versus females, for example), to the question: "Does the organisation give informal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?" Thereafter, a Chi-square test of independence was performed to explore the relationship between knowledge creation and sharing and some demographic variables. The Chi-square test of independence is a non-parametric test.

For the final stage of quantitative data analysis, responses from the two sections; namely, public organisational characteristics, and knowledge creation and sharing, were tested for significant statistical difference, again using the Chi-square test. The respective responses were aligned against each other in accordance with the theoretical framework and theory found in the literature. The findings from this final stage allowed the researcher to either fail to reject the null hypothesis or turn to the alternate hypothesis, both of which are noted in section 1.7. The results are presented and further discussed in chapter 4.

Data collection in a mixed methods research study requires particularised rigour for the qualitative and quantitative components of the research design.

3.7 Rigour in mixed methods studies

This section examines measures taken to ensure reliability and validity in mixed methods research design. Reliability and validity take on different meanings in qualitative and quantitative studies as discussed in sections 3.7.1 and 3.7.2.

3.7.1 Rigour in qualitative research

As to qualitative studies, Moalusi (2012:61) refers to Lincoln and Guba (1985) who articulate that qualitative research should be measured against four criteria to ensure its trustworthiness. These are credibility, transferability, reproducibility and confirmability.

Credibility refers to the degree to which the results are a true reflection of the events that happened. Curtin and Fossey (2007:88) argue that a research enquiry is trustworthy when it faithfully represents clarifications and portrayals of human familiarity with the phenomena under study. The question becomes whether those individuals who share that same familiarity would instantaneously recognise the findings adduced as credible. The researcher can ensure credibility by firstly, recording the actual interviews on a digital recorder and then ensuring that all the categories and codes can be traced back to the transcribed interviews (Moalusi, 2012:62). Another significant approach is to devote a lengthy time period with respondents. This is referred to as prolonged engagement. This enables the investigator to assess viewpoints and permits the respondents to become familiar with the investigator and vice versa. This approach enriches the study's results by detection of concealed facts and intimate familiarity (Curtin & Fossey, 2007:90). The researcher may also verify the findings with the participants (Moalusi, 2012:62). To further ensure credibility of this study the researcher recorded the interviews, with the full consent of the respondents. The researcher also kept a field journal to take note of what was deemed relevant and important for the study. In addition, several seminars on conducting research were attended and journals articles critiqued to ensure appropriate standardised interview techniques were utilised. Triangulation was also performed on interviews, surveys, observations and documentary evidence used for this study as shown in section 4.6.

Transferability refers to whether the research will be relevant in another similar context, situation or group (Moalusi, 2012:61). When findings of a research study are relevant in a similar context external to the study area then it meets the criterion for transferability. This extent to which findings are transferable is determined by the level of similarity or degree of relevance between the two contexts. The person who wants to transfer the research findings of a study to another populace or set of circumstances is more responsible for transferability than the researcher of the original study (Curtin & Fossey, 2007:90). To ensure transferability the researcher can sufficiently gather comprehensive explanations of information and may also use purposive sampling which further increases trustworthiness (Lucas, 2012:58). Another approach utilised to deal with issues of transferability in the selection of a sample is to use a panel of judges

to assist one to select respondents' representation of those with knowledge of the phenomenon being studied. This is called a nominated sample. A comparison of the characteristics of the respondents and the demographics of the populace being examined may be used. Respondents are chosen to seal in the openings in the profile, as fieldwork is executed (Curtin & Fossey, 2007:89). Transferability is achieved when readers feel as though the story of the research overlaps with their own situation and they intuitively transfer the research findings to their own actions. To allow for transferability of this study, a dense description of all processes and procedures was conducted and purposive sampling was used as prescribed by Lucas (2012:58). In other words, whether findings from this study are transferable to another South African municipality depends on at least two factors. First, is the context of the other municipality similar to eThekwini municipality in relevant aspects? Second, the ultimate determination of transferability rests with decision-making on the part of those seeking to implement recommendations that emanated from findings of the original research to another municipality.

Another criterion of rigour is reproducibility and this refers to the extent to which the study will be able to reproduce the same results in a different context (Moalusi, 2012:61). Curtin and Fossey (2007:90) however, argue that the structure of an experimental design is contradictory to the unstructured and often spontaneous strategies of qualitative research. Thus, variability is expected in qualitative research. Explainable sources of variability might include increasing insight on the part of the researcher, respondent or researcher fatigue, or changes in the respondent's life situation relative to study phenomena. To address the issue of reproducibility, the exact methods of data gathering, analysis, and interpretation in qualitative research must be described. A dense description of methods is paramount to providing information as to how repeatable the study might be or how unique the situation is (Curtin & Fossey, 2007:91). In this study, to help facilitate reproducibility, code-recode procedure and triangulation were administered and a dense description of research methods was presented. Peer examination was also conducted, where fellow students in the same field and level of study were given the opportunity to read, comment and provide input with regard to research tools, methods and the study as a whole.

The final criterion is that of confirmability, which refers to whether the research findings are a result of the study or whether they are a reflection of the researcher's own bias (Moalusi, 2012:61). Confirmability is the criterion of neutrality and this is achieved when truth value and applicability are established (Curtin & Fossey, 2007:93). To improve confirmability, the researcher must keep all research notes and raw data (Lucas, 2012:58). One may also triangulate multiple methods, data sources, and theoretical perspectives to test the strength of the researcher's ideas. One may also employ a team of researchers familiar with qualitative methods as opposed to a single researcher (Curtin & Fossey, 2007:93). To ensure confirmability

of this study multiple data sources were triangulated and all data collected from the field, including field notes, have been stored away as per the prescribed time and procedure.

Particular strategies can be used through the research process to increase the value of qualitative projects. Certain strategies need to be formulated at the study design stage, while others are initiated during data collection and after data is interpreted (Curtin & Fossey, 2007:94). This discussion has detailed only a few of the various strategies available to the researcher. A summary of the major strategies can be found in table 3.4 below.

Table 3-4: Summary of Strategies to Achieve Trustworthiness Measurement Criteria

Criteria	Strategy
Credibility	Prolonged and varied field experience
	Recording the actual interviews
	Time sampling
	Reflexivity (field journal)
	Triangulation
	Member checking
	Peer examination
	Interview technique
	Establishing authority of researcher
	Structural coherence
	Referential adequacy
Transferability	Nominated sample
	Comparison of sample to demographic data
	Time sample
	Dense description
Reproducibility	Dependability audit
	Dense description of research methods
	Stepwise replication
	Triangulation
	Peer examination
	Code-recode procedure

Confirmability	Confirmability audit
	Triangulation
	Reflexivity

(Adapted by researcher from: Curtin and Fossey, 2007 & Moalusi, 2012)

Lucas (2012:58) argues that qualitative research is valid insofar as it is useful and worthwhile in assisting the researcher, participants, and others to gain a deeper insight and understanding of the phenomenon being studied in its real life context.

3.7.2 Rigour in quantitative research

In contrast to qualitative research, quantitative research strives to present valid and reliable research findings in different ways. Reliability in quantitative research is the extent to which measurements are repeatable when different persons perform the measurements on different occasions, under different conditions, with supposedly alternative instruments that measure the same phenomenon (Drost, 2011:106). Typical methods to estimate test reliability in behavioural research are test-retest reliability, alternative forms, split-halves, and inter-rater reliability as discussed by Drost (2011:108), Gabrenya (2003:1) and Lavrakas (2008:834). However these were not used in this study as the strategies applied were able to address all issues of validity and reliability.

There are three main concerns in reliability testing; namely, equivalence, stability over time, and internal consistency. Internal consistency concerns the reliability of the test components. It measures consistency within the instrument and questions how well a set of items measures a particular behaviour or characteristic within the test (Drost, 2011:111). Internal consistency reliability is measured using special types of correlation coefficients termed Cronbach's Alpha and the Kuder-Richardson Coefficient (Gabrenya, 2003:3). For a test to be internally consistent, estimates of reliability are based on the average inter-correlations among all the single items within a test. The most popular method of testing for internal consistency in the behavioural sciences is coefficient alpha (Drost, 2011:111). When researchers make new tests and examine aspects of the test such as the internal consistency reliability of items, the process is called item analysis (Gabrenya, 2003:3). If coefficient alpha proves to be very low, either the test is too short or the items have very little in common. Coeffient alpha is useful once the existence of a single factor or construct has been determined (Drost, 2011:112).

Reliability can be improved by writing items clearly, making test instructions easily understandable, and training the raters effectively by making the rules for scoring as explicit as possible. The principal method to make tests more reliable is to make them longer, thus adding more items (Drost, 2011:113). A satisfactory level of reliability depends on how a measure is used. The standard is taken from Nunnally (1978) found

in Drost (2011: 106), who suggests that in the early stages of research on predictor tests or hypothesised measures of a construct, reliabilities of 0.70 or higher will be sufficient. On the other hand, in applied settings, where important decisions are made with respect to specific test scores, Nunnally (1978) recommends that a reliability of at least 0.90 is desirable, because a great deal depends on the exact score made by a person on a test (Drost, 2011:114). Reliability is that part of a measure that is free of purely random error and that nothing in the description of reliability requires that the measure be valid thus it is possible to have a very reliable measure that is not valid (Drost, 2011:107). Reliability is a necessary but not a sufficient condition for validity. For this study the research proposal was submitted to a professional statistician to test for internal consistency and advice on validity issues. Items were clearly written and instructions clarified to ensure reliability.

Validity is concerned with the meaningfulness of research components and refers to the extent to which a questionnaire or test measures what it is supposed to measure (Drost, 2011:114). Generally, validity is used in two contexts: evaluating the quality of a measurement instrument or method, and evaluating the quality of a research study (Gabrenya, 2003:1). There are several measures of validity. Internal and external validity relate to the overall study design; while content validity, criterion validity and construct validity assess the validity of data collection tools.

Internal validity relates to the extent to which the design of a research study is a good test of the hypothesis or is appropriate for the research question (Twycross & Shields, 2004:28). Internal validity is achieved when the operationalisation of the independent variable has construct validity. This is to say, operationalization of the independent variable was done correctly and means what the theory says it should mean. The operationalisation of the dependent variable has construct validity if the independent variable is clearly responsible for the observed change in the dependent variable and the dependent variable's relationship to the independent variable cannot be explained in some other way (Gabrenya, 2003:4).

External validity relates to whether or not research findings can be generalised beyond the immediate study sample and setting (Twycross & Shields, 2004:28). External validity of a study or relationships between variables implies the ability to generalise to other persons, settings, and times. Generalising to well-explained target populations should be clearly differentiated from generalising across populations (Drost, 2011:120). A valid quantitative research study should be, generalisable to other similar target populations, measures, times, and places provided that the sample used is sufficient. This is because quantitative research is undertaken to build and test theories and models; a quantitative study that works only with a certain kind of sample and one way of operationalising each construct is not very useful when it comes to generalisation

(Gabrenya, 2003:9). In this study, for example, the constructs of knowledge sharing and knowledge creation were operationalised in more than one way.

Content validity assesses whether or not a tool appears to others to be measuring what it claims to measure (Twycross & Shields, 2004:28). For most concepts in the social sciences, no consensus exists on theoretical definitions. Because the domain of content is ambiguous, content validity is a means of ensuring that indicators tap the meaning of a concept as defined by the researcher (Drost, 2011:118). Face validity is a simple form of content validity where the researcher asks a few people to check whether the tool covers all areas. A more rigorous way to assess content validity is to enlist recognised experts in the area to give their opinion on the validity of the tool (Twycross & Shields, 2004:28).

Another way to judge the validity of a measure is to assess whether it succeeds in predicting something with which it ought to be related, termed a criterion. Thus, the validity of a measure can be assessed by how well it predicts this criterion (Grabrenya, 2003:3). Criterion validity is the degree of correspondence between a test measure and one or more external criteria, usually measured by their correlation (Drost, 2011:118). Concurrent and predictive validity are both measures of criterion validity. Concurrent validity uses an already existing and well-accepted measure against which the new measure can be compared. Predictive validity measures the extent to which a tool can predict a future event of interest (Twycross & Shields, 2004:28). Criterion validity is usually measured using a correlation coefficient and when the correlation is high, the tool can be considered valid (Twycross & Shields, 2004:28). To ensure content and criterion validity the research tools in this study were reviewed by fellow master's candidate colleagues in order for them to assess if the questions were clear enough and whether the line of questioning would measure what it was designed to measure. In addition to review of data collection tools by the researcher's supervisor, the research tools were submitted to and approved by a professional statistician in terms of content and criterion validity.

Of all types of measurement validity, construct validity is arguably the most important. A construct is a theoretical concept whose existence means something in the context of a hypothesis or theory (Gabrenya, 2003:2). Construct validity refers to how well the researcher translated or transformed a concept, idea, or behaviour into a functioning and operating reality (Drost, 2011:116). Evidence of construct validity can be provided by comparing the results obtained with the results obtained using other tests, other related characteristics of the individual, or factors in the individual's environment which would be expected to affect test performance. When the correlation coefficient is high, the tool can be considered valid (Twycross & Shields, 2004:28). Toward this end, variables for this study were selected based on the literature review conducted by the researcher. From this selection, both a broad and narrow theoretical framework were

formed through the convergence of literature. The narrow theoretical framework was adopted from the study. The variables employed resulted in a number of statistically significant relationships as discussed in chapters 4 and 5.

3.8 Ethical considerations

Ethical considerations were undertaken with regard to University protocols and in reference to participants in both the qualitative and quantitative components of the study. Permission to conduct the research study was received after a research proposal was submitted, reviewed and presented to the Research and Higher Degrees Committee of the School of Management, Information Technology and Governance, University of KwaZulu-Natal (UKZN). Written consent to conduct research within the eThekwini Metropolitan Municipality was obtained by the researcher after having presented his study to the municipality. Under the close guidance of the researcher's supervisor, the researcher created the survey questionnaire by adapting a similar line of questioning to that used in other studies on KM in relation to knowledge creation and sharing. The survey questionnaire was also reviewed by a qualified statistician to ensure that it measured the variables it was intended to measure. Both the survey questionnaire and interview questions were reviewed by the University of KwaZulu-Natal's Social Sciences and Humanities Ethical Committee and returned without any queries or concerns.

Fieldwork did not commence until clearance was issued by the Social Science and Humanities Research Ethics Committee. As to the qualitative component, to ensure that ethical considerations were met, all participants were contacted (telephonically and via emails), by the researcher prior to the interviews. This was done to clarify the intentions of the study, the expected outcomes of the study and to advise on the anticipated interview length. These factors were reiterated when the researcher met with each participant. Moreover, anonymity and confidentiality were assured to participants. It was also explained to participants that there would be no financial benefits for participating and they were free to withdraw from the study at any particular point without any repercussions. Interviewees signed consent forms in compliance with University requirements. All the interviews were recorded with the participant's written consent and were later transcribed to ensure better analysis. Both the recordings and the transcripts were kept safely for the prescribed time period to be examined at any point during the prescribed time. To access the online surveys respondents had to review and agree to awareness that study participation was voluntary, that they could withdraw from survey completion at any time and assurances were made that anonymity and confidentiality would be protected.

3.9 Study delimitations

This study's delimitations include the fact that as a result of ontological and epistemological outlooks adopted, the study focused on the social aspects of KM and largely ignored those aspects related to

information technology. While knowledge creation and sharing in relation to KM is a well-researched area elsewhere, very little research has been conducted in South African and other developmental contexts. Another delimitation of the study is that due to the use of purposive sampling, the researcher only seeded information from those who were interested in the subject matter, thus limiting the potential scope. A final delimitation is that the study was based on a metropolitan municipality; thus limiting its generalisability to district and local municipalities in the case of South Africa and all non-metropolitan municipalities internationally.

Yet another limitation is the fact that survey respondents could not be disaggregated by municipal units as this was not asked on the survey questionnaire. From the outset it was expected that the researcher would administer surveys during municipal meetings which would allow the researcher to indicate units in which municipal employees were employed. When this could not be achieved, municipal officials agreed that the survey could be placed on the municipal website. However, this limitation is not perceived as having detracted from the authenticity of the overall survey results since survey questionnaires were analysed viewing the municipality as a whole.

3.10 Chapter summary

This chapter discussed the research design and methods of this study. It presented foundations for a mixed methods research study, identified the usefulness of a case study strategy and highlighted different techniques and methods that the researcher used in order to collect, interpret and analyse data. Also included in the chapter was an explanation of how the research objectives and questions led to the research design and strategy. It was demonstrated that it is imperative for the researcher to have a clear understanding of the research design, strategy, methods and techniques that can be utilised in order to collect and analyse data consistent with the research problem under study. Chapter 4 presents and analyses the data collected in this study and extrapolates findings based on the literature review.

Chapter 4
Data Presentation, Analysis and Findings

4.1 Introduction

The purpose of this study is to determine the extent to which eThekwini Metropolitan Municipality is implementing KM practices, specifically with regard to knowledge creation and sharing. Knowledge creation and sharing are operationalised as codification strategy and/or personalisation strategy and organisational characteristics and organisational structure are taken into account. Two factors that affect knowledge transfer are considered, namely personal motivation and organisational structure as shown in the theoretical framework driving the study. The focus on KM is directed in an effort to begin to address the broader research problem of service delivery aims of South African local government. This chapter highlights the organisational context of eThekwini municipality with specific reference to the senior management structure. The manner in which the researcher undertook the data analysis in terms of aligning the research questions, objectives and hypotheses with elements of the data collection tools is delineated. This is followed by presentation and analysis of qualitative data including thematic outcomes. Similarly the next section presents and analyses quantitative data. Attention is given to statistically significant relationships that arose during the testing of the hypotheses. Both sections of data presentation and analysis are preceded by demographics of the respondent populations and data within each section are discussed in relation to the literature reviewed in chapter 2. Triangulation of data is discussed through a brief synergy of results and findings before this chapter is concluded with a summary of its contents.

4.2 EThekwini Metropolitan Municipality in context

On the east coast of South Africa is where eThekwini Metropolitan Municipality is located. It is in the province of KwaZulu-Natal (KZN), and after Gauteng province, has the second largest Gross Domestic Product (GDP) countrywide. The GDP growth rate rose by over five hundred percent from 1999 to 2005, (1% to 5.3%). Compared to other provinces KZN was the second highest contributor to the South African economy during 2005 at 16.4% at 2005 (SALGA, 2010:3). The 2005 statistics from the KZN Tourism Authority indicate that 1, 6 million international visitors and 11.6 million domestic visitors were received by the province. The result of this was 20.7 billion being injected into the provincial economy. Trade and transport infrastructure are key strengths of the province (SALGA, 2010 4).

EThekwini is the Zulu name for Durban. There has been much debate around the meaning of the name 'eThekwini', which some believe emanates from the word "*itheku*"; a term once used for a one-testicled animal or person which has since changed to "*ithekwa*". Others believe it is probably the locative form of "*itheku*" meaning bay or lagoon. While there are those who suggest that it was derived from the isiXhosa term "*iteko*", which means a meeting place. Others, in line with some of the above, believe it refers to the

testicles of a bull and was the traditional name given to the shape of Durban bay. The diverse perspectives on the origin of the name of eThekwini embody the multiplicity of ethnicities in the municipality. The Municipality encompasses an area of approximately 2297km2 and is home to, by most accounts, 3, 5 million individuals (SALGA, 2010:3). The African community (73.8%) is the bulk of the population with the Indian community (16.7%) having the second highest population in the province. This is followed by the white community (6.6%), the coloured community (2.5%) and others (0.4%). Persons in the age group of 15-34 years make up the bulk of the population. In relation to gender, the population is made up of 1,763,321 females and 1,679,040 males. The majority of the population is concentrated in the northern and central regions. The central region is the urban core of the municipality and is home to approximately 1, 3 million people (34%). It is followed by the northern region which is home to approximately 1, 15 million people (31%). The south accommodates approximately 730 000 people (18%) and the outer west region accommodates the least number of people with a total population of approximately 577 500 people (16.5%) (eThekwini Municipality, 2013:36).
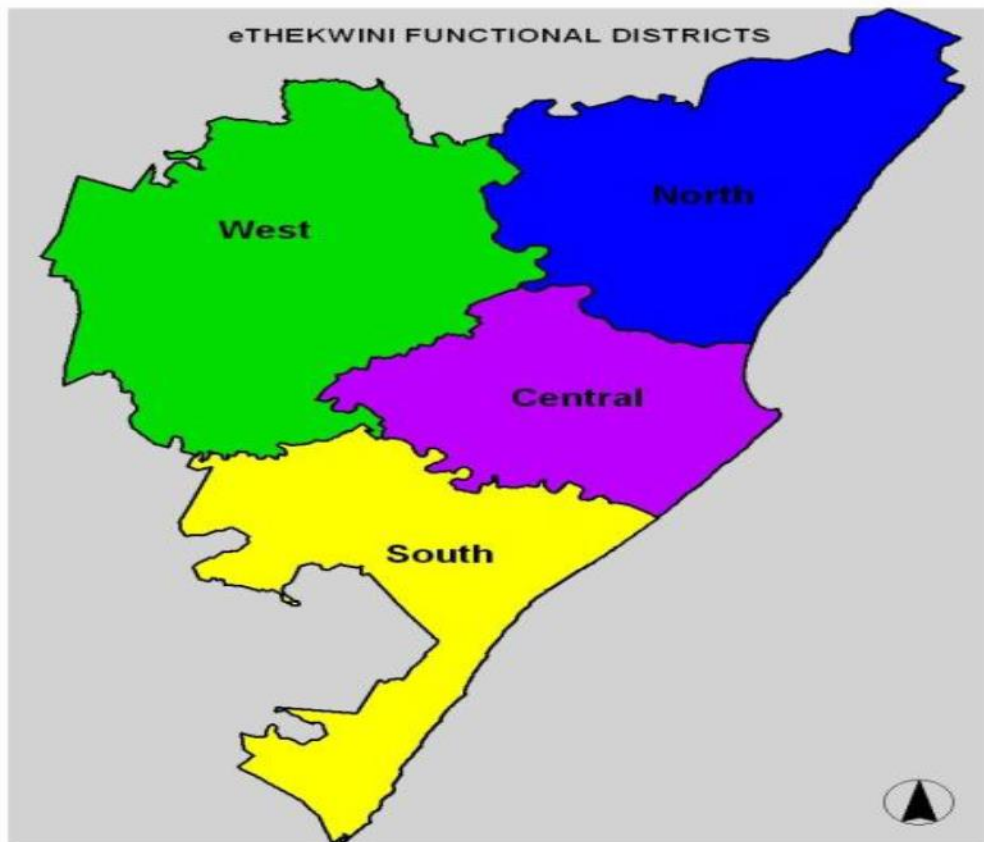
Figure 4-1: eThekwini Functional Districts
(Adapted from: eThekwini Municipality, 2013:25)

The municipality comprises various social orders confronted by differing social, financial and ecological challenges. As such it is obligated to serve a perpetually expanding populace while taking these challenges into account. The population of eThekwini comprises 33% of the population of KZN and 7% of the overall population of South Africa. Census 2011 records the population as 3,442,361 (Statistics South Africa, 2012: 5). The yearly population growth rate from 2006 to 2011 averaged 1.0% per annum, which is 0.1% higher than KZN on average, and equal to the national average. This rate shows a steady decrease from its 2006 levels, which was 1.1% per annum. In 2011, the population growth rate was 0.8% per annum (eThekwini Municipality, 2013:36).

In order to provide a scientific basis for assessing the residents' perceptions of their living conditions, the Corporate Policy Unit of the eThekwini Municipality undertakes a Municipal Services and Living Conditions Survey (MSLCS) annually. On average, 64% of the respondents were satisfied with the performance of the municipality in delivering services to the public over a three year period (from 2011 to 2014). During that time frame 36% of the respondents were not convinced of the quality of the municipal service delivery (eThekwini Municipality, 2015:27). Respondents were marginally satisfied with municipal service delivery in 2011-12. Their fragile satisfaction soon turned into dissatisfaction a year later. In 2013-14, respondents were still dissatisfied with service delivery.

A summary of the MSLCS three year trend findings on the problems experienced and dissatisfaction with services mentioned by respondents include: long waiting times and slow processing of forms at Municipal Offices; lack of opportunities for public consultation on Municipal Affairs; and poor quality, untimely information supplied to the public. The above mentioned issues amongst others could be improved with the implementation of KM systems. The discussion now shifts from the geographical and demographical context of eThekwini Municipality to a focus on the organisational context of eThekwini, concentrating on KM. Alignment between strategies, work procedures and processes is pertinent not only for KM, (as discussed earlier in chapter 2, section 2.6 of this study); it is also necessary for the achievement of organisational goals and visions. EThekwini Municipality (2015:376) states that it is important that an organisational structure capable of implementing the organisational strategy, is put in place. Figure 4-1 illustrates the organogram of eThekwini Municipality's senior management structure.
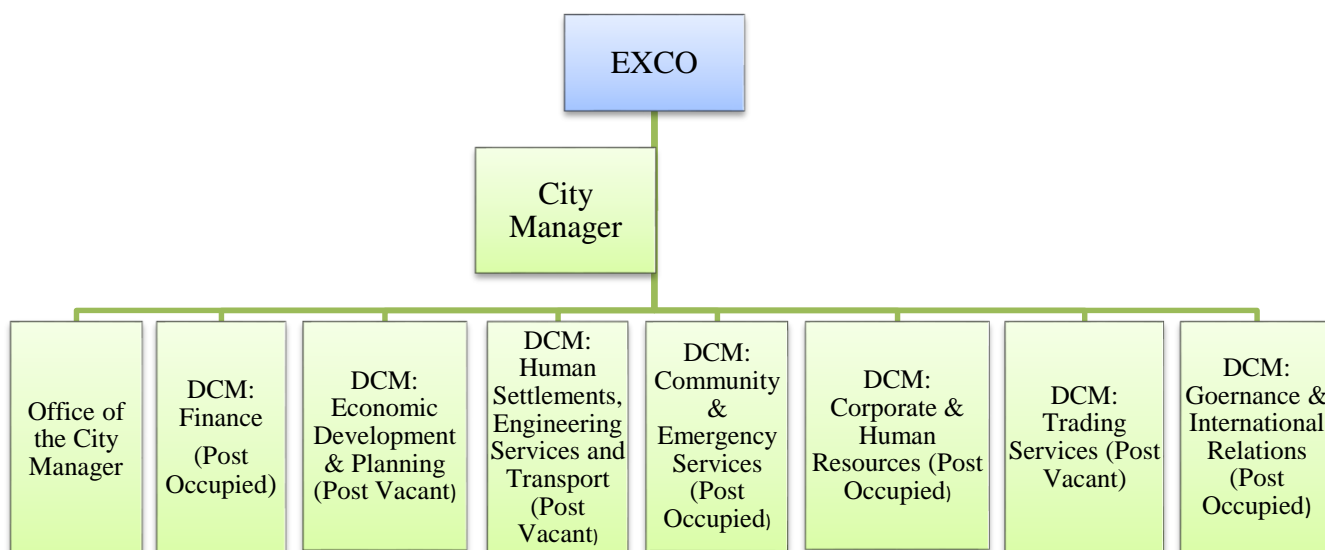
Figure 4-2: eThekwini Municipality Senior Management Structure
 (Source: eThekwini Municipality, 2015:377)

To address the challenges facing it and in order to achieve its organisational strategy, eThekwini Municipality has organised its delivery plan into eight separate but related plans. Plan 5 is about forging a platform for growth, empowerment and skills development with the goal of establishing eThekwini Municipality as a learning city that uses KM techniques and processes to enhance the skills base of the citizenry as well as share good practices with other municipalities (eThekwini Municipality, 2015:16).

KM was initiated in 2004-2005 when the eThekwini Municipality KM Working Group was formed. Its officials were recruited from different clusters, units and departments. The process was driven by the Geographic Information Systems (GIS) Department because of the need to compile information generated from individual silo departments into a centralised information repository. The department faced resistance to this process but nevertheless, the Database Management System (DMS) was implemented. Meanwhile, during 2005-2008, the Area Based Management Programme (ABMP) was established by the municipality to bring local government closer to the communities and KM initiatives took place in a decentralised manner during this period without the municipality's awareness that it was conducting KM. The ABMP exists in *Inanda, Ntuzuma, KwaMashu* and Cato Manor. As a result of this programme, eThekwini Municipality discovered that there were pockets of excellence in its administration: water and sanitation; climate change; revenue management; and the *Inanda, Ntuzuma, KwaMashu* (INK) urban renewal project, to mention just a few. The INK project was driven by a process of engagement through creating and sustaining networks of learning and sharing; learning that occurs not only through conversations and dialogue, but manifests in

different forms as well. KM and learning in the INK project was context specific. KM strategies implemented included: the Urban Renewal Programme (URP) open days, (where different URP's would meet and share their experiences); the eThekwini KM committee; the Imagine Durban programme; stakeholder forums, which involved Community Based Organisations (CBO's) and non-governmental organisations (NGO's); and the *Ulwazi* Indigenous Knowledge project, to mention just a few. These strategies also utilised interesting knowledge creation techniques such as, the Open Space Technology, World Café, the Power of Two and Communities of Practice.

In 2009, city management decided to form a consolidated scheme to bring these pockets of excellence together; thus, MILE was born. Management spent a full year liaising with KM experts and secured international interest and partnerships because of the work they were doing. In 2011, a KM framework was developed and the original KM working group was reviewed and a new MILE working group was established. A KM Steering Committee and Communities of Practice have since also been established to support KM within the municipality.

In eThekwini, KM is found in the Geographical Information and Policy Office (GIPO) under the Corporate Policy Department, which consists of four streams: long-term development planning; IDP; research and information; and MILE, which is founded on a KM premise (Kitchin, 2013:11). MILE is assembled in collaboration with academia, supporting learning networks, capacity enhancement, and municipal technical support. These are known as the four pillars on which MILE has its foundation for KM. Despite the fact that the eThekwini Municipality is celebrated for its involvement in local government KM, the focus of this involvement has been largely outward and not one of fostering an internal KM culture. Therefore, its main challenge remains the lack of KM culture within the municipality (Kitchin, 2013:11).

The eThekwini Municipality (2014:2) maintains that the municipality possesses KM elements and enablers which they must develop so that they become effective. The primary key element in the municipality is its people. This encompasses human resources, organisational culture, skills and motivation, and management and leadership. The second key element is systems, which includes IT. Finally, there are the processes which cover the organisational structure and strategy. The eThekwini Municipality focuses on its people as its core competitive advantage as it has highly knowledgeable employees in strategic positions and a relatively low employee turnover rate, especially at middle and lower management positions. Such a situation favours KM efforts and inspires learning while simultaneously allowing for the preservation of tacit knowledge and the transfer of explicit knowledge (eThekwini Municipality, 2014:16). However, it still remains unclear as to whether or not these knowledgeable employees of eThekwini Municipality are

actually sharing and storing their existing knowledge and creating new knowledge. Hence, the significance of this research.

Against the backdrop of the organisational context of eThekwini Municipality, several steps were followed to collect and analyse the data. Data collection was explained in detail in chapter 3, section 3.5. The early stages of data analysis are now discussed below.

4.3 Alignment of research questions, research objectives, hypotheses and theoretical framework

This section provides a synopsis of how the research questions, research objectives, hypotheses and theoretical framework all complement one another. Table 4-1 illustrates how particular interview and survey questionnaire questions assisted in achieving certain objectives and answering some of the research questions. Table 4-2 indicates the survey questionnaire questions and aligns them with the theoretical framework aspects on which, for the purpose of data collection, the survey questions were designed. Because the survey questions were designed to test the hypotheses, by aligning them with the theoretical framework, calibration between the hypotheses and theoretical framework was achieved and is outlined in this section. Triangulation, discussed in section 4.6 of this chapter, will synergise and synthesise the outcomes of the qualitative and quantitative data, which came about as a result of the proper alignment of research questions, research objectives, hypotheses and theoretical framework.

The alignment of these different components was the first step for both qualitative data analysis and quantitative data analysis, which are both discussed in sections 4.4 and 4.5 in this chapter. It was important to ensure that these were aligned, before one went out into the field, to confirm that the data collection tools would achieve what they were designed to achieve, which was to answer the research question and sub-questions, assist in achieving the desired objectives, and test the hypotheses.

Table 4-1: Alignment of research questions and research tools

Research Questions	Interview Questions	Survey Questions
To what extent is eThekwini Metropolitan Municipality implementing KM practices, specifically with regard to knowledge creation and sharing?	Please explain the current status of KM in your organisation?	Are knowledge exchanges documented for future reference?
	Please provide your perceptions of the strategy your organisation uses for KM?	Does your organisation capture and use knowledge obtained from other industry sources

		such as industrial associations, competitors, clients and suppliers?
		Does your organisation capture and use knowledge obtained from public research institutions including universities and government laboratories?
How does eThekwini Municipality facilitate KM?	Who is responsible for KM in your organisation?	Employee exchanges of information for solving problems are encouraged in the organisation?
	What type of characteristics does your unit have that makes it open to KM?	Are staff encouraged to visit other organisations (in the same field) and expected to give a detailed feedback?
	What type of characteristics does your unit have that suggests knowledge creation is desired?	Are staff and fellow employees rewarded for contributing to organisational learning, i.e. through regular feedbacks, employee recognition, etc.?
	With whom does your unit share knowledge?	Does the current hierarchical structure enable communication flow that facilitates learning?
		Does the organisation give formal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?
		Does the organisation give informal opportunities for sharing knowledge and

		experiences with fellow workers for mutual learning?
		Does your organisation encourage workers to participate in project teams with external experts?
		Does your organisation encourage interdepartmental sessions where lessons are learned?
		Does your organisation allow for social interaction among individuals within the organisation?
		Does your organisation dedicate resources to detecting and obtaining external knowledge and communicating it within your firm or organisation?
		Does the organisation provide an environment for improving the work knowledge of the employees?
		Are resources and facilities for individual development made available to all levels in the organisation?
How is knowledge shared within and between the different units and clusters?	Kindly state the methods for KM used in your organisation?	Are there well defined processes for the sharing of knowledge?

	How is knowledge shared in your unit?	Are there well defined processes for the creation of knowledge?
What techniques of knowledge creation and sharing can be used for wider application in the South African local government sphere?	Describe some helpful techniques in knowledge creation?	
	What are some helpful techniques to encourage knowledge sharing?	

(Please note blank cells are intentional)

Once the research questions and interview questions were aligned, the next step was to align the theoretical framework with the survey questions. The theoretical framework was also taken into consideration when designing the interview questions. With regards to the quantitative data, the survey questionnaire was designed in alignment with the theoretical framework driving the study in a manner that allowed testing of the hypotheses.

The hypotheses came about as a means to test whether organisational characteristics have an impact on knowledge creation and sharing. This needed to be tested due to the theoretical framework's prescription that certain conducive organisational characteristics must be present in order for knowledge creation and sharing to take place effectively. The broad theoretical framework provided several organisational characteristics, but for this study, only two were considered (as discussed in chapter 2, section 2.11).

To ensure that the survey questionnaire provided accurate data to test the hypotheses, the questions were aligned with the theoretical framework. This process formed part of rigour discussed in chapter 3, section 3.7. This alignment was also a crucial step of the data analysis process as the main themes of organisational characteristics and knowledge creation and sharing were drawn in accordance with the alignment of survey questions with the theoretical framework, which allowed for the testing of the hypotheses. The alignment of the theoretical framework and survey questions is depicted by table 4-2 below.

Table 4-2: Alignment of theoretical framework and survey questions

Personal Motivation	Organisational Structure	Personalisation Strategy	Codification Strategy
Does your organisation encourage workers to participate in project teams with external experts?	The current hierarchical structure enables communication flow that facilitates learning?	The organisation gives formal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?	Knowledge exchanges are documented for future reference?
Does your organisation encourage interdepartmental sessions where lessons are learned?	Resources and facilities for individual development are available to all levels in the organisation?	The organisation gives informal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?	Does your organisation capture and use knowledge obtained from other industry sources such as industrial associations, competitors, clients and suppliers?
Does your organisation allow for social interaction among individuals within the organisation?	There are well defined processes for sharing of knowledge?	Staff are encouraged to visit other organisations (in the same field) and expected to give a detailed feedback?	Does your organisation capture and use knowledge obtained from public research institutions including universities and government laboratories?
The organisation provides environment for improving work knowledge of the employees?	There are well defined processes for creation of knowledge?		
Staff and fellow employees are			

rewarded for contribution to organisational learning i.e. through regular feedbacks, employee recognition etc.?			
Employee exchanges of information for solving problems are encouraged in the organisation?			

(Please note blank cells are intentional)

In order for the researcher to test the hypotheses, the questions in Table 4–2 were grouped into two sections: questions that related to organisational characteristics; and those that related to knowledge creation and sharing as seen in this chapter section 4.5. Using the Chi-square test the researcher was able to test for statistically significant relationships between organisational characteristics and knowledge creation and sharing. The results of these tests are discussed in the section on quantitative data analysis which follows the next section on qualitative data analysis.

4.4 Qualitative data analysis

4.4.1 Demographics of respondents

This section explores the demographics of the interviewees employed in middle management at eThekwini Municipality. Respondents were selected from the six departments as discussed earlier in chapter 3, section 3.4. Interviews were conducted with 12 members of middle management according to the municipal-wide organogram as found in section 4.2. Although in their respective departmental organograms the respondents are considered senior management, from this point forward they will be referred to simply as management.

Table 4-3 shows that from the 12 interviews conducted with management, 6 (50.0%) of those were with male respondents and 6 (50.0%) were with female respondents.

Table 4-3: Gender Demographics

Gender of interviewees		
	Frequency	Percent
Male	6	50.0
Female	6	50.0
Total	12	100.0

As depicted in table 4-4, from the 12 interviews conducted, 8 (66.7%) were with Black respondents, 3 (25.0%) were with Coloured respondents and 1 (8.3%) interview was conducted with an Indian respondent.

Table 4-4: Race Demographics

Race of interviewees		
	Frequency	Percent
Black	8	66.7
Coloured	3	25.0
Indian	1	8.3
Total	12	100.0

With regards to the positions occupied by the respondents at eThekwini Metropolitan Municipality, Table 4-5 shows that 2 (16.7%) of the respondents were heads of their departments, 8 (66.7%) of the respondents were senior managers in their respective departments and 2 (16.7%) were managers in their relative departments.

Table 4-5: Post Demographics

Positions occupied by interviewees		
	Frequency	Percent
Head of Department	2	16.7
Senior Manager	8	66.7
Manager	2	16.7
Total	12	100.1

The section above briefly reviewed the demographics of the respondents in order to provide some insight into the group. The following section will expand on how this group of interviewees responded to the interview questions in relation to the objectives of this study. Please refer to Appendix H for respondent coding explanation which will be used in connection with quotes from respondents or paraphrasing from respondent quotes.

4.4.2 Status of Knowledge Managed in the eThekwini Metropolitan Municipality

Within the eThekwini Metropolitan Municipality, KM is considered a fairly new phenomenon; the majority of staff report only becoming aware of its existence as recently as 2009 and 2010. However, in the background, some staff members have been working with KM from as early as 2003. One respondent states "We had a KM working group which was chaired by Siyabonga Mqadi from the GIS unit. It was a KM working group and I sat there as a town planner and I was introduced to the concept of KM. At that time, focus was on systems and documentation management and not so much of how we see KM today" (SMI1). There were several ways in which staff were exposed to the notion of KM. For some it was from internal discussions at management level on how one ensures that skills continue to be transferred to others (JIS1P1). While for others, it was from international sources such as international conferences, discussions with international organisations, personal research or mentions of KM made by the World Bank and/or the United Nations (UN) (JIS1P1, GLH1P1, MSD1P1 & DOD1P1).

Respondents report that KM within eThekwini Metropolitan Municipality is in a developmental phase. There is currently no policy on KM within the city. However this is true of all cities in the country, municipally and at provincial and national government levels (FMI3, DOD3, MSD3, SMI3 ROD3, LIS3 & KPE3). In the absence of a KM policy, departments are turning to internal policies in an effort to create,

organise, share and store knowledge. For example; the security policy that relates to IT, best practices, KM related programs such as the *Ulwazi* Programme, and creative writing programmes.

According to respondents, the strategy intended to guide how knowledge is managed by the city is under review. Departments are presently using different strategies to manage their knowledge, while MILE is tasked with managing the combined knowledge of all departments; that is, the city as a whole. There does not seem to be a consensus among respondents when it comes to KM strategy. One employee states, "I don't think we have even started working with KM as a discipline, I think we are focusing a lot on keeping data. I don't think it's the same as managing knowledge so I don't think we have gotten to a stage where we are actually practicing KM" (GLH2). Another claims that, "in this specific unit there isn't much activity of KM" (MSD2). While another argues, "it's fairly at an advanced stage and we have a unique way of how we define KM" (SMI2). Strategically one respondent argues that "the strategy for now is to use MILE which is not correct. I say it is not correct because it does not get the prominence it deserves. KM is a huge thing; you cannot just assign two people to do it in the municipality so that strategy is wrong for me as far as I know" (MSD9). Another states that "it's working, especially through MILE, a database has been created, a share point, which is a system that is being used where you information can be accessed" (DOD9). The significant differences of opinion evident in these response emphasise the need for a municipal-wide KM strategy; to identify the scope of what is required, what sort of tasks need to be undertaken, and possible methods with regard to approaching them. This would result in greater cohesion within the municipality as a whole, and lead to a more common understanding of KM practices.

Respondents indicate that structurally, MILE is responsible for ensuring that KM is entrenched within the municipality framework and wider social context (SMI2). However, there seems to be a consensus among top management that KM is not properly structured, endorsed and embedded in the municipality. They argue that it needs to be mainstreamed across all clusters, units and departments; structurally it is not catered for; and there is no structured approach (JIS2, FMI2, JIS4, DOD2 & MLH2). One respondent states that "KM has three components, there is people, systems and processes and MILE took a deliberate focus on people and we don't prioritize other things" (FMI8). However, it seems that within the departments the focus is on capturing and keeping data (GLH2, LIS2 & TLH2). The city has a Document Management System (DMS) which strives to archive and convert information to knowledge. Respondents argue that the DMS should be used as a proper tool to disseminate information throughout the municipality (JIS6 & GLH3). One respondent claims that "even when a system is documented where is the document located? If it's on your hard drive then who has access to it and when you leave you might take that with you. So those are the things we need to be fine-tuned" (JIS9).

There are various issues facing the city when it comes to KM. Respondents argue that although there is a framework, no one has adopted a particular methodology on KM so it does not have the full impact that it should (JIS10). The framework defines KM as creating knowledge, organising knowledge, sharing knowledge and storing knowledge; but it's not widely disseminated and people are not aware of the framework, therefore, there is a lot of work to be done around sharing it (SMI4). The various individual units are not aware of what the others are doing and there is no platform where knowledge and ideas can be shared. There is no instrument or mechanism for the city to do that at the moment (GLH9). There is still a lot of work to be done to formalise it, because within the organisation we have a culture of 'knowledge is power' which means that the more you keep your knowledge to yourself, the more you make yourself indispensable to the organisation (DOD7).

According to respondents, KM is not prioritised by the municipality because they do not see value in it (FMI7). The evidence of this is highlighted by the following statement: "According to the structure the custodian of knowledge in the city structure is the city manager. But the city manager has delegated that responsibility to the deputy city manager of HR and Corporate Services given the current institutional arrangement and the deputy city manager has sub-delegated that to the head of skills and the head of skills has sub-delegated that to MILE and the senior manager is Mr Moodley" (FMI11). This delegation of responsibility or so-called 'passing of the buck' is also visible within other departments as several respondents stated that there is no one responsible for KM within their departments or no one wanted to take it on (MSD11, LIS11, MLH11 & DOD11). There is thus somewhat of a consensus that for KM to be effective, it needs to be given direct support from top management. Many of the respondents are of the view that for KM to be successful, top management should be responsible for it and hence accountable for it; this in turn will lead to greater support for KM implementation among those in lower ranks (JIS5, MSD9, ROD11, JIS11 & MLH9).

Now that an understanding regarding the status of KM in the eThekwini Metropolitan Municipality has been provided, the next section will discuss the organisational characteristics related to knowledge creation and sharing that were identified by the respondents as currently existing in eThekwini. As discussed earlier in chapter 2, organisational characteristics may either support or hinder knowledge creation dependent on the alignment between the KM strategy adopted by the organisation and the organisational characteristics found in the organisation. The issue of alignment was also addressed by the broad and narrow theoretical frameworks as seen in section 2.11.

4.4.3 Organisational characteristics for knowledge creation and sharing
Some of the individual departments within the city exhibit certain organisational characteristics that support knowledge creation and sharing. However, no one department seems to display a plentiful number of such

characteristics. The characteristics in question as identified by respondents include: open leadership; a matrix based approach to functions; IT hardware to facilitate knowledge creation and sharing; formal and informal ways of learning and sharing; a culture engendering KM; constant interaction with other departments and within the organogram; minimal office politics; and progression (GLH12, FMI12, SMI12, JIS12, JIS16, DOD12, FMI13 & ROD12). While it seems unlikely for one department to have the capacity to possess all these characteristics, it is necessary for them to have a combination of as many as possible in order for knowledge creation and sharing to be conducted properly and fruitfully.

When discussing knowledge sharing there was consensus amongst respondents with regard to its importance but there were differing reasons given for this importance. One respondent describes KM as "fundamental, critical, most important, non-negotiable, has to be done" (SMI14). Knowledge sharing is seen as fundamentally important in the organisation for organisational continuity, sustainability and adding value to service delivery (GLH14, MSD 14 & LIS14). However, one respondent notably states that "I think we all should be doing it better and we should be doing it consistently" (JIS14). Some of the respondents also highlighted that knowledge sharing is not only important for the organisation, but it is also important for the individual, as well as the knowledge base itself. These respondents argue that if you do not share knowledge it will become obsolete; you have to share to stay abreast, and it is necessary for personal and professional growth (TLH14 & ROD14). DOD7 and NPE14 agree that there needs to be a shift from the current mind-set in which people believe the more knowledge you keep to yourself the more power you have. JIS6 states that "one problem of municipalities is silo mentality, whenever we seat in a meeting say with real estate and finance and so on it is adversarial often". This echoes the fact that each department does not necessarily know what the others are doing. Knowledge sharing would begin to diffuse the 'knowledge is power' mind-set and challenge the silo mentality.

It seems the most commonly used forms of knowledge creation and sharing currently in eThekwini are forum sessions, where a group of people engage on a topic. One respondent believes that "knowledge sharing is the best in terms of developing and creating knowledge" (ROD15). Knowledge creation is not only a crucial aspect of KM as whole, but also of knowledge sharing, and vice versa. One needs to constantly create new knowledge to share, but at the same time one needs to share knowledge to create knowledge. Many of the respondents argue for openness, constant interaction and sharing within the organisation in facilitating knowledge creation. This is currently done in several ways: allowing staff in lower ranks to speak freely at meetings; encouraging conference attendance to broaden employee experiences and knowledge bases; extracting tacit knowledge from employees and packaging it into training modules; using the knowledge employees have to acquire new knowledge through forum sessions for sharing and solving problems, training, mentoring and coaching; and conducting research (KPE12, DOD16,

DOD15, KPE15, NPE15, ROD15, JIS15, SMI15, MSD15 & LIS15). Another crucial component for creating knowledge is provision of a platform where people are able to share, interact and express themselves free of any dominant narratives (social classes). Social media is able to provide such a platform if used properly. Creative writing programs and competitions also offer such opportunities amongst other things (GLH16, GLH13, MLH13, GLH16 & DOD15).

Having discussed the organisational characteristics that currently exist in eThekwini, the next section will highlight the knowledge creation and sharing techniques of eThekwini, which may be adopted by other municipalities and government departments with similar characteristics to eThekwini.

4.4.4 Knowledge creation and sharing techniques for wider application

When managing knowledge, whether it be creating, organising, sharing or storing knowledge, there are certain approaches and techniques necessary for it to succeed. In order for the creation and sharing of knowledge to be a success, many of the respondents argue that the involvement of management is critical. They state that top management must be convinced of KM's importance so that they can drive it. KM needs to be placed in the office of the CEO or the city manager, in the case of municipalities. Senior management has to be responsible and accountable for it and it needs to be a structured department so that it can be taken seriously (JIS5, MSD9, ROD11, JIS11 & MLH9). In the eThekwini Metropolitan Municipality the existing Document Management System (DMS) is seen as a useful tool, which can be used throughout the municipality for sharing and disseminating information across the city easily, quickly and effortlessly (GLH3, JIS6 & GLH11). While KM has three equally important components; namely, people, systems and processes, eThekwini and MILE have taken a deliberate decision to focus on people and do not prioritise the other two aspects (FMI8). As such, eThekwini also needs to ensure that they have proper systems and clearly defined processes in place that enable employees to create and share knowledge effectively. There is also a call to make KM more enjoyable and exciting; the city needs to create incentives for employees to buy-in to the practice and a culture of sharing needs to be instilled (DOD9, DOD8 & JIS5).

The respondents also highlighted several techniques for managing knowledge. These include brown-bag sessions, learning exchanges, communities of practice, and awareness programs (FMI10, LIS5 & FMI18). Others are workplace skills, management courses, mentoring, coaching, training manuals, work-flow processes, and standard operating procedures (ROD2, DOD10 & JIS5). Quarterly feedbacks on projects take place and meetings are utilised as part of the day-to-day operations (GLH18, ROD9, DOD10, LIS18 & KPE18). Masterclasses, seminars, peer-to-peer learning exchanges, conferences, research symposiums and knowledge summits are the more structured techniques which are practised (KPE2, JIS6, FMI10, FMI18, & SMI18). Finally, publications, researching and documentation of innovative practices were highlighted as techniques also applied (GLH18, DOD18, MSD18, LIS9, MLH10 & SMI10).

This section has provided a discussion of the outcomes of the alignment process in terms of the interview questions posed to achieve the research objectives. The next section will discuss the themes that were identified in the findings during the process of data analysis as discussed in chapter 3, section 3.6. The themes discussed here are ones that the researcher was able to draw from the findings even though it was not his intention to uncover these particular themes as such. However, they are discussed in this study as it is felt they are relevant and significant to developing a KM body of knowledge in the South African context. Although discussed prior to the quantitative data analysis, the thematic outcomes below actually evolved after the quantitative data analysis was conducted in concurrence with the qualitative data.

4.4.5 Thematic outcomes
Theme 1: Political influences impact on knowledge creation and sharing

While most KM literature does not discuss the issue of the influence of politics, this is not an issue that can be ignored. Syed-Ikhsan and Rowland (2004:107) argue that in public organisations, political influences have a great impact on the creation of knowledge and that sometimes there are unwritten policies or directions that need to be followed. According to GLH13, for knowledge creation to thrive, platforms must be created where people can tell their own stories, as opposed regurgitating the dominant narratives driven by people that are of particular political alignment. FMI12 points out that an environment with minimal office politics supports knowledge creation and sharing more effectively than a politics-rich one. The impact that political influence can inflict on KM is exemplified by Buffalo City Municipality's KM strategy, which has political leadership as its main focus. According to Ferguson et al (2010:1799) the rationalist approach to KM conceives of knowledge as objective and universal, and as a technical entity that can be moved in a linear way unchanged from place to place. This approach separates the conception of knowledge from politics and context, which often engenders unproductive consequences. This generally leads to the rejection of KM as it is deemed ineffective. The debate regarding the nature of the relationship between politics and administration is ongoing but regardless of which position is supported, administrative staff, particularly in the South African context, will continue to face the challenge of political influences. Matrix 4-1 highlights how this theme germinated as it indicates the sources of the theme as well as the researcher's thought process. The data captured in the matrix coupled with literature on the subject matter lends weight to the discussion above.

Matrix 4-1: Political Influences Impact on Knowledge Creation and Sharing

Political Influences Impact on Knowledge Creation and Sharing		
Organisational Unit/ Department	Thematic Response	Relationship to Political Influences
Libraries and Heritage	Create a platform for people to tell their own stories as opposed to the dominant narratives driven by people that are of a particular political alignment (GLH13).	This suggests that all individuals should be allowed to share their views freely and honestly about whomever or whatever subject without fear of repercussions.
MILE	We have dedicated staff, visionaries, professionally run office and have less politics (FMI12).	This indicates that staff are focused on a single goal and on their administrative duties and do not let their allegiances interfere with their work.

Matrix 4-1 was developed from a broader matrix (see Appendix D). Data reduction forms part of the data analysis process, which was discussed earlier in chapter 3, section 3.6. Matrix 4-2, which captures the theme of the value of different views, also developed from the same data reduction process and its correlating broader matrix can also be viewed in Appendix D.

Theme 2: The value of different views

The value of different views is not, to the researcher's knowledge, a concept examined in any literature on knowledge creation and sharing. However, this notion was highlighted by several respondents in this study. According to JIS15, exposure to many different ideas is important and people must learn in a broad context with different views and ideas. It is only by opening the door to all suggestions then you can create knowledge (ROD15). People must be exposed to different ideas and ideologies through debates or even by getting national or international thought leaders to inspire people to learn and to share (SMI16 & JIS16).

Matrix 4-2: The Value of Different Views

The Value of Different Views		
Organisational Unit/Department	Thematic Response	Relationship to Different Views
IS Department	I think we have to be open, so exposure to lots of different ideas is important, make sure people go to conferences and are able to learn in a broad context with different views and ideas (JIS15).	This means that people from all walks of life in the organisation should be given the opportunity to gain from the experiences and knowledge of others within and outside the organisation. They should be exposed to different schools of thought, not as observers but as participants so that they too can share their views.
	Conferences, let people be trained, let people be exposed to different ideas and ideologies, have to debate and compete with other people like at master classes etc. (JIS16).	
Organisational Development and Change Management Unit	Knowledge sharing is the best in terms of developing and creating knowledge. Allow people in the lower ranks to speak freely at the meetings, opening the door to everyone with some suggestions then you can create knowledge (ROD15).	This refers to the notion that there is no such thing as a stupid question. Lower level employees' ideas should not be dismissed as they may be able to raise concerns that higher levels are not exposed to yet can have an effect on.
MILE	Another way is to have management seminars where you get a national or international thought leader, pay for them to come down and inspire people to learn and share (SMI16).	This speaks to the idea that listening and interacting with a specialist in a field may provoke thoughts and ideas one may not have even considered.

The discussion of the value of different views is based solely on the research findings, as captured in Matrix 4-2 on the previous page. This is due to the fact that the researcher did not come across any literature which discussed the same issue. Social learning, on the other hand, is a well-researched area in KM literature, and it was also one of the themes that emerged out of the data analysis and is therefore discussed below.

Theme 3: Social Learning

Post-rationalism emphasises knowing as the enactment of a practice in which actors engage, embedded in wider social relations beyond the cognitive contents of individuals' minds (Ferguson et al, 2010:1799). In line with the post-rationalism approach is the personalisation strategy, which stresses the role of social relationships and both individual and collective actions in KM (Nakano et al, 2013:292). The outlooks of the post-rationalist approach and personalisation strategy are supported in the findings of this study. JIS16 advocates that interaction between formal and informal ways of learning and sharing provide a richness of knowledge. Powell and Snellman (2004:200) contend that social arrangements enhance or impede knowledge creation and sharing. In the eThekwini Metropolitan Municipality, forum sessions, where people get to meet and interact, are widely utilised. Masterclasses, workshops, meetings, seminars and conferences are just a few examples of such social forum sessions (TLH15, KPE16 & SMI16). The importance of such sessions is supported by Lopez and Esteves (2011:89) who argue that knowledge is not simply data or information, but is rooted in human experience and social context.

Matrix 4-3: Social Learning

Social Learning		
Organisational Unit/Department	Thematic Response	Relationship to Social Learning
Organisational Development and Change Management Unit	Constant interaction with other departments across the municipality and also within our organogram which means that there is always information travelling up and down the structure itself that's why the structure is created (DOD12).	This refers to the flow of information internally within a department and between departments, not in the form of reports or submissions but through meetings and other forum sessions including basic tools such as phone calls and emails.
Libraries and Heritage Department	We have seminars that's where we create and share, we have conferences once every year, we have meetings and some meetings are about specifically knowledge creation (TLH15).	This speaks to forum sessions that allow for sharing of knowledge formally and informally over a cigarette or cup of coffee during breaks in the formal sessions.

Performance Management Unit	Besides masterclasses, there are a lot of workshops going on around the country and the most important thing is they must be relevant (KPE16).	This looks at less formal forum sessions such as workshops, which unlike expert-led masterclasses, allow for group sessions and activities where everyone shares and implements as they are learning.
MILE	We use brown-bag seminars to get people to share (SMI16).	This relates to the concept of people bringing lunch or putting money together to buy food and then discussing issues over a meal. Similar to private sector lunch or dinner meetings.
Skills Development Unit	Getting involved in organisations, interacting with other people, that is where you acquire the knowledge or by you getting involved in doing something that is how you develop or acquire knowledge (MSD15).	This is related to taking initiative to get involved in organisational proceedings and sitting on different committees where one meets with different kinds of people; the more one shares in good spirit the more one will learn.

The theme of social learning addresses the ontological outlook and epistemological framework of this study as discussed in chapter 1, section 1.4. The discussion of this theme is drawn from literature and research findings from this study, thus, adding to the body of knowledge. The overall data in relation to this issue is captured in Matrix 4-3. Organisational improvement is the final theme discussed in this section.

Theme 4: Organisational improvement

KM involves a conscious strategy for getting the right knowledge to the right people at the right time; and for helping people to share and put information into action in ways that improve organisational performance (Pinho et al. 2011:217). The view that KM can improve organisational performance is also shared by top management in eThekwini Metropolitan Municipality. GLH14 states that KM is crucial for organisational continuity. In support of this, MSD14 says that KM is a very good practice because for any organisation to sustain itself, it has to share knowledge; employees come and go so it is important for the unit or department

to ensure they document knowledge. JIS14 advocates that the more knowledgeable employees are, the better the organisation will be. Gaffoor and Cloete (2010:4) are of the view that KM can improve organisational performance by means of better quality output, innovation, productivity and efficiency. While Amayah (2013:454) argues that knowledge sharing is vital to organisational effectiveness. Matrix 4-4 highlights the sources from the research findings that support the above discussion.

Matrix 4-4: Organisational Improvement

Organisational Improvement		
Organisational Unit/Department	Thematic Response	Relationship to Organisational Improvement
Libraries and Heritage Department	It's important for organisational continuity, maintenance of the vision also for team building to ensure that we are all on the same page and appreciate the vision of the organisation (GLH14).	This looks at how knowledge sharing can foster stronger organisational bonds. If the left hand knows what the right is doing there is a feeling of parity and comradery, which propels members to achieve the goals that have been set for them.
Skills Development Unit	That's a very good thing because for any organisation to sustain itself it has to share knowledge (MSD14).	This speaks to how the sharing of knowledge will help the organisation remain competitive as they will always have up to date knowledge instead of holding on to old knowledge.
IS Department	I think it's very important, the more people that know the better the organisation is going to be. I think we all should be doing it better and we should be doing it consistently (JIS14).	This refers to everyone being on the same page with everything that is going on in the organisation. Strategies such as an organisation-wide newsletter keeps everybody in the loop and creates a sense of belonging and leads people to take ownership and pride in their work.

4.5 Quantitative data analysis

4.5.1 Demographics of respondents

This section explores the demographics of those who responded to the survey questionnaire on public sector KM, which was sent out to all eThekwini Metropolitan Municipality employees. For this study, an online survey questionnaire was sent out to eThekwini Metropolitan Municipality employees at all levels and within all divisions.

Table 4-6 below shows that the survey questionnaire yielded 229 complete responses. From the 229 complete responses, 124 (54.1%) of the respondents are males and 105 (45.9%) are females.

Table 4-6: Gender Demographics

Gender		
	Frequency	Percent
Male	124	54.1
Female	105	45.9
Total	229	100.0

As indicated by table 4-7 below, of the 229 complete responses, the majority, 77 (33.6%), hold postgraduate degrees or diplomas. 61 (26.6%) of the respondents hold undergraduate degrees; while the least number of respondents, 3 (1.3%), have less than a Matric or Grade 12. From the remaining respondents, 55 (24.0%) have a diploma and 16 (7.0%) have a Matric or Grade 12 as their highest qualification obtained.

Table 4-7: Educational Level Demographics

Education Level		
	Frequency	Percent
Less than Matric	3	1.3
Matric	16	7.0
Post Matric Certificate	17	7.4
Degree	61	26.6
Diploma	55	24.0
Postgraduate Degree/Diploma	77	33.6
Total	229	100.0

Table 4-8 below reveals the demographic breakdown with regard to the respondents' period of work experience at eThekwini Municipality. The highest portion of respondents, 153 (66.8%), have worked at the organisation in the range of 1 year and 6 months to 15 years and 2 months. The second largest range of years spent with the organisation is 15 years and 3 months to 28 years and 8 months as per 32 (14.0%) of the respondents. The lowest frequency is found with employees who have worked at eThekwini Municipality for more than 28 years and 9 months, with only 16 (7.0%) respondents. The second lowest range is 1 year and 5 months or less, which has 28 (12.2%) respondents. These figures are tabulated below.

Table 4-8: Work Experience Demographics

Number of years working for eThekwini Municipality (Binned)			
		Frequency	Percent
Valid	<= 1.5	28	12.2
	1.6 - 15.2	153	66.8
	15.3 - 28.8	32	14.0
	28.9+	16	7.0
	Total	229	100.0

Having outlined the demographics of the survey questionnaire respondents, in an attempt to share some insight into their social contexts, the following section will provide a description and analysis of their responses. The results from the analysis will allow for a discussion in relation to one of the objectives of the study and the testing of the hypotheses.

4.5.2 Organisational characteristics

The next section will look at the organisational characteristics of the eThekwini Metropolitan Municipality focusing on KM. Due to the frequency of figures, every effort has been made to structure this section in such a way that the discussion related to each figure occurs on the same page as the figure to which it refers.

When asked whether the current hierarchal structure at eThekwini Municipality enables a communication flow that facilitates learning, the following responses (of 229 total responses), were documented as represented in figure 4-2 below. 120 (52.4%) of the respondents answered yes, 80 (34.9%) said no and 29 (12.7%) indicated that they did not know. The responses of those who gave affirmative answers to the question were disaggregated by gender, educational level and the number of years they have worked for the municipality. The majority (31.8%) of those who affirmed that hierarchy enables a communication flow

that facilitates learning, are males. Most of those who responded 'yes' hold undergraduate qualifications (33.3%) and have been with the municipality between 1 year 6 months and 15 years 2 months (41.3%).

Gaffoor and Cloete (2010:4) indicate that organisational structure must promote communication across and within organisational boundaries, thus when deciding on a KM strategy, the organisation's structure must be realigned to facilitate the creation and sharing of knowledge throughout the organisation. In the case of eThekwini Metropolitan Municipality, its hierarchical structure already allows for this, according to 52.4% of the respondents. The percentages illustrated in all the pie charts below have been rounded off to the nearest whole number for ease of visual representation.
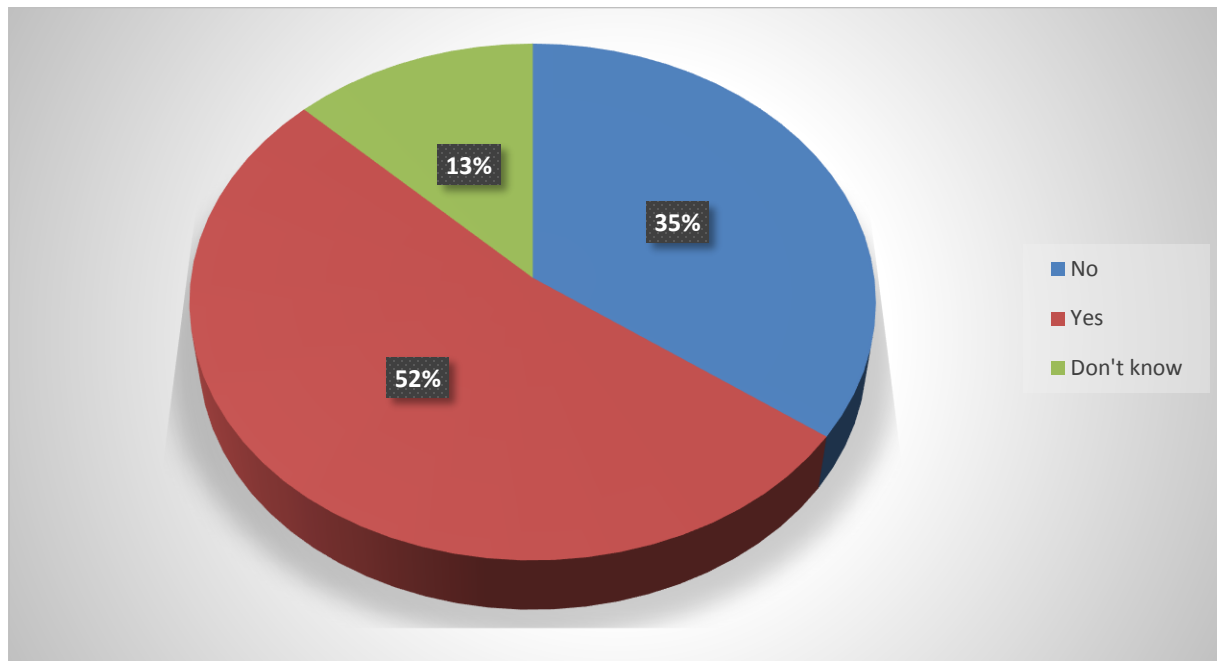
Figure 4-3: Does the current hierarchy structure enable communication flow that facilitates learning?

As indicated by figure 4-3 below, a majority of the respondents to the survey questionnaire, 118 (51.5%), indicated that eThekwini Metropolitan Municipality gives formal opportunities for sharing knowledge and experiences with fellow workers for mutual learning. However, 95 (41.5%) maintained it does not do so; while 16 (7%) did not know. In relation to informal opportunities for sharing knowledge and experiences

with fellow workers for mutual learning, as represented by figure 4-4 below, 116 (50.7%) respondents stated that informal opportunities are given to employees. 78 (34.1%) of the employees stated that informal opportunities are not given to them and 35 (15.3%) did not know. From the 234 confirmatory responses, 63.2% were made by males, 59.1% of the respondents have undergraduate degrees, and 72.6% have worked between 1 year 6 months and 15 years 2 months at the municipality.

In a case study of a student advisory organisation in Australia and New Zealand, Bosua and Venkitachalam (2013:10) found that organisational knowledge was often transferred mainly through informal social networks, which indicates the need to mobilise informal social networks to encourage knowledge transfer. Since eThekwini has both formal and informal opportunities for sharing knowledge, work procedures and processes should inform the choice of KM strategy emphasis. This will either be the personalisation or codification strategy, as indicated by the theoretical framework in chapter 2.
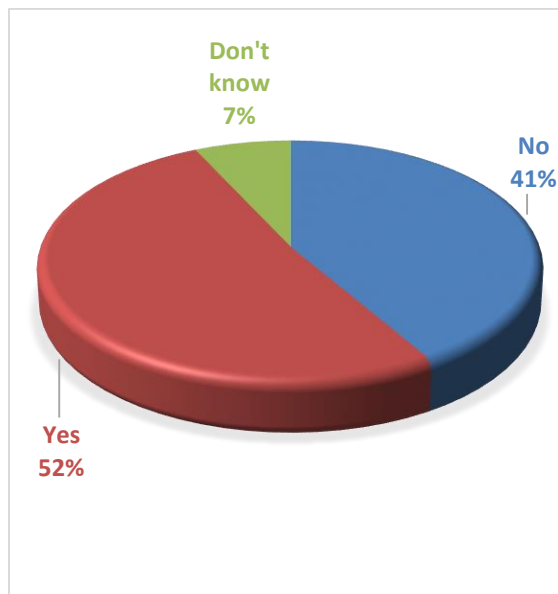
Figure 4-4: The organisation gives formal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?
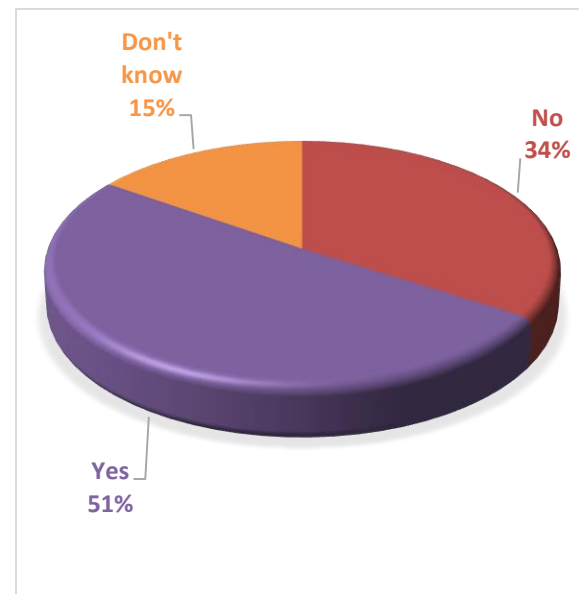
Figure 4-5: The organisation gives informal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?

When questioned as to whether eThekwini Municipality encourages workers to participate in project teams with external experts, figure 4-5 below indicates that 116 (50.7%) answered 'no', 67 (29.3%) said yes, while 46 (20.1%) stated that they did not know. Figure 4-6 below shows that of the 229 respondents, 116 (50.7%) indicated that the organisation does not encourage interdepartmental sessions where lessons are

learned. Only 79 (34.5%) stated that it does encourage such sessions while 34 (14.8%) did not know. When the assenting responses to these two questions were disaggregated by gender, educational level and working experience at eThekwini Metropolitan Municipality, it was found that 40.8% of those assenting are males, 31.5% have undergraduate qualifications and 44.8% have worked between 1 year 6 months and 15 years 2 months at eThekwini Municipality. External stakeholders afford an organisation an opportunity to bring in new knowledge. By transferring outside knowledge into the organisation and integrating it with the organisation's existing knowledge base, internal capabilities are improved (Lopez & Esteves, 2011:88). By eThekwini Municipality not taking up the opportunity to obtain outside information through project teams, the organisation is missing out on a lot of opportunities to grow and develop their knowledge base. This is a situation that needs to be rectified if the city it is to attain its goal of establishing eThekwini as a learning city that uses KM techniques and processes to enhance the skills base of the citizenry as well as share good practice with other municipalities. (Plan 5, as discussed in section 4.2). This also holds true for opportunities to learn from other departments within the municipality, as knowledge creation and sharing needs to take place both within and across organisational boundaries.
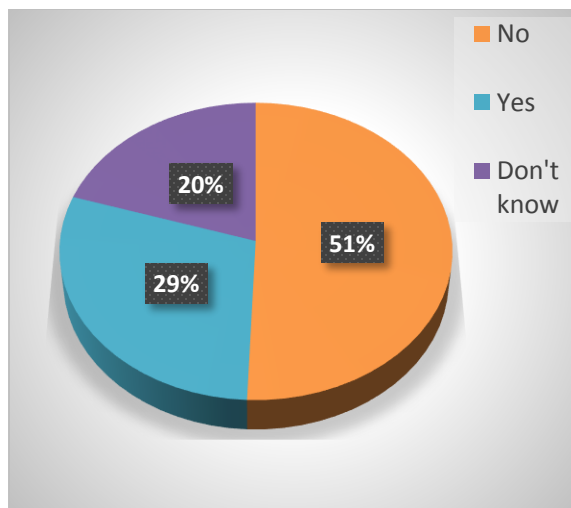
Figure 4-6: Does your organisation encourage workers to participate in project teams with external experts?
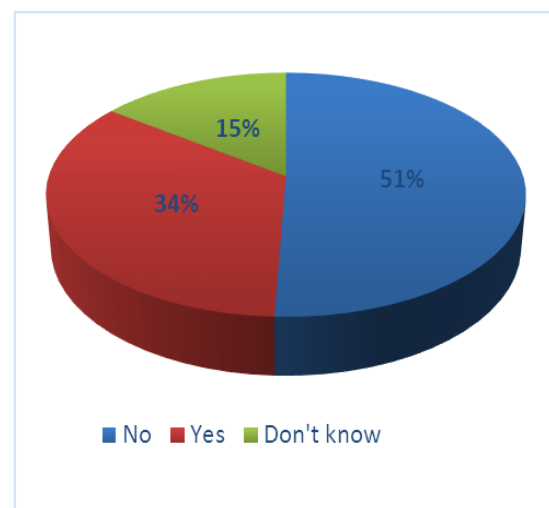
Figure 4-7: Does your organisation encourage interdepartmental sessions where lessons are learned?

The survey questionnaire also explored whether the eThekwini Metropolitan Municipality dedicates resources to detecting and obtaining external knowledge and communicating it within the organisation. As represented by the pie graph (figure 4-7) below, 87 (38.0%) of the respondents said it does not, 74 (32.3%) stated they did not know and 68 (29.7%) argued that it does dedicate resources. To attain more insight, all 'yes' responses were disaggregated by gender, educational levels and work experience. It was found that

the majority of the affirmative responses (17.4%) were made by females. With regard to educational levels, affirmative responses were mostly (18.0%) from those with undergraduate qualifications; and when it came to work experience, those having worked between 1 year 6 months and 15 years 2 months gave the most (22.9%) 'yes' responses.

Shan et al (2012:212) state that the role of top management is to formalise the organisation's values and vision and project them in a clear, visible and consistent manner. Thus support from top management gives high priority to processes and provides adequate resources. The fact that eThekwini does not currently appear to be dedicating resources to KM may be an indicator of lack of support for KM from top management in the organisation.
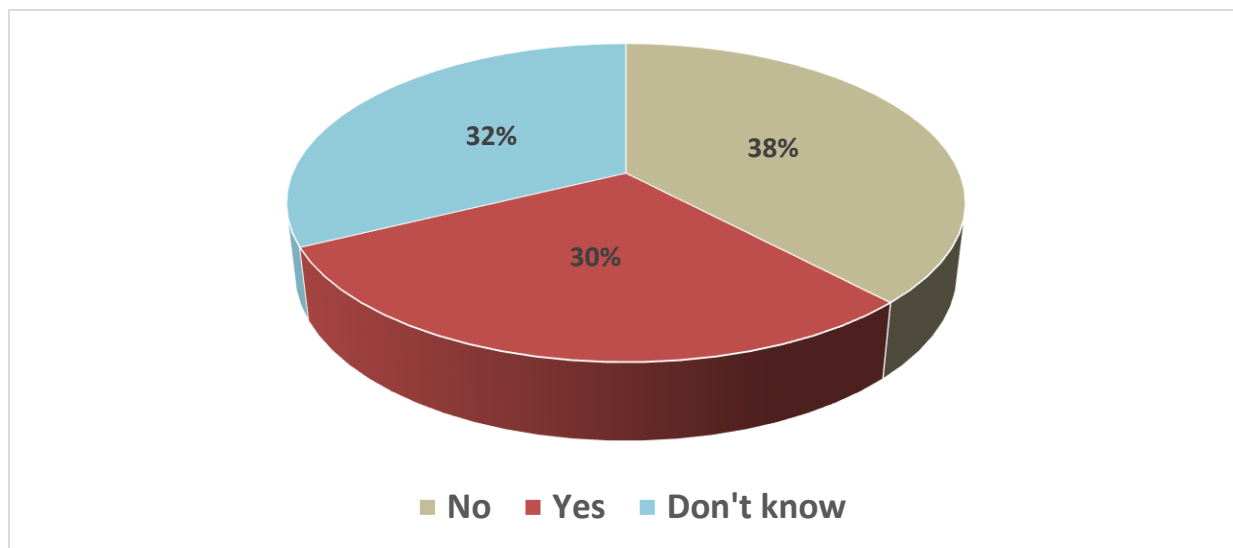
Figure 4-8: Does your organisation dedicate resources to detecting and obtaining external knowledge and communicating it within your firm or organisation?

When asked if eThekwini Metropolitan Municipality provides an environment for improving the work knowledge of its employees, figure 4-8 below illustrates that 139 (60.7%) answered yes, 71 (31.0) said no, and 19 (8.3) did not know. From those who responded 'yes', 37.8% are males, 33.8% have undergraduate qualifications and 46.3% have worked between 1 year 6 months and 15 years 2 months for the municipality.

Amayah (2013:457) points out that motivation is necessary for effective knowledge sharing and because some knowledge resides within individuals, it cannot be shared effectively if individuals are not motivated to share it. One reason individuals may be motivated to share knowledge is because they expect it to be advantageous to them.
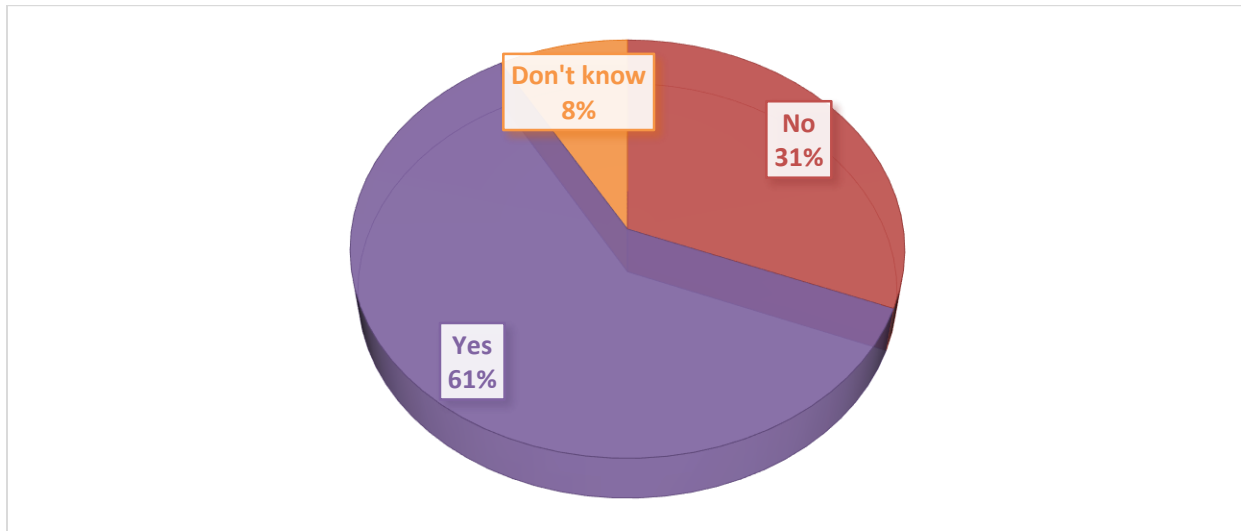
Figure 4-9: Does your organisation provide an environment for improving the work knowledge of the employees?

The provision of an environment that improves the work knowledge of employees is a step in the right direction. However, the municipality also needs to consider other factors that motivate individuals to share knowledge and ensure that they are also available in the organisation. The fact that resources and facilities for individual development are not available at all levels, as referenced in figure 4-9 on the following page, may have a negative impact on social/relational capital, which is the degree to which individuals are inclined to trust and cooperate with others (Pinho et al, 2012:231). Social capital impacts individual outcomes and can also impact variables at the collective level. Thus, eThekwini needs to rectify this situation and ensure parity within the organisation.

Finally, with regards to organisational characteristics, figure 4-9 below depicts that 109 (47.6%) respondents said that resources and facilities for individual development are not available to all levels in the organisation. On the other hand, 96 (41.9%) said they are available, while 24 (10.5%) did not know. The majority (25.9%) of those who affirmed are males. Again, from those who responded 'yes', 23.3% have undergraduate qualifications and most (29.4%) have between 1 year 6 months and 15 years 2 months working experience at eThekwini Metropolitan Municipality.
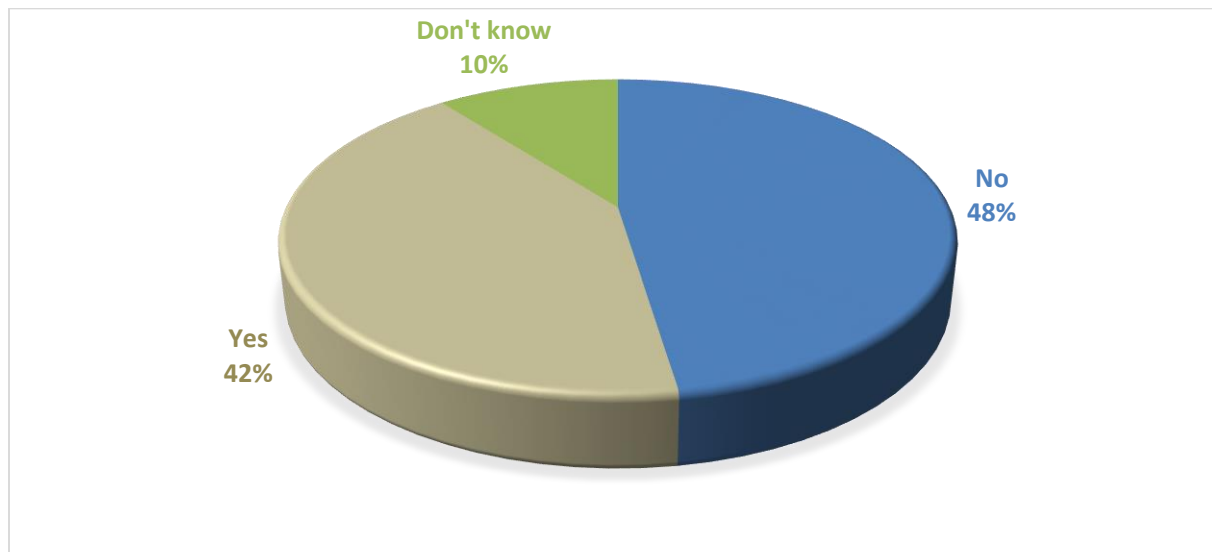
Figure 4-10: Are resources and facilities for individual development available to all levels in the organisation?

4.5.2 Knowledge creation and sharing

The next section is concerned with knowledge creation and sharing at eThekwini Metropolitan Municipality. As per the previous section 4.4.2, every effort has been made to include each figure and its related discussion on the same page for ease of reference and clarity of understanding.

As per figure 4-10 below, when asked if employees are rewarded for contributing to organisational learning - that is, through regular feedbacks, employee recognition etc. - 138 (60.3%) of the 229 respondents said no, 57 (24.9%) answered yes and 34 (14.8%) did not know. Of those that responded 'yes', the bulk (18.6%) are male, with most (16.3%) of those respondents holding undergraduate qualifications. It was also discovered that a large number (19.8%) of those who responded 'yes' have between 1 year 6 months and 15 years and 2 months experience at the municipality. This also holds true for those who responded affirmatively to whether there were well defined processes for sharing knowledge as well as for the creation of knowledge.

In a study conducted at Stellenbosch Municipality, Gaffoor and Cloete (2010:6) recommended that employees be rewarded and incentives be put in place for contributions to knowledge creation, sharing and management. They state that a sharing culture is critical to an effective KM strategy, thus an incentive structure should be put in place for employees' KM efforts. With no KM policy currently in place in eThekwini Municipality, a well-developed incentives structure may be the necessary tool to drive KM processes and engender a culture of KM.
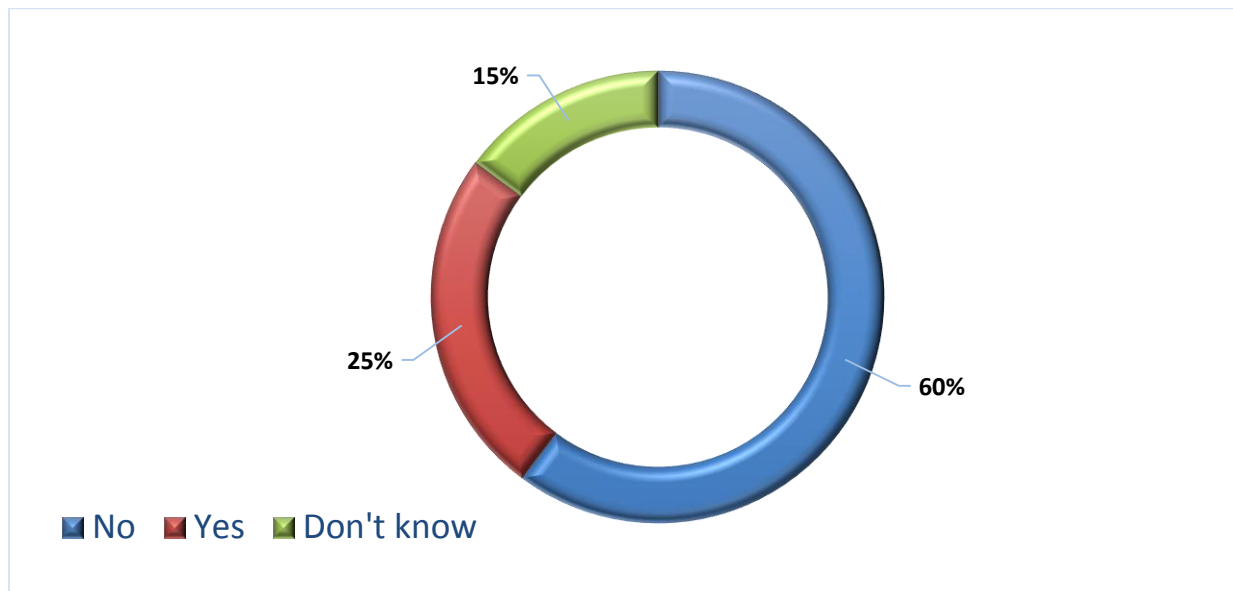
Figure 4-11: Are employees rewarded for contributing to organisational learning i.e. through regular feedback, employee recognition etc.?

With regard to whether there are well defined processes for the sharing of knowledge, figure 4-11 below (left) indicates that 128 respondents (55.9%) answered no, 70 respondents (30.6%) said yes and 31 respondents (13.5%) did not know. The respondents were then asked if there are well defined processes for the creation of knowledge and figure 4-12 below (right) shows that 114 (49.8%) responded 'no', 59 (25.8%) responded 'yes' and 56 (24.5%) did not know.

As we are in a knowledge economy, the creation and sharing of knowledge in an organisation has become a critical factor for the success and competitiveness of the organisation (Syed-Ikhsan & Rowland, 2004:95). It can therefore be considered crucial that the application of these processes be conducted regularly and uniformly. Thus, eThekwini Municipality needs to define how knowledge creation and sharing is to be undertaken in their organisation going forward.
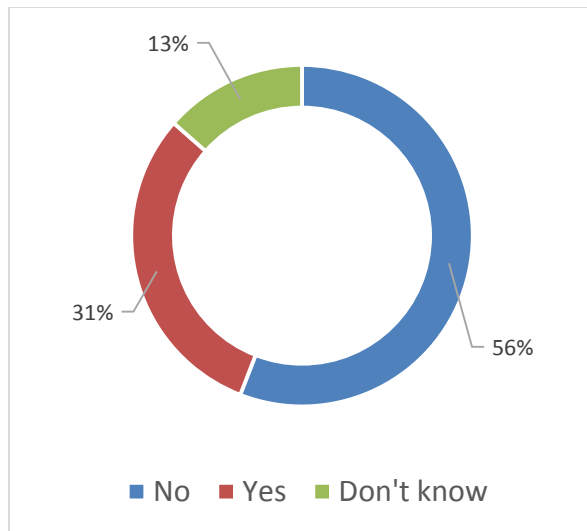
Figure 4-12: There are well defined processes for sharing of knowledge?
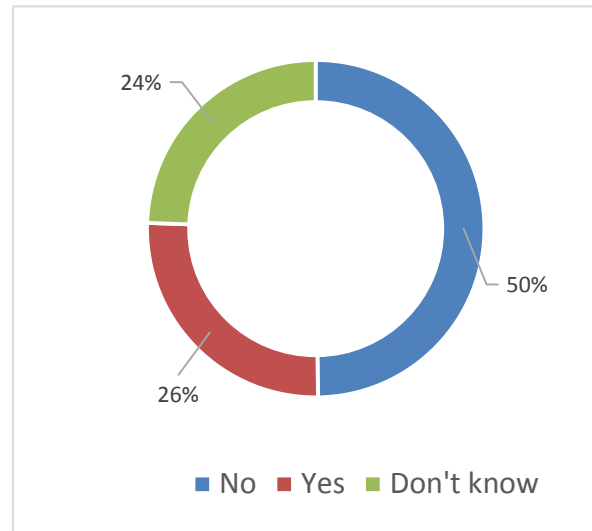
Figure 4-13: There are well defined processes for creation of knowledge?

When asked if staff are encouraged to visit other organisations (in the same field) and expected to give detailed feedback, figure 4-13 below indicates that 159 respondents (69.4%) said no, while 41 respondents (17.9%) answered yes and 29 respondents (12.7%) did not know. Of the few that responded 'yes', most (14.1%) are males. These are mainly (11.9%) respondents with postgraduate qualifications and most (14.1%) have worked between 1 year 6 months and 15 years 2 months at the municipality.

Internal and external networks play a key role in the definition and shifting of the organisational boundaries; and internal networks are formed by intra-organisational structures that support the knowledge acquisition process (Lopez & Estevez, 2011:87). As discussed earlier, the municipality's lack of willingness to encourage employees to learn and share externally, interdepartmentally and intra-organisationally will limit its possibilities and also make it difficult for the organisation to achieve the goals of Plan 5 and with that the proper implementation of their KM strategy.
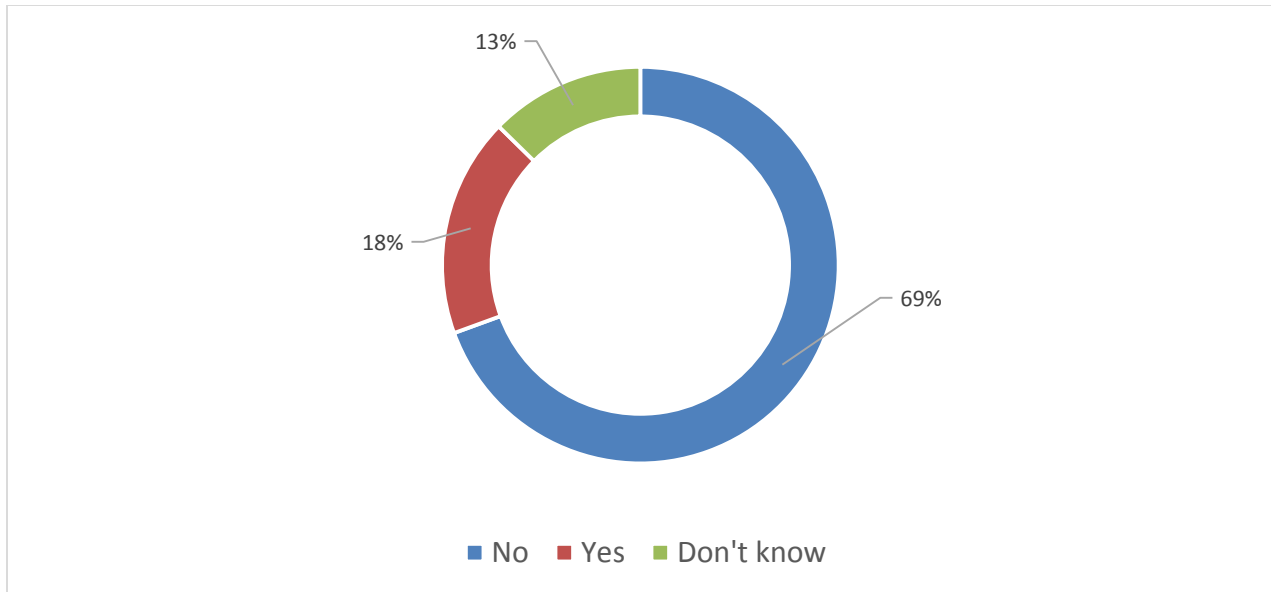
Figure 4-14: Staff are encouraged to visit other organisations (in the same field) and expected to give a detailed feedback?

Having been questioned as to whether knowledge exchanges are documented for future reference, figure 4-13 below shows that 92 (40.2%) responded 'no', 72 (31.4%) said yes and 65 (28.4%) did not know. The majority (24.9%) of those who affirmed are males. Again, from those employees who responded 'yes', most (19.8%) have undergraduate qualifications and most (26.6%) have between 1 year 6 months and 15 years 2 months working experience at eThekwini Metropolitan Municipality.

Documentation of knowledge is important when considering transferability of knowledge because according to Renzl (2008:216), documentation, or the lack of it, is not a mere technical problem that can be solved by information systems but is more about the willingness of the parties involved rather than just a matter of ability. Thus eThekwini Municipality need to go back and find out why knowledge exchanges are not being documented for future reference. For example, it could be an issue of trust, which can be seen in the broad theoretical framework in chapter 2 of this study as one of the factors that can affect KM and the implementation of its strategy. Renzl (2008:216) points out that in a trusting atmosphere, individuals are more willing to document knowledge.
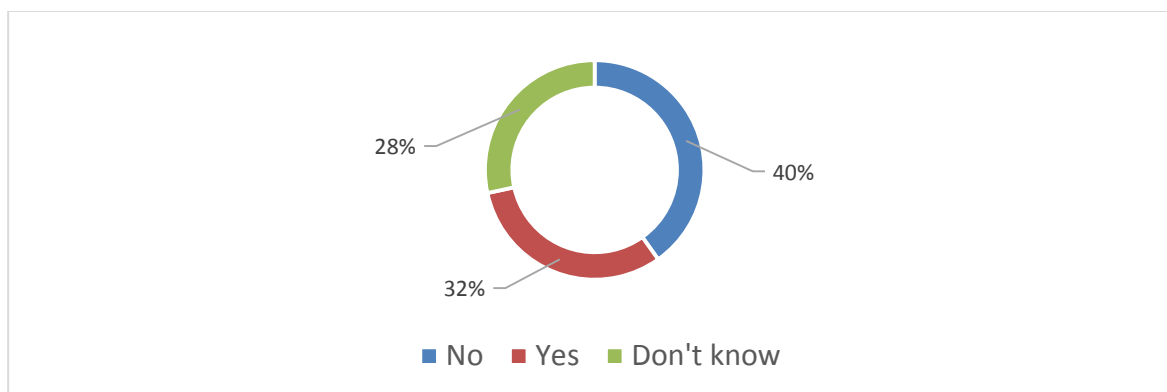
Figure 4-15: Knowledge exchanges are documented for future reference?

The respondents were asked "Does your organisation capture and use knowledge obtained from other industry sources such as industrial associations, competitors, clients and suppliers?" Figure 4-14 below (left) indicates that 81 (35.4%) did not know, 76 (33.2%) replied yes and 72 (31.4%) said no.

When asked if the organisation captures and uses knowledge obtained from public research institutions including universities and government laboratories, figure 4-15 below (right) shows that of the 229 respondents, 88 (38.4%) did not know, 83 (36.2%) said yes and 58 (25.3%) answered no. From the 159 people that responded to both these questions most (53.2%) are males and the bulk (43.5%) of them hold undergraduate qualifications. A high percentage (56.5%) of the affirmative respondents have between 1 year 6 months and 15 years 2 months experience working at eThekwini Metropolitan Municipality.
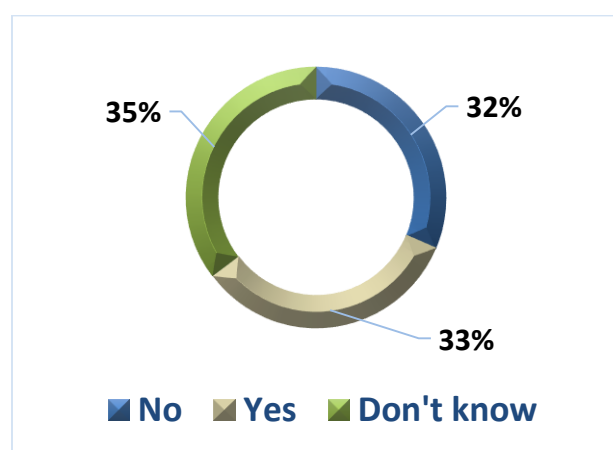
Figure 4-16: Does your organisation capture and use knowledge obtained from other industry sources such as industrial associations, competitors, clients and suppliers?
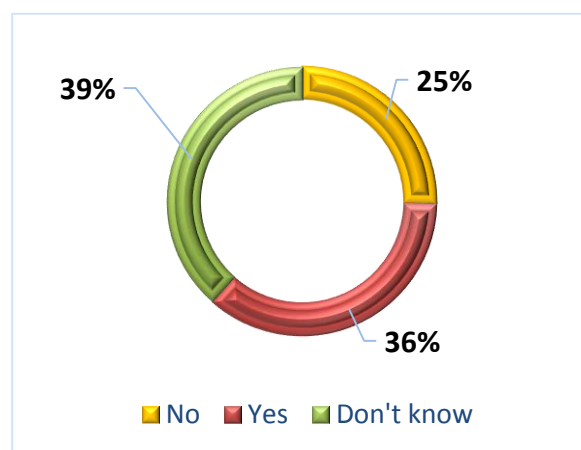
Figure 4-17: Does your organisation capture and use knowledge obtained from public research institutions including universities and government laboratories?

The next section will look at relationships between variables. As discussed above, external and internal networks and sources are crucial for organisational growth and continuity and this is an area which eThekwini Municipality must drastically improve on.

4.5.3 Relationship analysis

This section amalgamates the two previous sections. The previous sections divided the data into two separate notions: organisational characteristics; and knowledge creation and sharing. The discussions in the two prior sections were in relation to the first research objective; that of organisational composition and governance (discussed earlier in chapter 1, section 1.5). This section seeks to discover if there is a statistically significant relationship between the two notions, thereby testing the hypotheses. The Chi-square test for independence was utilised to explore the relationships between variables. The Chi-square test enables one to determine if variables are independent of each other. If the results show significant relationships between sub-variables, then one is able to reject the null hypothesis. As per the previous sections in this chapter, discussions and their related figures are included (where possible) on the same page for ease of reference and clarity.

Looking at the relationship between the current hierarchal structure (A) and defined processes for sharing of knowledge (B) it was found that there is a significant (P-value < 0.05) association. The Chi-square test for independence was used to explore the relationship between variable (A) and the associated variables 'there are well defined processes for sharing of knowledge' and 'there are well defined processes for creation of knowledge'. Table 4-9 summarises the test.

Table 4-9: Chi-square independence test summary

Variables	Chi-square	*P*-value	Phi
There are well defined processes for sharing of knowledge	46.967	.000	.453
There are well defined processes for Creation of knowledge	43.010	.000	.433

(See also Appendix F, for all other relationship summary tables).

To deepen the analysis, we look at the number of participants who said yes, no and don't know. Figure 4-17 below indicates the significant relationship between current hierarchy structures and defined processes for knowledge sharing (P-value < 0.05). This statistically significant relationship indicates that the

organisational structure of eThekwini will support processes for knowledge creation and knowledge sharing however, these still need to be defined. This means that in deciding upon a knowledge transfer strategy, the municipality may consider its structure as an enabling factor. This is illustrated by the theoretical framework in chapter 2. This relationship also signifies an organisational characteristic that stimulates knowledge creation and sharing, which is one of the objectives of the study. This also holds true for the relationship between current hierarchy structures and defined processes for knowledge creation discussed hereafter.
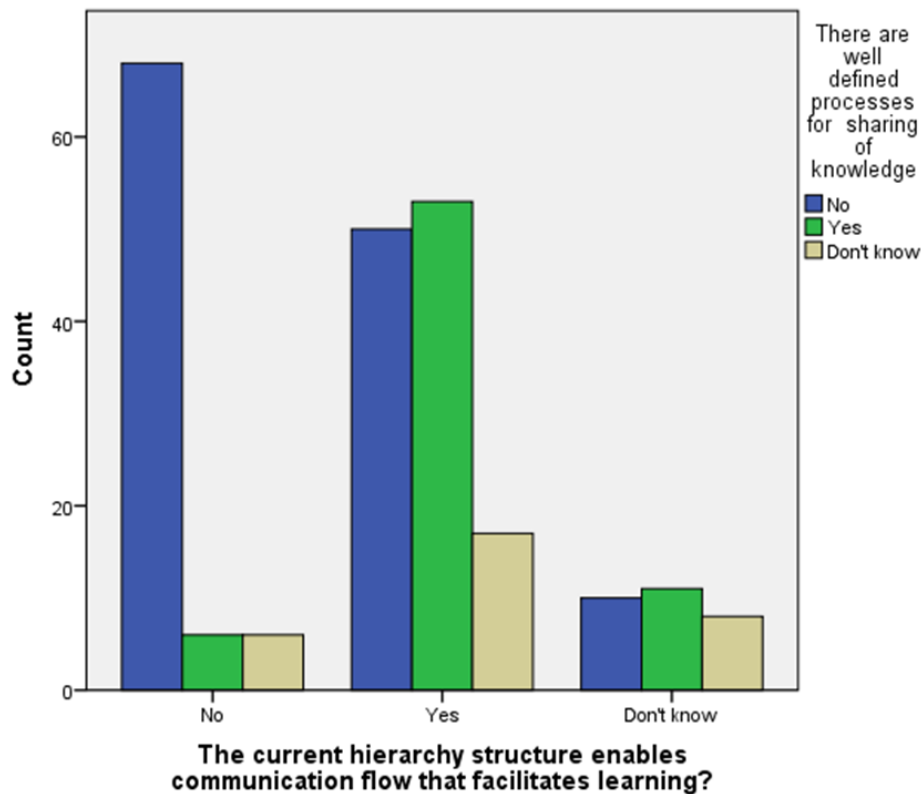
Figure 4-18: Association between current hierarchy structure and defined processes for knowledge sharing (See also Appendix G-1: Contingency table current hierarchy structure and defined processes for knowledge sharing)

The figure above shows that of the 80 participants who responded 'no' to (A), 29.7% said no and 2.6% said yes to (B). Alternatively, of the 120 participants who responded 'yes' to (A), 21.8% said no and 23.1% said yes to (B). Among the 29 people who did not know about question (A), 4.4% said no and 4.8% said yes to (B). To summarise, the more the hierarchical structure enables a communication flow that facilitates learning, the better knowledge sharing processes are defined.

The preceding statement also holds true for knowledge creation processes as depicted below. This finding was inconsistent with findings by Amayah (2013:464) where organisational structure did not have a

significant effect on knowledge sharing. This was attributed to the notion that not all public organisations are bureaucratic. Regarding the relationship between current hierarchy structure (A) and defined processes for creation of knowledge (B) it was found that there is a significant (P-value < 0.05) association. To deepen the analysis, we look at the numbers of participant responses. Figure 4-18 below illustrates the significant relationship between current hierarchy structures and defined processed for knowledge creation.
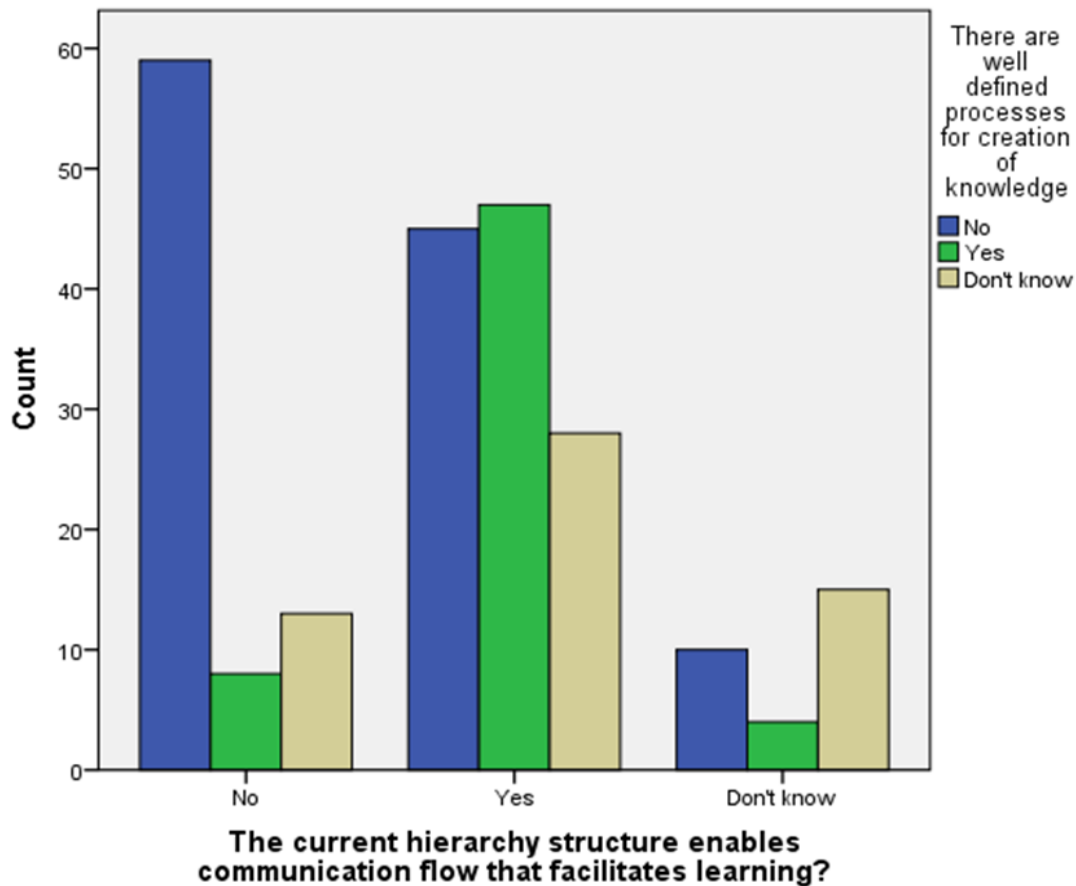
Figure 4-19: Association between current hierarchy structure and defined processes for creation of knowledge (See also Appendix G-2: Contingency table current hierarchy structure and defined processes for creation of knowledge)

This figure above shows that of the 80 participants who responded 'no' to (A), 25.8% said no and 3.5% said yes to (B). Alternatively, of the 120 participants who responded 'yes' to (A), 19.7% said no and 20.5% said yes to (B). Among the 29 people who did not know about question (A), 4.4% said no and 1.7% said yes to (B).

Concerning the relationship between availability of resources and facilities for individual development (A) and defined processes for sharing of knowledge (B) it was found that there is a significant (P-value < 0.05) association as illustrated by figure 4-19 below. The statistical significance of this relationship points to the

fact that in order for there to be better defined processes for knowledge creation and knowledge sharing, the municipality needs to provide resources and facilities for individual development. This means that in deciding upon a knowledge transfer strategy, the municipality may consider this HR function as a barrier which needs to be removed. This also holds true for the relationship between availability of resources and facilities for individual development and defined processes for knowledge creation discussed hereafter.
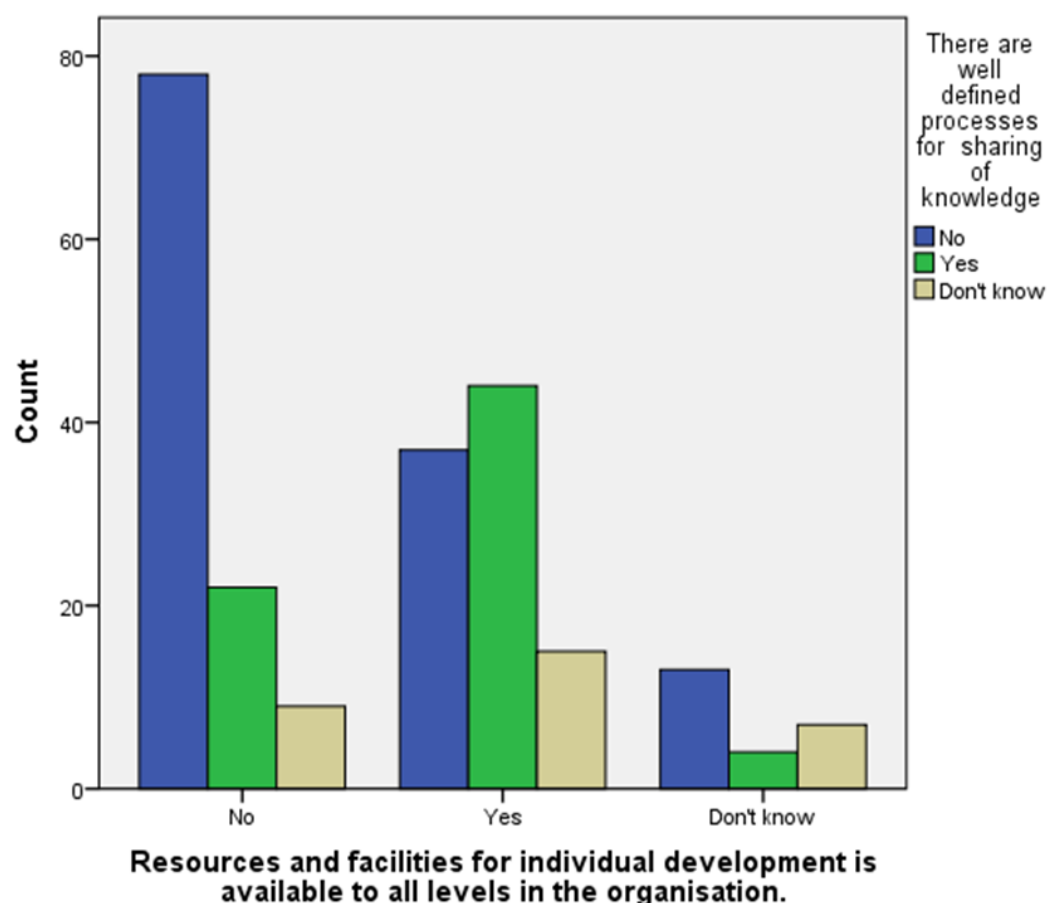
Figure 4-20: Association between availability of resources and facilities for individual development and defined processes for sharing of knowledge (See also Appendix G-3: Contingency table availability of resources and facilities for individual development and defined processes for sharing of knowledge)

To deepen the analysis, we look at the number of participants who said yes, no and don't know. Figure 4-19 shows that of the 109 participants who responded 'no' to (A), 34.1% said no and 9.6% said yes to (B). Conversely, of the 96 participants who responded 'yes' to (A), 16.2% said no and 19.2% said yes to (B). Amid the 24 people who did not know about question (A), 5.7% said no and 1.7% said yes to (B).

The findings in figure 4-19 on the previous page indicate that when there are resources and facilities available in the department for individual development at all levels, then processes for sharing knowledge

will be better defined. This also holds true for knowledge creation processes as depicted in figure 4-20 below. However, with regard to eThekwini, (figures 4-9, 4-11, 4-12), there are no resources and facilities currently available for individual development and processes for knowledge creation and sharing are not defined. Pinho et al (2011:221) describe such a situation as a socio-organisational barrier, which affects individual characteristics and behaviours. In this case it is affecting social relational capital, amongst other possible characteristics and behaviours. With reference to the relationship between availability of resources and facilities for individual development (A) and defined processes for creation of knowledge (B) it was found that there is a significant (P-value < 0.05) association as depicted in figure 4-20 below.
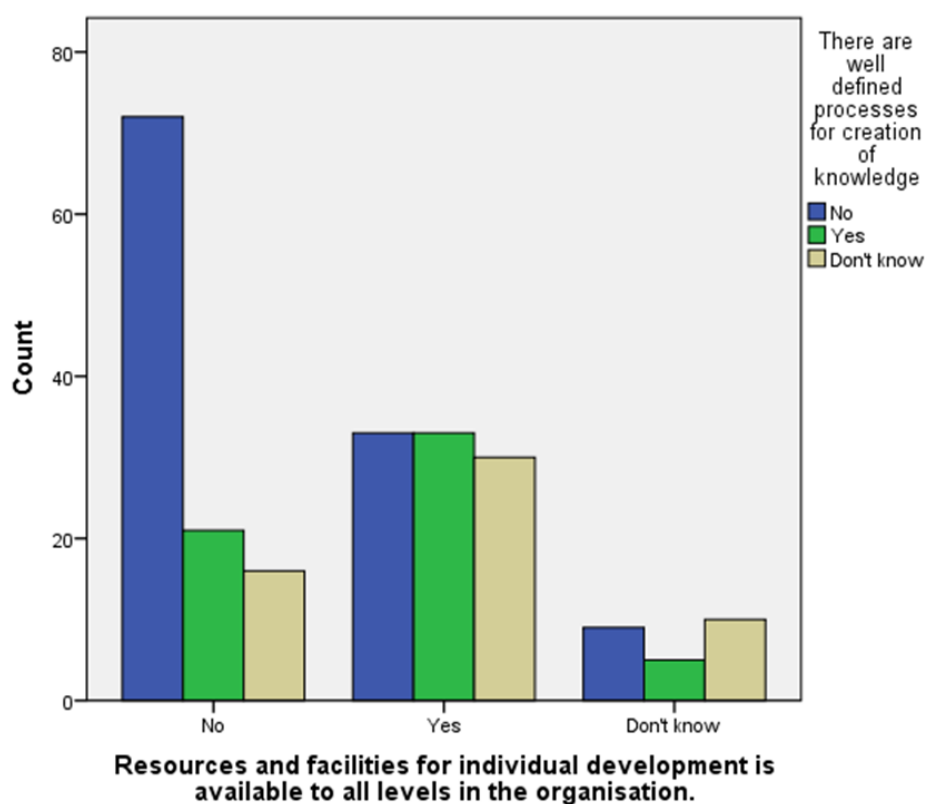
Figure 4-21: Association between availability of resources and facilities for individual development and defined processes for creation of knowledge (See also Appendix G-4: Contingency table availability of resources and facilities for individual development and defined processes for creation of knowledge)

To deepen the analysis, we look at the number of participant responses in each of the three categories, which shows that of the 109 participants who responded 'no' to (A), 31.4% said no and 9.2% said yes to (B). Conversely, of the 96 participants who responded 'yes' to (A), 14.4% said no and 14.4% said yes to (B). Of the 24 people who did not know about question (A), 3.9% said no and 2.2% said yes to (B).

With regards, to the relationship between encouraging organisational visits (A) and giving formal opportunities for sharing knowledge (B) it was found that there is a significant (P-value < 0.05) association as indicated by figure 4-21 below. This statistically significant relationship indicates that if an organisation encourages organisational visits, then it must provide formal opportunities to allow for the individual or group to provide feedback. Such feedback sessions are a technique for knowledge creation and sharing which can be adopted by any organisation that encourages organisational visits. This relates to the third objective of this study and is supported more by the personalisation strategy. However, feedback could be provided in the form of a report or newsletter article, which would be more suited for the codification strategy, as indicated by the theoretical framework. This also holds true for the relationship between encouraging organisational visits and giving informal opportunities for sharing knowledge discussed below.
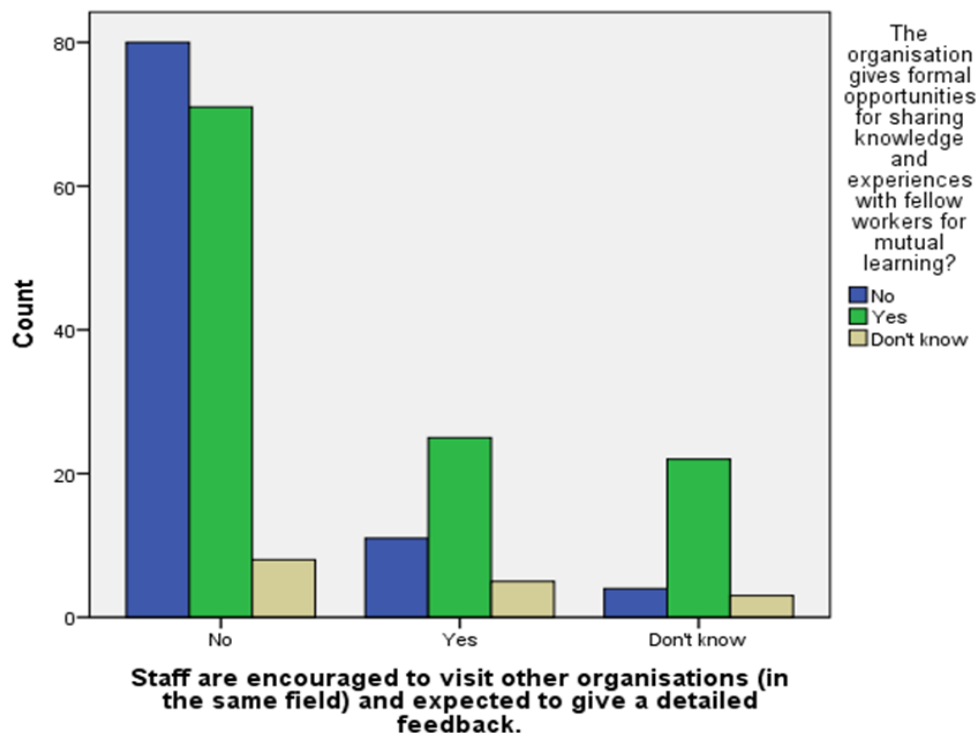
Figure 4-22: Association between encouraging organisational visits and giving formal opportunities for sharing knowledge (See also Appendix G-5: Contingency table encouraging organisational visits and giving formal opportunities for sharing knowledge)

The figure shows that of the 159 participants who responded 'no' to (A), 34.9% said no and 31% said yes to (B). Of the 41 participants who responded 'yes' to (A), 4.8% said no and 10.9% said yes to (B). Of the 29 people who did not know about question (A), 1.7% said no and 9.6% said yes to (B).

When staff are encouraged to visit other organisations in the same field and are expected to provide feedback on such visits then they are given formal opportunities to share knowledge and experiences with their colleagues intended for mutual learning. In the case of eThekwini, staff are given both formal and informal opportunities to share knowledge and experiences, however they are not encouraged to visit other organisations (see figure 4-3, 4-4, 4-13). Lopez and Esteves (2011:99) advocate that organisations should invest in knowledge acquisition to create an environment where employees are free to contribute their ideas but are also able to draw from the knowledge of other organisations so as to avoid 'reinventing the wheel'.

Relating to the relationship between encouraging organisational visits (A) and giving informal opportunities for sharing knowledge (B) it was found that there is a significant (P-value < 0.05) association.
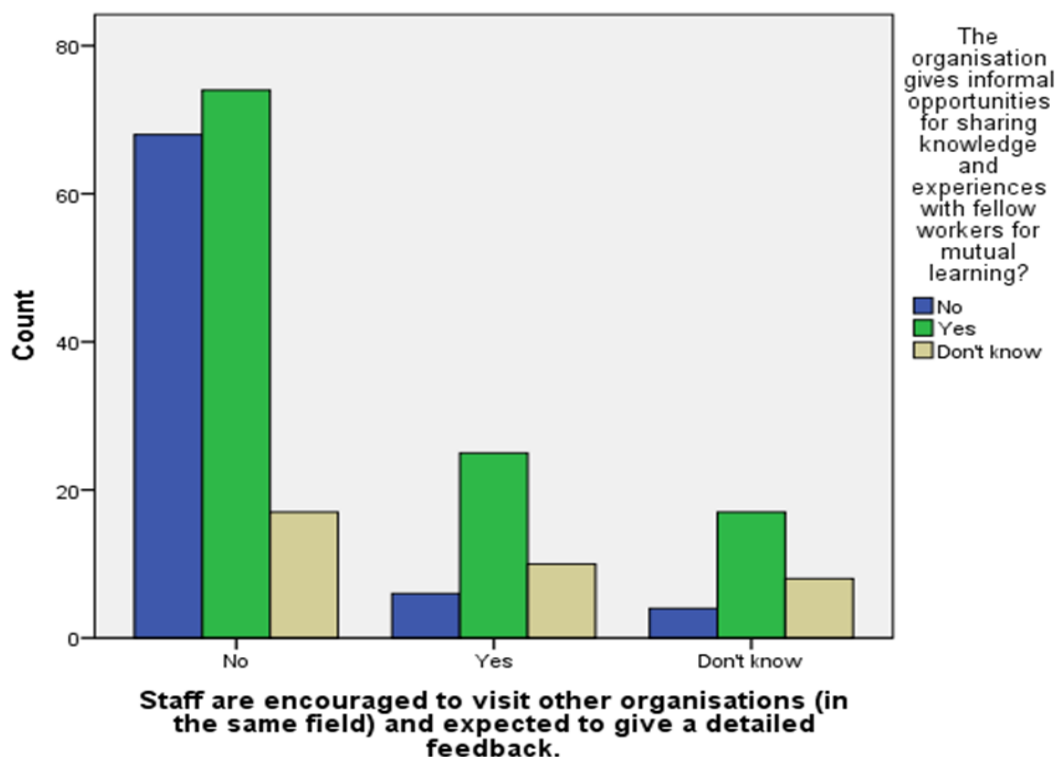
Figure 4-23: Association between encouraging organisational visits and giving informal opportunities for sharing knowledge (See also Appendix G-6: Contingency table encouraging organisational visits and giving informal opportunities for sharing knowledge)

The figure shows that of the 159 participants who responded 'no' to (A), 29.7% said no and 32.3% said yes to (B). Of the 41 participants who responded 'yes' to (A), 2.6% said no and 10.9% said yes to (B). Among the 29 people who did not know about question (A), 1.7% said no and 7.4% said yes to (B).

As to the relationship between rewarding contribution to organisational learning (A) and encouraging participation in project teams (B) it was found that there is a significant (P-value < 0.05) association. This statistically significant relationship speaks to the issue of personal motivation, which needs to be addressed when selecting a knowledge transfer strategy as represented in the theoretical framework. It also touches on issues of governance, since rewards in the public sector are generally stipulated by policy, which relates to the first objective of this study. This also holds true for the relationship between rewarding contribution to organisational learning and encouraging interdepartmental sessions discussed hereafter.
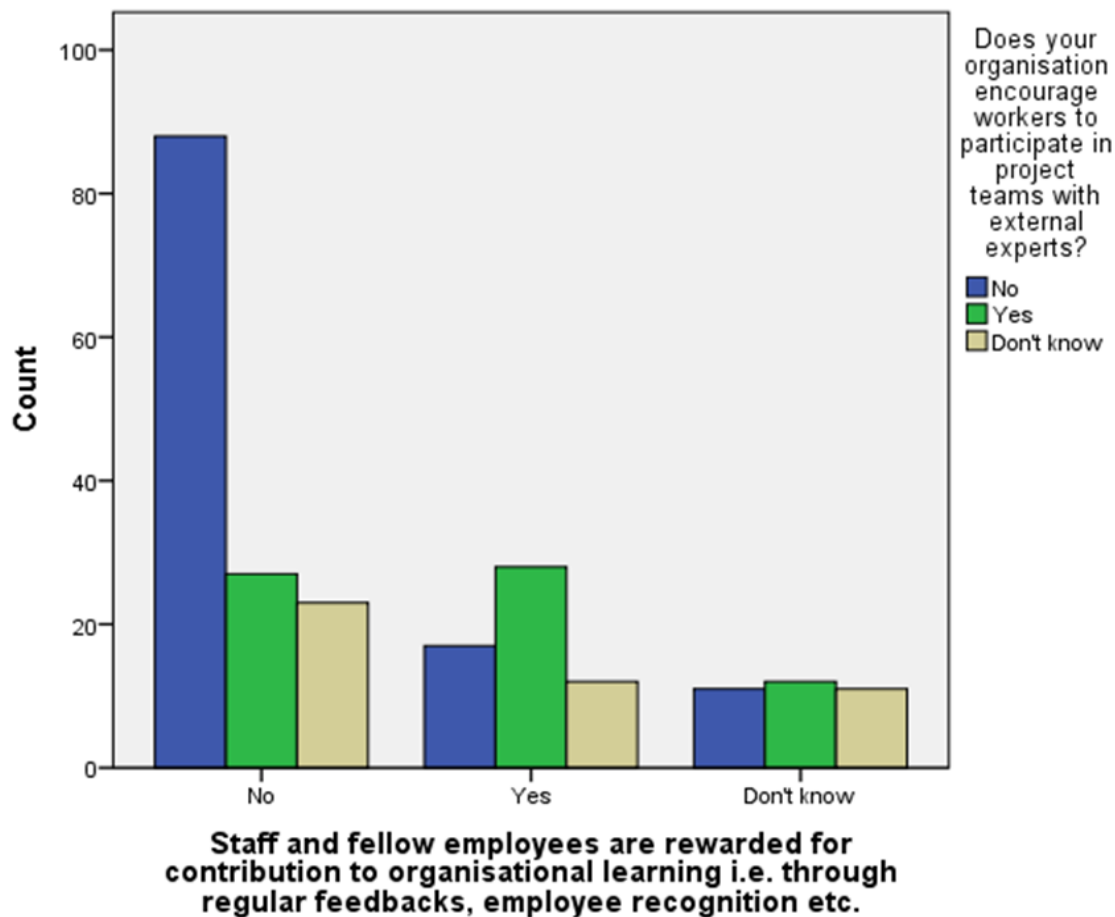
Figure 4-24: Association between rewarding contribution to organisational learning and encouraging participation in project teams (See also Appendix G-7: Contingency table rewarding contribution to organisational learning and encouraging participation in project teams)

To deepen the analysis, figure 4-23 shows that of the 138 participants who responded 'no' to (A), 38.4% said no to (B) and 11.8% said yes. Alternatively, of the 57 participants who responded 'yes' to (A), 7.4% said no to (B) and 12.2% said yes. Of the 34 people who said they did not know about question (A), 4.8% said no and 5.2% said yes to (B).

In a department where employees are rewarded for contributing to organisational learning they are also encouraged to partake in project teams with experts from outside the organisation. This also holds true for interdepartmental sessions where lessons are learned as well as social interaction among individuals as depicted below. Findings from a study by Amayah (2013:465) indicate that as the amount of organisational support increases so do the personal benefits of knowledge sharing, and these include the positive emotions a person experiences from feeling useful. Both results suggest that managers in the public sector should not only reward their employees for sharing but also provide greater opportunities for sharing, as this kind of encouragement and support could weaken barriers in their environment that value personal knowledge.

On the subject of the relationship between rewarding contribution to organisational learning (A) and encouraging interdepartmental sessions (B) it was found that there is a significant (P-value < 0.05) association.
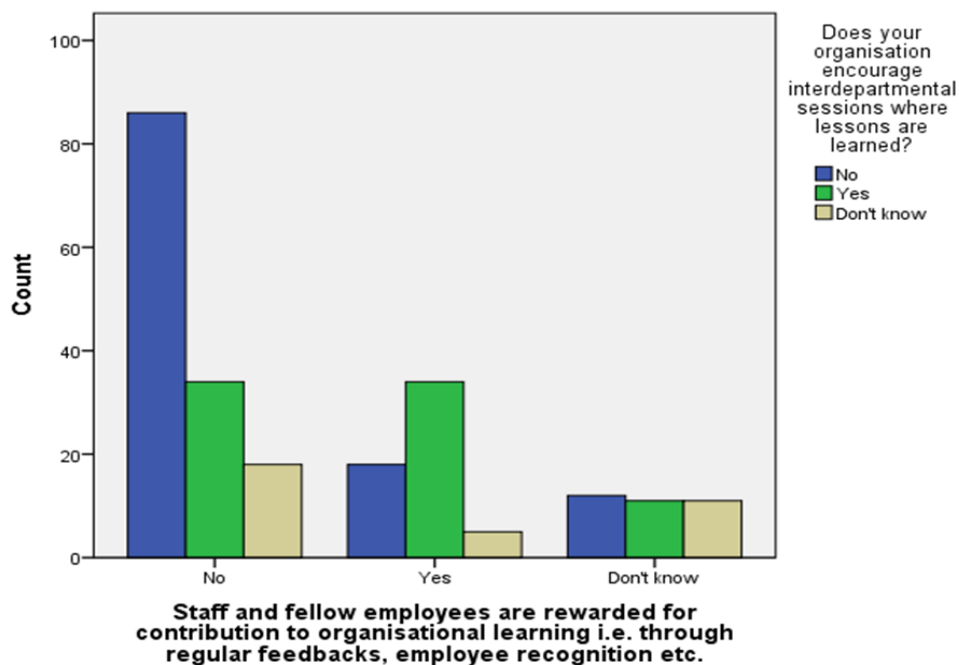
Figure 4-25: Association between rewarding contribution to organisational learning and encouraging interdepartmental sessions (See also Appendix G-8: Contingency table rewarding contribution to organisational learning and encouraging interdepartmental sessions)

Of the 138 participants who responded 'no' to (A), 37.6% said no to (B) and 14.8% said yes. Alternatively, of the 57 participants who responded 'yes' to (A), 7.9% said no to (B) and 14.8% said yes. Among the 34 people who did not know about question (A), 5.2% said no and 4.8% said yes to (B).

Looking at the relationship between encouraging problem solving employee exchanges (A) and encouraging participation in project teams (B) it was found that there is a significant (P-value < 0.05) association. To deepen the analysis, we look at the number of participants who said yes, no and don't know. The figure below indicates the significant relationship between encouraging problem solving employee exchanges and encouraging participation in project teams (P-value < 0.05). This statistically significant relationship portrays an organisational characteristic that stimulates knowledge creation and sharing, which is the second objective of this study. This also holds true for the relationship between encouraging problem solving employee exchanges and encouraging interdepartmental sessions as discussed hereafter.
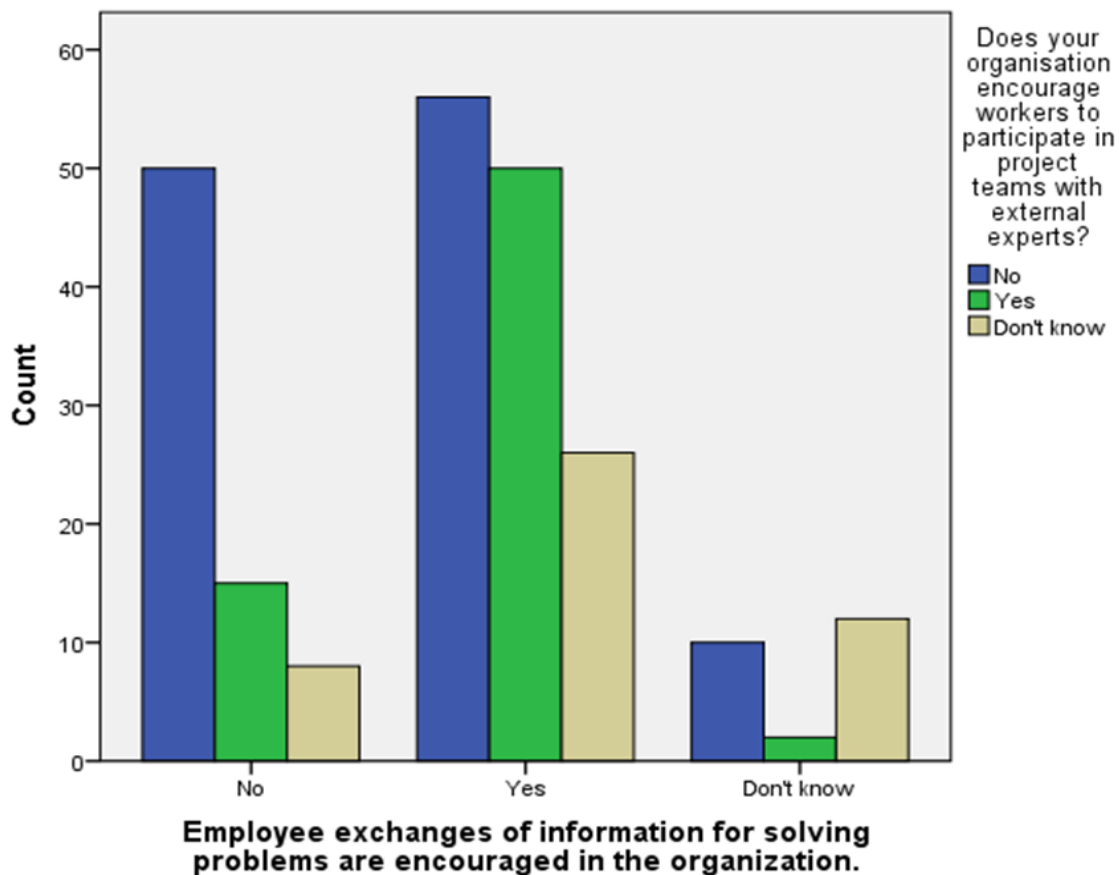
Figure 4-26: Association between encouraging problem solving employee exchanges and encouraging participation in project teams (See also Appendix G-9: Contingency table between encouraging problem solving employee exchanges and encouraging participation in project teams)

Figure 4-25 shows that of the 73 participants who responded 'no' to (A), 21.8% said no to (B) and 6.6% said yes. Of the 132 participants who responded 'yes' to (A), 24.5% said no to (B) and 21.8% said yes. Of the 24 people who did not know about question (A), 4.4% said no and 0.9% said yes to (B).

The findings above highlight that in departments where employee exchanges for solving problems are encouraged, then involvement in project teams with external experts is also encouraged. This also holds true for interdepartmental learning sessions, as depicted below by figure 4-26. These findings are supported by Lopez and Esteves (2011:98-99) who contend that organisations need to construct internal and external networks to support the processes of knowledge sharing and such networks need to be goal oriented.

Figure 4-26 below indicates the significant relationship between encouraging problem solving employee exchanges (A) and encouraging interdepartmental sessions (B) where (P-value < 0.05).
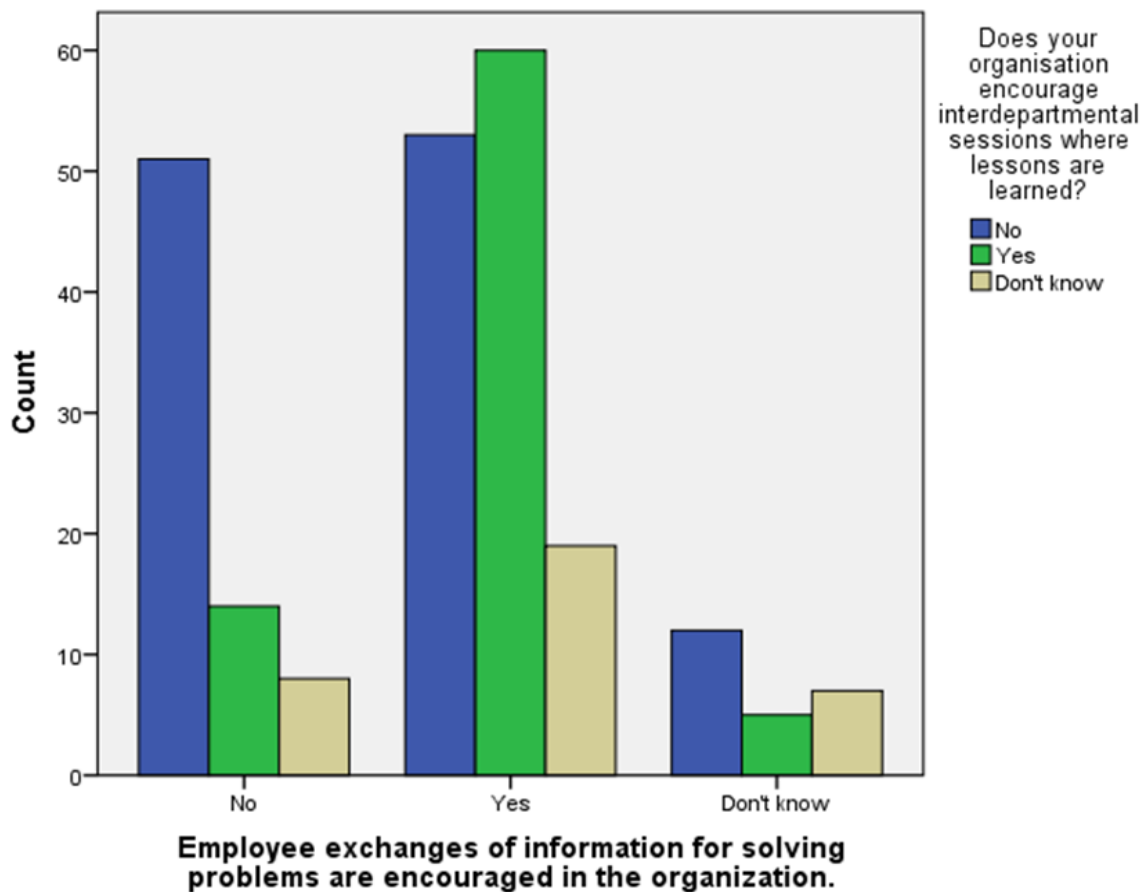
Figure 4-27: Association between encouraging problem solving employee exchanges and encouraging interdepartmental sessions (See also Appendix G-10: Contingency table between encouraging problem solving employee exchanges and encouraging interdepartmental sessions)

A deeper analysis of figure 4-26 above shows that of the 73 participants who responded 'no' to (A), 22.3% also said no to (B) and 6.1% said yes to (B). On the other hand, of the 132 participants who responded 'yes' to (A), 23.1% said no to (B) and 26.2% said yes to (B). Among the 24 people who did not know about question (A), 5.2% said no and 2.2% said yes to (B).

In view of the relationship between dedicating resources to obtaining and communicating knowledge (A) and documenting knowledge exchanges for future reference (B) it was found that there is a significant (P-value < 0.05) association. To deepen the analysis, we look at the number of participants who said yes, no and don't know. Figure 4-27 below shows that of the 87 participants who responded 'no' to (A), 23.6% also said no to (B) and 8.7% said yes. On the contrary, of the 68 participants who responded 'yes' to (A), 8.7% said no to (B) and 13.5% said yes. Among the 74 people who did not know about question (A), 7.9% said no and 9.2% said yes to (B).
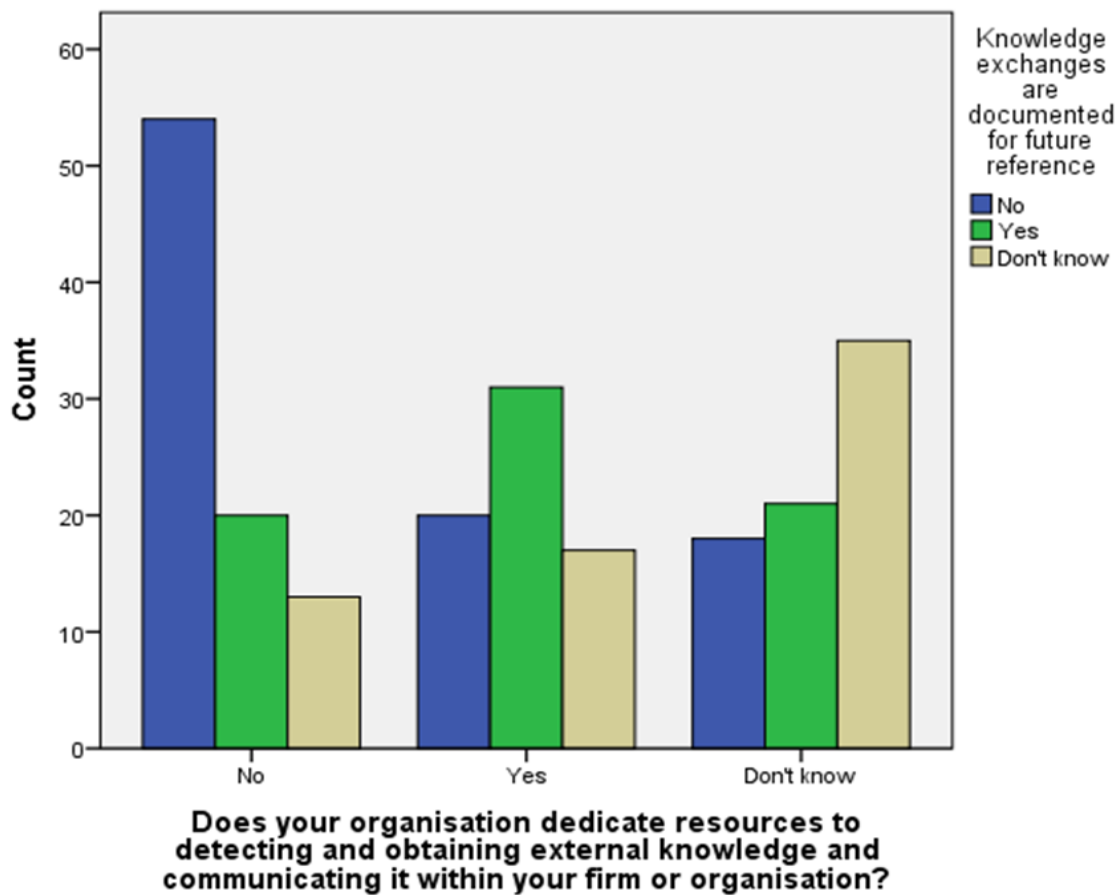
Figure 4-28: Association between dedicating resources to obtaining and communicating knowledge and documenting knowledge exchanges for future reference (See also Appendix G-11: Contingency table between dedicating resources to obtaining and communicating knowledge and documenting knowledge exchanges for future reference)

This statistically significant relationship in figure 4-27 on the previous page provides evidence for a direct link between knowledge creation and sharing techniques, which is the documenting of knowledge exchanges, and an organisational characteristic that stimulates knowledge creation and sharing, which is the dedicating of resources to obtaining and communicating knowledge. These two factors relate to the

second and third objectives of this study. The technique of documenting knowledge exchanges for future reference is more catered for an organisation utilising the codification strategy, as can be seen in the theoretical framework. This also holds true for the relationship between dedicating resources to obtaining and communicating knowledge and capturing and using knowledge obtained from private institutions. However, with this relationship the use of knowledge obtained from private institutions could cater for either the codification or the personalisation strategy subject to the organisation's organisational composition and governance systems.

Departments that dedicate resources to detecting and obtaining external knowledge will document knowledge exchanges for future reference as well as capture and use knowledge from other industry sources and public research institutions as depicted in figure 4-28 below. Lopez and Esteves (2011:98) state that in the formation of external networks it is vital to have a goal oriented strategy for obtaining knowledge where possible sources of knowledge required by the organisation are identified and then accessed to compliment the organisation's competencies in order for it to be able to reach its goals.

In the assessment of the relationship between dedicating resources to obtaining and communicating knowledge (A) and capturing and using knowledge obtained from private institutions (B) it was found that there is a significant (P-value < 0.05) association.
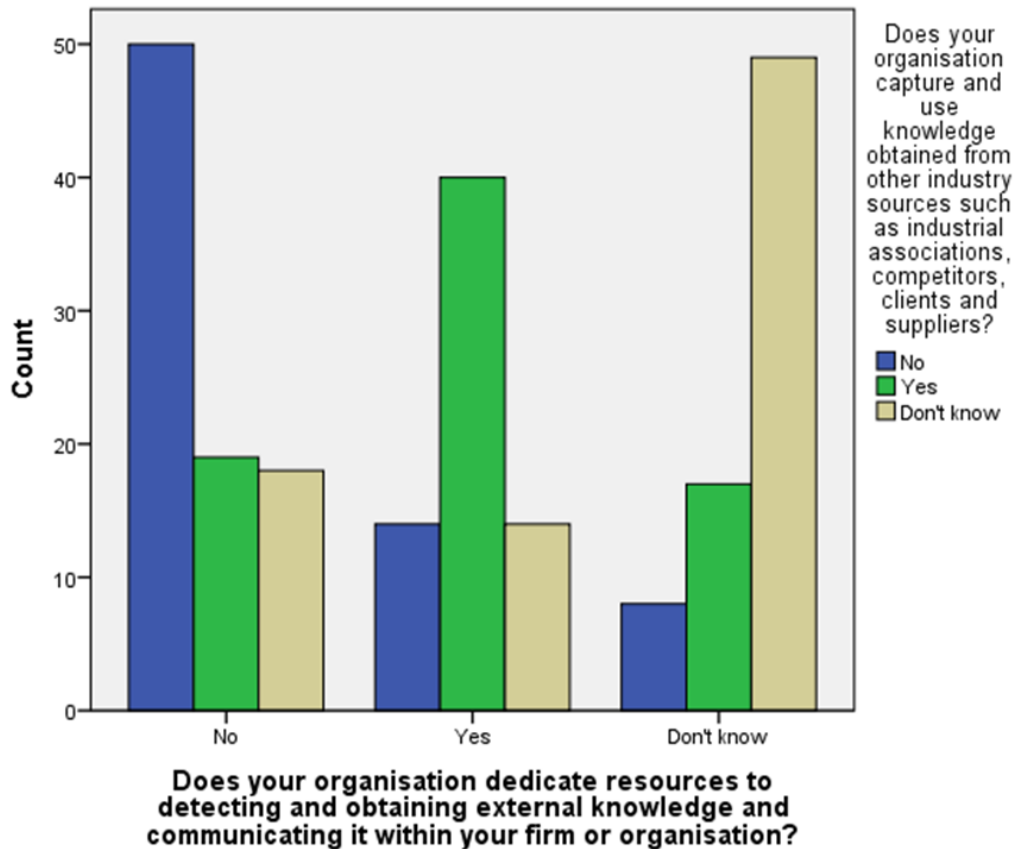
Figure 4-29: Association between dedicating resources to obtaining and communicating knowledge and capturing and using knowledge obtained from private institutions (See also Appendix G-12: Contingency table between dedicating resources to obtaining and communicating knowledge and capturing and using knowledge obtained from private institutions)

Figure 4-28 above shows that of the 87 participants who responded 'no' to (A), 21.8% also said no to (B) and 8.3% said yes. On the contrary, of the 68 participants who responded 'yes' to (A), 6.1% said no to (B) and 17.5% said yes. Among the 74 people who did not know about question (A), 3.5% said no and 7.4% said yes to (B).

Based on the significant statistical relationships discussed above and displayed in the figures above, the null hypothesis was rejected. To deepen the analysis, the next section, which is triangulation, will synthesise the qualitative and quantitative data analysed above with the researcher's observations and documentary evidence. This will provide a synergy of the data collection techniques discussed in chapter 3, section 3.5.

4.6 Triangulation

Triangulation reflects an attempt to secure an in depth understanding of the phenomenon in question. It is not merely a strategy of validation but rather, an alternative; as the combination of multiple methodological practices, empirical materials, perspectives and observations in a single study can be best understood as a

strategy that adds rigour, breadth, complexity, richness and depth to any enquiry (Denzin, 2012:82). The logic of method triangulation implies that different methods are combined to provide complementary insights into the same phenomenon. This excludes instances where some methods are merely employed to provide general background information to findings from other methods without any closer integration between them (Mondell 2009:209). The case study research strategy principles lend themselves to include numerous strategies that promote data credibility of the study. So, the triangulation of data sources is a prime strategy that supports the principle that phenomena be viewed and explored from multiple perspectives (Baxter & Jack, 2008:556). For this study, triangulation was conducted on four data sources: interviews; survey questionnaires; and researcher observations and documentary evidence. (As discussed earlier in chapter 3 section 3.5). Although researcher observations and documentary evidence are separate sources of evidence and therefore required different data collection techniques, these have been grouped together for presentation of figure 4-29.
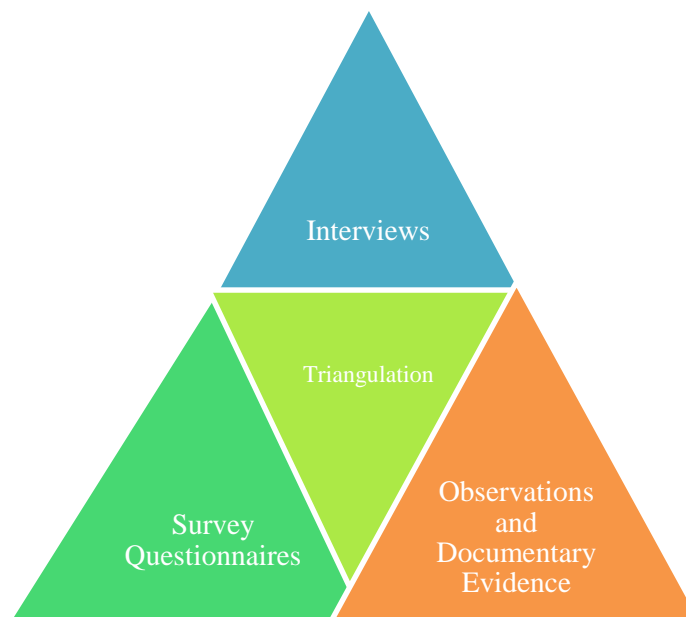
Figure 4–30: Triangulation of Sources of Evidence

Although there is evidence of KM practices in eThekwini Metropolitan Municipality, as the study findings support, there are some instances of convergence and divergence in the findings. This section will bring these to light. It is important to note that while the qualitative part of the research focused on management in the form of interviews, the quantitative part was found to be mostly responded to by non-management employees. This section will analyse the responses from each group, while also bringing in findings from

the researcher's own observations and documents accessed at the municipality. This will provide a more complete picture of the organisational structure in terms of current KM practices.

It is evident from the findings that the management of eThekwini Metropolitan Municipality is still coming to terms with the concept of KM. There are two extreme cases that highlight this: some of the people in management believe that KM is not yet being practiced and others believe that it is at an advanced stage. Others feel that the strategy to use MILE for KM implementation across the whole municipality is not effective, while others argue that it is. There is however, consensus from management that KM in the municipality is not properly structured, endorsed and embedded. This assessment is supported by the non-management employees as the majority pointed to the fact that there are no defined processes for knowledge creation and sharing. The municipality does not dedicate resources for obtaining knowledge from external sources, nor does it allow for external and interdepartmental knowledge sharing. Also, staff are not rewarded for contributing to organisational learning: rewards through regular feedback, employee recognition etc. This was also observed by the researcher in that while MILE has created a KM framework, none of the other departments to be using it and some are not even aware of it. Another observation made was that while most municipal offices and departments are located in the central business district (CBD), MILE's offices are located outside the CBD as if to hide them away. Another issue observed by the researcher and also pointed out by one of the respondents, is that MILE has only a handful of staff, but is expected to run the municipality's entire internal KM programme and also provide support to external organisations. This convergence in findings from different research methods and tools increases this study's credibility and confirmability as discussed in chapter 3, section 3.7.

The findings also provide some evidence of disjointedness between management and non-management employees as well as the municipality as a whole. MILE, the custodians of KM within the municipality, took a deliberate decision to focus on people in their approach to KM; yet the departments are merely focusing their efforts on the capture of data. This capture of data is also considered somewhat hap-hazard, as management believes that the DMS system should be improved to make information more easily and widely available. The non-management employees noted that knowledge exchanges are not documented and they were uncertain as to whether knowledge from other industry sources or public research institutions is captured and used. Management is of the view that KM is not structurally catered for within the municipality; but evidence adduced from non-management employees shows that the current hierarchical structure enables a communication flow that facilitates learning, thus supporting knowledge creation and

sharing. The documentary evidence points out that instead of implementing one strategy for KM and then building on that strategy, eThekwini Municipality at some point, decided against the strategy they had decided upon in early 2004 – 2005 of adopting a more codified strategy using the DMS system. They moved away from that strategy towards a personalisation strategy where MILE took a deliberate choice to focus on the people of the organisation. Now all the pockets of excellence that were documented during the DMS-related phase seem to be stored somewhere and are not being used anymore since focus has changed to a more people-centred approach. This is something that may be causing confusion between management, as some of them are calling for the DMS system to be used and other are content with the strategy of MILE coordinating KM for the entire city.

4.7 Chapter summary

This chapter discussed KM in the context of eThekwini Metropolitan Municipality and also highlighted the alignment between the research tools and the study's intended objectives, theoretical framework, research questions and hypotheses. Having highlighted the alignment, this chapter has also presented, analysed and triangulated both the qualitative and quantitative data findings and results in the manner prescribed and discussed in chapter 3. In the process of presenting and analysing the data, the chapter has also provided an interpretation of the data.

Chapter 5:
Conclusions, Recommendations and Visions of Future Research

5.1 Introduction

Service delivery issues in the South African public sector have been a serious problem for many years and the need for innovative strategies to deal with these issues is clearly apparent. Knowledge Management (KM) has been proposed as one such innovative strategy. The service delivery problems have arisen due to internal institutional factors such as lack of capacity, incompetency, diffusion, and poor structures, amongst others. Knowledge creation and sharing are two key components of KM that may be utilised to deal with such internal issues. As such, this study has focused on the relationship between these components within KM strategies and practices. The intention is that by exploring the correlation and interaction between these two overarching variables, insight may be gained as to how service delivery issues can be effectively addressed. This is aimed with particular attention to the South African municipal context through a focus on the eThekwini Metropolitan Municipality. In this final chapter of dissertation research, research questions, research objectives and the hypotheses are revisited. Findings and conclusions are summarised. Recommendations regarding KM are set forth. Visions of future research are highlighted before the dissertation is concluded with a summary of this chapter.

5.2 Overarching findings and conclusions

This study views knowledge as a crucial asset, particularly as this is a knowledge-based economy within a global era. Moreover, knowledge is discerned as dynamic and provisional. KM emphasises the socio-material construction of knowledge, the spatial relationality of knowledge and the importance of practices. This is commensurate with a post-rationalist approach that, when coupled with the relevant literature, accentuates the great potential KM has to offer to the South African public sector. There is documented evidence of KM practices, and specifically knowledge sharing, in the South African public sector: the introduction of the Electronic Communications Act; the Access to Information Act; the Government Information Technology Office Council (GITOC); the State Information Technology Agency (SITA); and E-Government, amongst others. These initiatives are all linked to the use of Information Communication Technology (ICT) in the South African public sector. According to the literature therefore, there appears to be an inclination towards the adoption of a codification strategy by the South African government. These are not new initiatives however, which leads one to question the extent to which the eThekwini Metropolitan Municipality is implementing such KM practices; looking specifically at knowledge creation and sharing. This formed the overarching research question for this study. The eThekwini Metropolitan Municipality is just one of 278 municipalities throughout South Africa; it is hoped that other municipalities will garner crucial lessons from the findings of this study.

A descriptive and interpretive form of mixed methods research was adopted for this study. This research design allowed for the gathering of the necessary information to answer the research question and achieve the research objectives of this study. It is worth revisiting the research objectives, research questions, and the hypotheses before summarising the overarching findings and conclusions.

Table 5-1: Research Questions, Research Objectives and Hypotheses at a Glance

Main Research Question: To what extent is eThekwini Metropolitan Municipality implementing KM practices, with specific reference to knowledge creation and sharing?	
Research Objectives	**Research Questions**
Determine whether organisational composition and governance in certain units of the eThekwini Metropolitan Municipality support KM.	How does the eThekwini Metropolitan Municipality support KM?
Identify public organisational characteristics that stimulate knowledge creation and sharing in certain units of eThekwini municipality.	How is knowledge shared within and between the different units and clusters?
Discover knowledge creation and sharing techniques that can be used for a wider application in the South African local government sphere.	What techniques of knowledge creation and sharing can be used for wider application in the South African local government sphere?
Hypotheses	
Null Hypothesis: There is no correlation between public organisation characteristics and knowledge creation and sharing.	**Alternate Hypothesis**: There is a correlation between public organisation characteristics and knowledge creation and sharing.

The research findings from this study were in line with the post-rationalist approach, which forms the ontological outlook and epistemological framework for this study (as discussed in chapter 1, section 1.4).

- The findings emphasise the notion that knowledge is situated in systems of ongoing practices. Respondents argued for the need to effectively transfer tacit knowledge, (gained from their work experience in the organisation), by establishing systems, processes, policies, modules and workflow charts so that this knowledge is readily available and accessible to all employees within the organisation.

- Respondents also highlighted how knowledge is rooted in social interactions as a form of social learning, acquired through some form of participation, and is continually reproduced. Forum sessions are used for knowledge creation and sharing. There is continuous open communication and interaction between and within departments in the spirit of 'Ubuntu' with the purpose that, as knowledge is shared, it is also gained. In this way, both organisational and individual knowledge

is constantly growing and evolving; it is a dynamic commodity that provides the organisation with a competitive advantage.

- In terms of KM implementation, it was found that eThekwini Metropolitan Municipality currently practices KM in a fragmented manner. The city operates KM-related programmes but they do not have a fully-fledged KM strategy in place; nor do they have a thorough implementation policy. Although there is a KM framework, this is not widely disseminated, so many people are not aware of its existence. While the Municipal Institute of Learning (MILE), is the custodian of KM in the city, most of the departments conduct KM-related programmes (such as DMS) without consulting or involving MILE.

- EThekwini Metropolitan Municipality facilitates KM by virtue of its hierarchical structure, which enables a communication flow that, in turn, encourages learning. The municipality also provides formal opportunities for knowledge sharing and experience respondents. The existence of informal opportunities for knowledge sharing and experience was confirmed. Social learning is evident. The city provides an environment for improving the work knowledge of employees. Respondents also indicated certain instances where the municipality functions in a matrix approach, utilises IT that facilitates knowledge creation and sharing, have an open leadership approach, are outcomes driven, have less office politics, and enable constant interaction between and within departments.

- It was discovered that, internally and inter-departmentally, knowledge is generally shared through means of forums, technical meetings, masterclasses, print documents or reports, and formal presentations. The city also shares knowledge with other municipalities, provincial and national government, as well as international organisations and institutions. These include methods such as publications, seminars, masterclasses, communities of practice, conferences, learning exchanges, institutional visits, and workshops are employed to disseminate knowledge externally.

- Several techniques were uncovered with regard to knowledge creation and sharing, however not all of these may be applicable in environments dissimilar to eThekwini Metropolitan Municipality. Knowledge creation techniques that are applicable for wider use include: knowledge sharing as a basis for the creation of knowledge; forum sessions, where a group of people gather and discuss a topic; documenting procedures and packaging them into modules or training manuals; work-flow processes and standard operating procedures; and regularly conducting research. Common knowledge sharing techniques include: communities of practice; seminars; workshops; mentoring and coaching; workplace skills courses; and peer-to-peer learning exchanges.

The descriptive and interpretive mixed methods research appears to allow transferability of certain results of the research to municipalities similarly situated. This fulfils the third research objective of discovering

knowledge creation and sharing techniques for wider application in local government. Through the use of recorded interviews, during data analysis the researcher was able to uncover related themes and descriptions and generate interpretations thereof. This provided a depiction of how, and to what extent, the eThekwini Metropolitan Municipality is implementing KM practices, specifically with regard to knowledge creation and sharing.

The case study strategy was deemed best suited for the mixed methods research design, the objectives of the study, and a research question that seeks to explore and examine complex situations in context. In addition, certain limitations, such as time constraints, amongst others, made the case study strategy useful. To expand: it would not have been possible to research each municipality in South Africa; but because local government is the sphere of government that deals directly with the population and service delivery, it was assessed as the most appropriate level at which to conduct this research. The case study strategy also enables replication of the study in other municipalities for the advancement of KM best practices.

From the literature reviewed the researcher was able to develop a theoretical framework that neatly summarised the research objectives and served as a vehicle to deliver what the study set out to contribute to society. The framework provided a theoretical guide of how KM research in relation to knowledge creation and sharing could be practically undertaken in the field. The main findings of this study indicate that eThekwini Metropolitan Municipality is currently implementing knowledge creation and sharing practices in a fragmented manner, with MILE as the custodians of KM within the city.

In connection with the testing of the hypotheses, a number of statistically significant relationships between variables were discovered as depicted in Table 5.2.

Table 5-2: Statistically Significant Relationships Discovered

Eleven statistically significant relationships were gleaned from the study. These are the relationships between:
Current hierarchy structures and defined processes for knowledge sharing
Current hierarchy structures and defined processes for knowledge creation
Availability of resources and facilities for individual development and defined processes for sharing of knowledge
Availability of resources and facilities for individual development and defined processes for knowledge creation
Encouraging organisational visits and giving formal opportunities for sharing knowledge
Encouraging organisational visits and giving informal opportunities for sharing knowledge

Rewarding contribution to organisational learning and encouraging participation in project teams
Rewarding contribution to organisational learning and encouraging interdepartmental sessions
Encouraging problem solving employee exchanges and encouraging interdepartmental sessions
Dedicating resources to obtaining and communicating knowledge and documenting knowledge exchanges for future reference
Dedicating resources to obtaining and communicating knowledge and capturing and using knowledge obtained from private institutions

As such the null hypothesis was rejected and the alternate hypothesis accepted.

This section has summarised the findings and conclusions in light of the research objectives, research questions and hypotheses utilised in the study. Recommendations based upon these findings and conclusions are next presented.

5.3 Recommendations
Based on the literature and research findings, the following recommendations are made:

- EThekwini Metropolitan Municipality should conduct an organisational assessment of KM. This assessment would allow for a clearer picture in terms of the theoretical framework adopted for this study, thus enabling the implementers of KM in the Municipality to identify what they have available at their disposal, where they need to improve and where they need to introduce new systems.
- There is also a need for greater support for KM in the city from top management, including the City Manager, in terms of providing resources, facilities, funding and directives.
- An organisation-wide understanding of KM should be generated through well-planned communication strategies that builds on existing synergies within units.
- Development and implementation of KM policy. To facilitate this, the development of a thorough KM policy incorporating the proposed strategy and framework, is recommended.
- Moreover, each unit working with MILE should develop its KM strategies in line with those of the municipality as a whole; as well as develop KM standard operating procedures in line with the KM framework.
- The eThekwini Metropolitan Municipality has to provide more human capital, funding and resources to MILE and the IT Department, in order for MILE to be able to run KM for the city and for the IT Department to be able to provide the necessary support services effectively organisation-wide.

- It is also recommended that while MILE may be the custodians of KM, each unit or department should appoint a knowledge officer to run a KM section for that unit or department.

To summarise, the study recommends that provincial and national government as well as parastatals take up KM practices for a more unified, efficient and effective public sector in South Africa.

This section has provided practical recommendations for eThekwini Metropolitan Municipality and all government officials and leaders as based on the findings and literature discussed in earlier chapters.

5.4 Significance of the contribution to the field of Knowledge Management

In chapter one it was indicated that globalisation processes have led to the existence of a knowledge economy in the 21st century. In chapter two it was pointed out that socio-economic circumstances in the 1990s changed the role of KM in contemporary society. In this information age, a global North-South divide is increasingly widened by the presence or absence of KM. As the sphere of democratic government closest to citizens, local government is and should be driven by constitutional mandates that address the political and socio-economic needs of the populous. Citizen demands are unlikely to be met in the absence of KM. This is true for both global North and global South municipalities. Generally, in South Africa, municipalities are yet to harness and implement KM practices for improved service delivery. There is lack of empirical evidence as to how municipalities in developing countries and countries with economies in transition can shape organisational structure and characteristics to facilitate KM in a way that improves organisational efficacy. Toward that end, findings from this study, as presented and analysed in chapter four, are significant in a number of ways.

First, thematic outcomes from qualitative research have demonstrated that political directives, social learning, the value of different views and organisational improvement should be taken into account for the advancement of KM. Second, quantitative research has identified at least eleven statistically significant relationships between certain variables that influence KM. Such relationships between variables, in the context of developmental local government, shed light on the implementation of KM practices. Some elements of the study, such as the value of different views in knowledge creation and sharing were not found by the researcher elsewhere in existing literature. Taken as a whole, findings from this mixed methods study have laid an evidence-based foundation toward public sector KM. This is a significant contribution to the body of knowledge on the managerial practice of KM as well as the emerging academic discipline of KM. Further research is required and contemplated in the next section.

5.5 Visions of future research

Designing a study is an arduous and time-consuming process. This section will suggest some possible areas for fellow and future researchers to explore with regard to KM. The first area involves an investigation into how individual characteristics and behaviours affect KM. While the group is always considered more important than the individual, it is vital to remember that groups are made up of individuals - thus each individual has an effect on the group. A descriptive qualitative research design would be best suited for such a study, as this is an area that has been researched in other fields, especially in HR. There is ample literature for one to draw from; while there has been extensive research in the field of KM in certain geographical areas and the private sector, such studies have been limited in the public sector and in developmental countries.

The second area that warrants research is the monitoring and evaluation of KM practices in the public sector. The exploratory qualitative research design would be best suited for such a study because there is very little, if any, literature available on the monitoring and evaluation of KM, both in the private and public sectors. Qualitative research is always most suited for 'how' and 'why' questions, as these relate, generally, to processes, procedures and behaviours that require a narrative rather than quantified explanation.

The final suggested area for future research based on this study is the role and impact of the South African Cities Network (SACN) on the field of KM in South Africa. For such a study an exploratory and descriptive mixed methods research design is best suited. Although this is more of a 'what' question, which generally suits quantitative research better, the complexity of the research would also require narrative findings, which is why mixed methods research design is best suited. The scope of this suggestion is also very broad, thus making the quantitative data collection techniques more desirable. Moreover, qualitative data collection methods may be limited by the researcher's resources, which makes mixed methods the best suited design. Again there is very little, if any, scholarly research conducted in relation to the SACN.

5.6 Chapter summary

This chapter has synthesised the interpretations described in chapter 4. It highlighted the key research findings and results as per the research questions and research objectives of this study along with the outcome of the testing of the hypotheses. Having elucidated the key research findings and conclusions, the chapter then provided recommendations for implementation of the findings. This chapter presented the significance of the contribution of this study to the field of KM followed by visions of future research in the field. The dissertation is concluded with this chapter summary.

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APPENDIX A: Interview Questions

1. At what point did you come to know about knowledge management at eThekwini municipality?

    a. Probe _ when, where, how, your role, if any?

2. Please explain the current status of Knowledge Management in your organization?

3. Please describe any policies regarding knowledge management.

4. What are your perceptions about these existing policies?

5. From your view, how can knowledge management policies improve?

6. Please describe any procedures regarding knowledge management.

7. What are your perceptions about these existing procedures?

8. From your view, how can knowledge management procedures improve?

9. Please provide your perceptions of the strategy your organization uses for KM?

10. Kindly state the methods for knowledge management used in your organisation?

11. Who is responsible for knowledge management in your organization?

12. What types of characteristics does your unit have that makes it open to KM?

13. What types of characteristics does your unit have that suggests knowledge creation is desired?

14. Tell me something about how you perceive knowledge sharing?

15. Describe some helpful techniques in knowledge creation.

16. What are some helpful techniques to encourage knowledge sharing?

17. With whom does your unit share knowledge?

    Probe: What knowledge is shared?

18. How is this knowledge shared?

APPENDIX B - 1: Indemnity Page

eThekwini Municipality / Public Sector Knowledge Management: The Case of eThekwini Metropolitan Municipality

Public Sector Knowledge Management: The Case of eThekwini Metropolitan Municipality

The aim of this study is to:

- Determine whether organizational composition and governance in certain units of eThekwini metropolitan municipality facilitate knowledge management.
- Identify public organizational characteristics that stimulate knowledge creation and sharing in certain units of eThekwini municipality.
- Discover knowledge creation and sharing techniques that can be used for wider application in the South African local government sphere.

The particular eThekwini municipal units under study are the: Municipal Institute of Learning (MILE), Skills Development Unit (SDU), Management Services and Organisational Development Unit, Information Systems Department (IS), Libraries Department and Performance Management Unit.

- Your participation in this project is voluntary.
- You may refuse to participate or withdraw from the project at any time with no negative consequence.
- There will be no monetary gain from participating in this research project.

However, since you work for the eThekwini Metropolitan Municipality, your organisation may benefit from the findings of this study. Confidentiality and anonymity of records identifying you as a participant will be maintained by the School of Management, Information Technology and Governance, Discipline of Public Governance at UKZN. Your identity will not be revealed or your name used in connection with this study.

If you have any questions or concerns about participating in this study, please contact lungelo.msomi@durban.gov.za

Continuing with the survey below means you understand, accept and consent to the terms listed above.

Click here to continue to the Survey

WEATHER	IMPORTANT NUMBERS	QUICK LINKS	CITY MAPS	FOLLOW US
Fair High: 29°C Low: 22°C	Fire Department & Metro Police: 031 361 0000 Water and Traffic Hotline: 080 131 3013	Tariffs eCareers Water Reports Tenders		

APPENDIX B – 2: Survey Questionnaire

I am L. Msomi and I am pursuing a Master in Public Administration at the University of KwaZulu Natal. I kindly request you to please fill in this questionnaire to facilitate the completion of this study. The questionnaire is for academic purposes only and is not an investigation into your organisation or you as the respondent. Please not there will be no monetary benefits or anything of the sort for participating in this study. Participation is completely voluntary and anonymous. Please answer all questions to the best of your ability.

Knowledge Management: "is the set of business policies and actions undertaken for the purpose of favouring the creation of knowledge, its transfer to all firm members and its subsequent application, all of it with a view to achieving distinctive competencies which can give the organisation a long term competitive advantage" (Pinho et al, 2011: 216).

Section A: Demographics

Gender		Age	Education level		Work Experience In Municipality	Job Title	
Male			Less than Matric			Intern	
Female			Matric			Clerks	
			Post Matric Certificate			Administrator	
			Degree or Diploma			Manager	
			Postgraduate Degree or Diploma			Others	

Section B

1. The current hierarchy structure enables communication flow that facilitates learning

   a. Yes   [ ]   b. No   [ ]   c. Don't know   [ ]

2. The organisation gives formal opportunities for sharing knowledge and experiences with fellow workers for mutual learning.

   a. Yes   [ ]   b. No   [ ]   c. Don't know   [ ]

3. The organisation gives informal opportunities for sharing knowledge and experiences with fellow workers for mutual learning.

   a. Yes   [ ]   b. No   [ ]   c. Don't know   [ ]

4. Staff and fellow employees are rewarded for contribution to organisational learning i.e. through regular feedbacks, employee recognition etc.
   a. Yes   [ ]   b. No   [ ]   c. Don't know   [ ]

Section C

5. There are well defined processes for sharing of knowledge

   a. Yes   [ ]   b. No   [ ]   c. Don't know   [ ]

6. There are well defined processes for creation of knowledge
   a. Yes   [ ]   b. No   [ ]   c. Don't know   [ ]
7. Employee exchanges of information for solving problems are encouraged in the organization.
   a. Yes   [ ]   b. No   [ ]   c. Don't know   [ ]

8. The organization provides environment for improving work knowledge of the employees.
   a. Yes   [ ]   b. No   [ ]   c. Don't know   [ ]
9. Staff are encouraged to visit other organisations (in the same field) and expected to give a detailed feedback.
   a. Yes   [ ]   b. No   [ ]   c. Don't know   [ ]
10. Resources and facilities for individual development is available to all levels in the organisation.

    a. Yes   [ ]   b. No   [ ]   c. Don't know   [ ]

11. Knowledge exchanges are documented for future reference
    a. Yes   [ ]   b. No   [ ]   c. Don't know   [ ]

Section D

12. Does your organisation?

   a)   capture and use knowledge obtained from other industry sources such as   industrial associations, competitors, clients and suppliers

        i)   Yes   [ ]   ii) No [ ]   iii) Don't know   [ ]

   b)   capture and use knowledge obtained from public research institutions including universities and government laboratories

        i)   Yes   [ ]   ii) No [ ]   iii) Don't Know   [ ]

   c)   dedicate resources to detecting and obtaining external knowledge and communicating it within your firm or organisation

        i)   Yes   [ ]   ii) No [ ]   iii) Don't Know   [ ]

   d)   encourage workers to participate in project teams with external experts

        i)   Yes   [ ]   ii) No [ ]   iii) Don't know   [ ]

   e)   encourage interdepartmental sessions where lessons are learned
        i)   Yes   [ ]   ii) No [ ]   iii) Don't know   [ ]

   f)   allow for social interaction among individuals within the organisation
        i)   Yes   [ ]   ii) No [ ]   iii) Don't know   [ ]

APPENDIX C: Access Letter

Pod 1, Second Floor, Intuthuko Junction, 750 Mary Thiphe Street, Umkhumbane, Cato Manor, Durban 4001.
Tel: 031 322 4513, Fax: 031 261 3405, Fax to email: 086 265 7160, Email: mile@durban.gov.za, Website:
www.mile.org.za

To Ms Aaliyah

For attention: The Chair of the Ethics Committee
School of Management, Information Systems and Governance
College of Law and Management
University of KwaZulu Natal
Westville Campus
Durban
4000
12 June 2014

RE: LETTER OF SUPPORT TO LUNGELO MSOMI AND GRANTING OF PERMISSION TO USE THE ETHEKWINI MUNICIPALITY AS A CASE STUDY

The Employee Wellness Department of eThekwini Municipality in partnership with the Municipal Institute of Learning (MILE), have considered your request to use eThekwini Municipality for a research leading to the award of the Master's Degree in Administration titled, Public Sector Knowledge Management: The Case of eThekwini Metropolitan Municipality.

We wish to inform you of the acceptance of your request and hereby assure you of our utmost cooperation towards achieving your academic goals; the outcome which we believe will help our municipality in the long run. In return, we request that you present the results and recommendations of the study to the city for consideration.

It is agreed that you are to liaise with Mr F. Njokweni who manages our KM Program, for any assistance you might need from our professional level employees in eThekwini municipality.

....   13/06/2014.
                                                          ....
Program Manager: Knowledge Management
eThekwini Municipality   Date

....
Collin Pillay
Program Manager: Academic Collaboration

APPENDIX D: Broad Matrixes

Appendix D – 1: Status of Knowledge Management

Status of Knowledge Management		
Structural	**Policy**	**Strategical**
Knowledge management is not properly structured and probably endorsed and embedded in the municipality **JIS2.** It's now a departmental micro-structure within the organisation which then means it needs to me embedded and mainstreamed across all clusters, units and departments **FMI2.** I don't think is well enough embedded or elements of that process are not well enough embedded in the municipality **JIS4.** MILE responsible for ensuring that knowledge management is entrenched within the municipality and outside as well **SMI2.**	The municipality doesn't have a knowledge management policy and most cities too. I am not exposed to any organisation that actually has a knowledge management policy. **FMI3** At the moment I am not aware of any policy that exist within our organisation or most organisations **DOD3.** There is no policy regarding knowledge management. If there is a policy it is still in the pipe line **MSD3.** In terms of policy, there is no adopted policy on knowledge management **SMI3.**	I think we are working towards a strategy, I am not sure if the policy is council endorsed **JIS3.** We have a management road framework and a draft knowledge management strategy that is currently being finalized and hopefully will be adopted by council **SMI3.** Our strategy is under review but we are implementing some of the projects that are recommended in the strategy **FMI9.**
There is no structured approach to knowledge management **DOD2.** Structurally it's not catered for **MLH2.**	I wouldn't say I am aware of any policies except for policies around internships, graduate traineeship and such policies coming from skills development **ROD3.** Currently I am not aware of any policy but I know of our internal information systems policies like security policy that relate to IT **LIS3.** I don't know of policies per se but of best practices that are used, but there is no particular policy that I know **KPE3.**	There is an enabling framework, it defines knowledge management as creating knowledge, organising knowledge, sharing knowledge and storing knowledge. It's a broad framework and it assists municipality to come to terms with what is quite an elusive concept. So it's there but it's not widely disseminated people are not aware of the framework so there is a lot of work to be done around sharing it **SMI4.** A strategy is not yet defined but the framework is there, it's not

	We don't have a serious knowledge management policy we only have knowledge management related programs **GLH4.**	well cascaded, people are not aware of knowledge management **SMI9.**
I think we are focusing a lot on keeping data **GLH2.** We have systems in place where we capture what have been done **LIS2.** We are actively collecting that information adding it to the website **TLH2.**	The department of corporate governance, human settlements and traditional affairs is the custodian of knowledge management so they are currently developing a policy **FMI3.**	The strategy for now is to use MILE which is not correct because it does not get the prominence it deserves. Knowledge management is a huge thing; you cannot just assign 2 people to do it in the municipality **MSD9.** Through MILE, a database has been created, a share point, which is a system that is being used where you information can be accessed **DOD9.**
We should have been able to come up with a policy and strategy on knowledge management but I am not sure if it's fully endorsed yet but we have been working on it **JIS3.**		There is no strategy really, in Information Technology there is a culture of documenting but again I don't see it happen consistently enough **JIS9.** We do not have strategies per se but we currently use outside bodies to prepare our people or to develop our people in this direction because we do not have internal capacity to actually develop our own staff in terms of knowledge management **ROD9.**
I don't think we have even started working with knowledge management as a discipline. I don't think we have gotten to a stage where we are actually practicing knowledge management **GLH2.**		Provincial and national government have what they call a competency framework **FMI3.**

Appendix D – 2: Knowledge Management Aspects

Knowledge Management Aspects		
Knowledge Creation	**Knowledge Sharing**	**Organisation Characteristics**
Knowledge sharing is the best in terms of developing and creating knowledge. Allow people in the lower ranks to speak freely at the meetings, opening the door to everyone with some suggestions then you can create knowledge **ROD15.** I think we have to be open, so exposure to lots of different ideas is important make sure people go to conferences and be able to learn in a broad context with different views and ideas **JIS15.** Transferring the tacit knowledge which is sitting here into more explicit knowledge, so we do that creating knowledge through facilitative sessions where the team sits with line departments and extracts knowledge and packages it into modules **SMI15.** Getting involved in organizations, interacting with other people that is where you acquire the knowledge or by you getting involved in doing something that is how you develop or acquire knowledge. In our environment you can only acquire knowledge because you using the very knowledge that you have **MSD15.**	It's quite crucial. It's important for organisational continuity, maintenance of the vision also for team building to ensure that we are all on the same page and appreciate the vision of the organisation. There needs to be a very clear framework on how well the organisation is able to share knowledge **GLH14.** I think it's very important, the more people that know the better the organisation is going to be. I think we all should be doing it better and we should be doing it consistently **JIS14.** That a very good thing because for any organization to sustain itself it has to share knowledge. People come and go so it is important for the unit or for the organization or for the municipality to ensure that they document the knowledge. As a government we need to document and keep the knowledge and share it with others that is important **MSD14.** I think it's a good thing because it can add value and improve service delivery **LIS14.**	Have a structure that is networked and also the way we function in most cases also tends to be matrix in nature **GLH12.** We are flexible in the way we work **FMI12.** A very open leadership style where you don't have someone in charge but you have a matrix management approach so everyone are upholders of knowledge **SMI12.**
I think having forums where everyone can share problems and solutions to problems or any other information. And to	Knowledge sharing is very much important, if you have information and you don't use that information it will decay.	IT hardware that could facilitate knowledge sharing **GLH12.**

always document the tasks you are doing and to have procedures on how to do those tasks **LIS15.** Forum sessions like seminars where you get a group of people to engage on a topic **GLH16**. I could say creation of new knowledge mainly comes from workshops, when we bring knowledge together and document it we will be in a way creating new knowledge. We have seminars that's where we create and share, we have conferences once every year, we have meetings and some meeting are about specifically knowledge creation **TLH15.** Conferences, let people be trained, let people be exposed to different ideas and ideologies, have to debate and compete with other people like at master classes etc. **JIS16.** Mentoring, coaching, and information systems **DOD16.**	So you have to share the knowledge so that you keep abreast **ROD14.** I feel that whatever knowledge we have should be shared. A change in the mind-set is required so that people know that by sharing information I don't take away what you know but it makes people and organisations grow because they learn more **NPE14.** That is a very important aspect because for us to grow, whether in a personal or professional capacity, one needs to share information and learn. You share what you are doing and you learn what they are doing **TLH14.**	IT in the case of knowledge management it has the ability to make sure that documents are well stored and people have access. We should have training videos that are fun and interactive and engaging and Information Technology can do that, it can provide platforms for eLearning **JIS12.**
It's all about keeping yourself abreast of everything that's happening. So if we research our knowledge increases and the way we do things improve **NPE15.** I think research is key **KPE15.** Google search engine, also the library is still a standard approach for getting information **DOD15.** Research as to how people interact with one another besides having chats over coffee and those informal meeting,	We have forums where we do information sharing and also we advise our staff to do research and share their findings on certain issues **LIS13.** We use brown-bag seminars to get people to share. Another way is to have management seminars where you get a national or international thought leader, pay for them to come down and inspire people to learn and to share **SMI16.** Besides masterclasses, there are a lot of workshops going on around the country and the most	Both formal and informal ways of learning and sharing are what give you the richness **JIS16.**

outside boardroom meetings or sharing approaches and techniques that's being used at the moment **DOD16.** A lot of research **KPE12.** We have to do lots of research constantly **DOD13.** Have to go places for us to acquire knowledge. **MSD13**	important thing is they must be relevant **KPE16.**	
Schools and universities are also a good platform because there are reservoirs of people that are ready to receive and transmit knowledge **GLH16.** Create a platform for people to tell their own stories as opposed to the dominant narratives driven by personalities driven by people that are of particular political alignments **GLH13.** There is a program called creative writing **MLH13.** Social media is a very important platform but it must be used properly **GLH16**. Social media **DOD15.**	It's done in the spirit of Ubuntu, we share knowledge, in the process of sharing, we learn from each other. **FMI14**	Constant interaction with other departments across the municipality and also within our organogram which means that there is always information travelling up and down the structure itself that's why the structure is created **DOD12.** A culture engendering a culture of knowledge management **SMI12.**
It's part of individual performance plan **SMI13.**		We have dedicated staff, visionaries, professionally run office, have less office politics **FMI12.** We are Outcomes driven and objectives driven **FMI13.**
		We have what we call progression within our unit, we are able to manage our

		knowledge within ourselves and not lose it to other units **ROD12.**

Appendix D – 3: Manging Knowledge

Managing Knowledge	
Approaches/ Procedures	**Techniques**
The top has to be convinced that it's important and it has to be done and the top must drive it **JIS5**. For knowledge management to thrive in the organization it has to be placed where it can be allowed to thrive. For example in other areas it will be in the office of the CEO, there it gets the prominencece and the support it deserves **MSD9.** The management is responsible for knowledge management especially senior management **ROD11.** It should be the head, in every department it should be the head of that department responsible for knowledge management **JIS11.** In the new structure that it should be a standalone and structured department where it won't be a by-and-by. So that it has a home and people will take it seriously. **MLH9**	Within the unit, we allow our staff to attend workplace skills management courses **ROD2.** We have decided to implement masterclasses **KPE2.** Have seminars that give managers a chance to get together in a non-threatening environment, non-adversarial environment where you sit and listen, which is important and learn why that person want what they want. Talk about a collective issues in what we call brown-bag sessions **JIS6.** There are various ways we have used to share knowledge like master classes, seminars for senior management and councillors, we have been doing brown-bag sessions, that's an American concept of people who come together sharing knowledge carrying lunch in brown bags. We have done peer-to-peer learning exchanges **FMI10.** Publications, training education type sessions, meetings, and forums **GLH18.** master classes, learning exchanges, brown-bag sessions, CoP's, seminars, breakfast sessions, dialogues, conferences, learning events, research symposiums, knowledge summits and then document and distribute **FMI18.** Structured processes of learning and engagement, master classes, seminars and learning exchanges **SMI18.** There is also supposed to be mentoring and coaching going on which is semi-structured **DOD10.**

	We have workshops on different skills, techniques, methodologies and within that workshop the client will get a hard copy of the information **DOD18.** Conducting learning sessions, publish brochures and have articles in our newspapers **MSD18.**
	Another way to do it is to have the training manual, work-flow process, or what we call the standard operating procedures in a much more user friendly way. We should make it fun and exciting, any material should be visual and easy to look at because that the way most people learn anyway **JIS5.** The documentation based on business requirements and what has been developed for the users I think that can form a basis of knowledge management just in case there are new people coming into the department they can use those documents to familiarize with those projects **LIS9.**
In the city we have a system called DMS. Initially DMS was just about archiving and did not seek to convert that information to knowledge **GLH3.** Document management system as a proper tool should be used in its proper way throughout municipality **JIS6.** In the municipality IT is responsible for the infrastructure and for housing all our data **GLH11.**	We have monthly and quarterly meetings where we meet with our staff and we use the experienced staff to present papers so that our staff can be updated, that's what we do so far in terms of knowledge management **ROD9.** Presently we use quarterly feedbacks on projects, we do presentations on them, reports, there is also supposed to be mentoring and coaching going on which is semi-structured **DOD10.** Currently we have technical meetings where we share knowledge or any problems that we have encountered **LIS18.** Internally we do presentations and take us through the information covered at the workshop. **KPE18**
We should make it fun and exciting, any material should be visual and easy to look at because that the way most people learn anyway **JIS5.**	One method is interviewing people, get the knowledge and store it in the database **MLH10.**

Take what's in your head if you have been there for 10 or 20 years and put it into systems, into processes, into policies into all of that is available to the person who is coming in easily and effectively available **JIS5.**	There is the website to store knowledge, communities of practice, innovation documenting, making sure that we document inventive practices **SMI10.**
Policies should be developed in a cross-cutting consultation with everyone **ROD5.**	Knowledge management has three components, there is people, systems and processes but for us MILE we took a deliberate focus on people and we don't prioritize other things **FMI8.**
You have to create incentives for knowledge management. There must be a desire and you as an employer must create that desire/opportunity **DOD8.**	I think to improve awareness to our users we can have training sessions, have awareness programs just to give people more background **LIS5.**
The organisation doesn't have a culture of knowledge management, a culture shift or paradigm shift those are still issues which must be addressed within the organisation **DOD9.**	

APPENDIX E: Crosstabulations for "Yes" Responses

Appendix E – 1: Public organisation characteristics: Gender Crosstabulation

Crosstabulation: Gender		Gender		Total
		Male	Female	
The current hierarchy structure enables communication flow that facilitates learning?	Count	64	56	120
	% of Total	31.8%	27.9%	59.7%
The organisation gives formal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?	Count	67	51	118
	% of Total	33.3%	25.4%	58.7%
The organisation gives informal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?	Count	60	56	116
	% of Total	29.9%	27.9%	57.7%
Does your organisation encourage workers to participate in project teams with external experts?	Count	38	29	67
	% of Total	18.9%	14.4%	33.3%
Does your organisation encourage interdepartmental sessions where lessons are learned?	Count	44	35	79
	% of Total	21.9%	17.4%	39.3%
Does your organisation dedicate resources to detecting and obtaining external knowledge and communicating it within your firm or organisation?	Count	33	35	68
	% of Total	16.4%	17.4%	33.8%
The organization provides environment for improving work knowledge of the employees	Count	76	63	139
	% of Total	37.8%	31.3%	69.2%
Resources and facilities for individual development is available to all levels in the organisation.	Count	52	44	96
	% of Total	25.9%	21.9%	47.8%

Total	Count	109	92	201
	% of Total	54.2%	45.8%	100.0%
Percentages and totals are based on respondents.				
a. Dichotomy group tabulated at value 1.				

Appendix E – 2: Public organisation characteristics: Educational Level Crosstabulation

Crosstabulation: Education Level								
		Education Level						
		Less than Matric	Matric	Post Matric Certificate	Degree	Diploma	Postgraduate Degree/Diploma	Total
The current hierarchy structure enables communication flow that facilitates learning?	Count	1	4	9	37	30	39	120
	% of Total	0.5%	2.0%	4.5%	18.4%	14.9%	19.4%	59.7%
The organisation gives formal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?	Count	2	7	8	37	25	39	118
	% of Total	1.0%	3.5%	4.0%	18.4%	12.4%	19.4%	58.7%
The organisation gives informal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?	Count	3	5	13	32	25	38	116
	% of Total	1.5%	2.5%	6.5%	15.9%	12.4%	18.9%	57.7%
Does your organisation encourage workers to participate in project teams with external experts?	Count	1	2	5	15	13	31	67
	% of Total	0.5%	1.0%	2.5%	7.5%	6.5%	15.4%	33.3%
	Count	1	4	5	17	18	34	79

Does your organisation encourage interdepartmental sessions where lessons are learned?	% of Total	0.5%	2.0%	2.5%	8.5%	9.0%	16.9%	39.3%
Does your organisation dedicate resources to detecting and obtaining external knowledge and communicating it within your firm or organisation?	Count	1	4	4	18	18	23	68
	% of Total	0.5%	2.0%	2.0%	9.0%	9.0%	11.4%	33.8%
The organization provides environment for improving work knowledge of the employees	Count	2	7	13	37	31	49	139
	% of Total	1.0%	3.5%	6.5%	18.4%	15.4%	24.4%	69.2%
Resources and facilities for individual development is available to all levels in the organisation.	Count	3	3	10	24	23	33	96
	% of Total	1.5%	1.5%	5.0%	11.9%	11.4%	16.4%	47.8%
Total	Count	3	11	16	55	48	68	201
	% of Total	1.5%	5.5%	8.0%	27.4%	23.9%	33.8%	100.0%

Percentages and totals are based on respondents.

a. Dichotomy group tabulated at value 1.

Appendix E – 3: Public organisation characteristics: Work Experience Crosstabulation

Crosstabulation: Work Experience						
		Number of years working for eThekwini Municipality (Binned)				Total
		<= 1.5	1.6 - 15.2	15.3 - 28.8	28.9+	
	Count	17	83	14	6	120

The current hierarchy structure enables communication flow that facilitates learning?	% of Total	8.5%	41.3%	7.0%	3.0%	59.7%
The organisation gives formal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?	Count	18	76	17	7	118
	% of Total	9.0%	37.8%	8.5%	3.5%	58.7%
The organisation gives informal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?	Count	17	70	20	9	116
	% of Total	8.5%	34.8%	10.0%	4.5%	57.7%
Does your organisation encourage workers to participate in project teams with external experts?	Count	9	42	9	7	67
	% of Total	4.5%	20.9%	4.5%	3.5%	33.3%
Does your organisation encourage interdepartmental sessions where lessons are learned?	Count	11	48	15	5	79
	% of Total	5.5%	23.9%	7.5%	2.5%	39.3%
Does your organisation dedicate resources to detecting and obtaining external knowledge and communicating it within your firm or organisation?	Count	12	46	7	3	68
	% of Total	6.0%	22.9%	3.5%	1.5%	33.8%
The organization provides environment for improving work knowledge of the employees	Count	19	93	20	7	139
	% of Total	9.5%	46.3%	10.0%	3.5%	69.2%
Resources and facilities for individual development is available to all levels in the organisation.	Count	13	59	17	7	96
	% of Total	6.5%	29.4%	8.5%	3.5%	47.8%
Total	Count	25	134	30	12	201

	% of Total	12.4%	66.7%	14.9%	6.0%	100.0%

Percentages and totals are based on respondents.

a. Dichotomy group tabulated at value 1.

Appendix E – 4: Knowledge Creation and Sharing: Gender Crosstabulation

Crosstabulation: Gender				
		Gender		
		Male	Female	Total
Staff and fellow employees are rewarded for contribution to organisational learning i.e. through regular feedbacks, employee recognition etc.	Count	33	24	57
	% of Total	18.6%	13.6%	32.2%
There are well defined processes for sharing of knowledge	Count	38	32	70
	% of Total	21.5%	18.1%	39.5%
There are well defined processes for creation of knowledge	Count	33	26	59
	% of Total	18.6%	14.7%	33.3%
Employee exchanges of information for solving problems are encouraged in the organization.	Count	76	56	132
	% of Total	42.9%	31.6%	74.6%
Staff are encouraged to visit other organisations (in the same field) and expected to give a detailed feedback.	Count	25	16	41
	% of Total	14.1%	9.0%	23.2%
Knowledge exchanges are documented for future reference	Count	44	28	72
	% of Total	24.9%	15.8%	40.7%
Does your organisation capture and use knowledge obtained from other industry sources such as industrial associations, competitors, clients and suppliers?	Count	47	29	76
	% of Total	26.6%	16.4%	42.9%
	Count	47	36	83

Does your organisation capture and use knowledge obtained from public research institutions including universities and government laboratories?	% of Total	26.6%	20.3%	46.9%
Total	Count	97	80	177
	% of Total	54.8%	45.2%	100.0%
Percentages and totals are based on respondents.				
a. Dichotomy group tabulated at value 1.				

Appendix E – 5: Knowledge Creation and Sharing: Educational Level Crosstabulation

Crosstabulation: Education Level								
		Education Level						
		Less than Matric	Matric	Post Matric Certificate	Degree	Diploma	Postgraduate Degree/Diploma	Total
Staff and fellow employees are rewarded for contribution to organisational learning i.e. through regular feedbacks, employee recognition etc.	Count	1	2	7	16	13	18	57
	% of Total	0.6%	1.1%	4.0%	9.0%	7.3%	10.2%	32.2%
There are well defined processes for sharing of knowledge	Count	1	3	6	22	17	21	70
	% of Total	0.6%	1.7%	3.4%	12.4%	9.6%	11.9%	39.5%
There are well defined processes for creation of knowledge	Count	1	5	3	16	15	19	59
	% of Total	0.6%	2.8%	1.7%	9.0%	8.5%	10.7%	33.3%
Employee exchanges of information for solving problems are encouraged in the organization.	Count	1	9	8	40	34	40	132
	% of Total	0.6%	5.1%	4.5%	22.6%	19.2%	22.6%	74.6%
	Count	1	3	1	8	7	21	41

Staff are encouraged to visit other organisations (in the same field) and expected to give a detailed feedback.	% of Total	0.6%	1.7%	0.6%	4.5%	4.0%	11.9%	23.2%
Knowledge exchanges are documented for future reference	Count	1	7	3	14	21	26	72
	% of Total	0.6%	4.0%	1.7%	7.9%	11.9%	14.7%	40.7%
Does your organisation capture and use knowledge obtained from other industry sources such as industrial associations, competitors, clients and suppliers?	Count	1	3	3	20	17	32	76
	% of Total	0.6%	1.7%	1.7%	11.3%	9.6%	18.1%	42.9%
Does your organisation capture and use knowledge obtained from public research institutions including universities and government laboratories?	Count	1	4	2	21	19	36	83
	% of Total	0.6%	2.3%	1.1%	11.9%	10.7%	20.3%	46.9%
Total	Count	1	11	13	48	43	61	177
	% of Total	0.6%	6.2%	7.3%	27.1%	24.3%	34.5%	100.0%
Percentages and totals are based on respondents.								
a. Dichotomy group tabulated at value 1.								

Appendix E – 6: Knowledge Creation and Sharing: Work Experience Crosstabulation

Crosstabulation: Work Experience						
		Number of years working for eThekwini Municipality (Binned)				
		<= 1.5	1.6 - 15.2	15.3 - 28.8	28.9+	Total
	Count	11	35	4	7	57

Staff and fellow employees are rewarded for contribution to organisational learning i.e. through regular feedbacks, employee recognition etc.	% of Total	6.2%	19.8%	2.3%	4.0%	32.2%
There are well defined processes for sharing of knowledge	Count	14	46	5	5	70
	% of Total	7.9%	26.0%	2.8%	2.8%	39.5%
There are well defined processes for creation of knowledge	Count	12	37	8	2	59
	% of Total	6.8%	20.9%	4.5%	1.1%	33.3%
Employee exchanges of information for solving problems are encouraged in the organization.	Count	18	85	19	10	132
	% of Total	10.2%	48.0%	10.7%	5.6%	74.6%
Staff are encouraged to visit other organisations (in the same field) and expected to give a detailed feedback.	Count	7	25	5	4	41
	% of Total	4.0%	14.1%	2.8%	2.3%	23.2%
Knowledge exchanges are documented for future reference	Count	15	47	7	3	72
	% of Total	8.5%	26.6%	4.0%	1.7%	40.7%
Does your organisation capture and use knowledge obtained from other industry sources such as industrial associations, competitors, clients and suppliers?	Count	13	47	10	6	76
	% of Total	7.3%	26.6%	5.6%	3.4%	42.9%
Does your organisation capture and use knowledge obtained from public research institutions including universities and government laboratories?	Count	10	53	14	6	83
	% of Total	5.6%	29.9%	7.9%	3.4%	46.9%
Total	Count	27	113	26	11	177
	% of Total	15.3%	63.8%	14.7%	6.2%	100.0%

Percentages and totals are based on respondents.

a. Dichotomy group tabulated at value 1.

APPENDIX F: Relationship Summaries

Relationship between **resources facilities for individual / There are well defined processes for sharing of knowledge and for creation of knowledge**

Variables	Chi-Square	Df	*P*-value	Phi
There are well defined processes for sharing of knowledge	29.536	4	.000	.359
Creation of knowledge	24.859	4	.000	.329

Relationship between **staff are encourage to visit other organisations/ The organisation gives formal opportunities for sharing knowledge / the organisation gives informal opportunities for sharing knowledge and experiences with fellow workers.**

Variables	Chi-Square	Df	*P*-value	Phi
The organisation gives formal opportunities for sharing knowledge	18.902	4	.001	.287
The organisation gives informal opportunities for sharing knowledge and experiences with fellow workers	20.625	4	.000	.300

Relationship between **Staff and fellow employees are rewarded for contribution to organisational learning i.e. through regular feedbacks, employee recognition etc / Does your organisation encourage workers to participate in project teams with external experts? / Does your organisation encourage interdepartmental sessions where lessons are learned? / Does your organisation allow for social interaction among individuals within the organisation?**

Variables	Chi-Square	Df	*P*-value	Phi
Does your organisation encourage workers to participate in project teams with external experts	27.735	4	.000	.348
Does your organisation encourage interdepartmental sessions where lessons are learned?	32.509	4	.000	.377
Does your organisation allow for social interaction among individuals within the organisation	18.585	4	.001	.285

Relationship between Employee exchanges of information for solving problems are encouraged in the organization / Does your organisation encourage workers to participate in project teams with external experts? / Does your organisation encourage interdepartmental sessions where lessons are learned? / Does your organisation allow for social interaction among individuals within the organisation?

Variables	Chi-Square	Df	*P*-value	Phi
Does your organisation encourage workers to participate in project teams with external experts	**29.300**	**4**	**.000**	**.358**
Does your organisation encourage interdepartmental sessions where lessons are learned?	**23.129**	**4**	**.000**	**.318**
Does your organisation allow for social interaction among individuals within the organisation	**22.840**	**4**	**.000**	**.316**

Relationship between Does your organisation dedicate resources to detecting and obtaining external knowledge and communicating it within your firm or organisation / Knowledge exchanges are documented for future reference? / Does your organisation capture and use knowledge obtained from other industry sources such as industrial associations, competitors, clients and suppliers? / Does your organisation capture and use knowledge obtained from public research institutions including universities and government laboratories?

Variables	Chi-Square	Df	*P*-value	Phi
Knowledge exchanges are documented for future reference?	**38.633**	**4**	**.000**	**.411**
Does your organisation capture and use knowledge obtained from other industry sources such as industrial associations, competitors, clients and suppliers?	**79.889**	**4**	**.000**	**.591**
Does your organisation capture and use knowledge obtained from public research institutions including universities and government laboratories?	**96.694**	**4**	**.000**	**.650**

APPENDIX G: Contingency Tables

Appendix G – 1: The current hierarchy structure enables communication flow that facilitates learning? * There are well defined processes for sharing of knowledge

Crosstabulation						
			(B) There are well defined processes for sharing of knowledge			
			No	Yes	Don't know	Total
(A) The current hierarchy structure enables communication flow that facilitates learning?	No	Count	68	6	6	80
		% of Total	29.7%	2.6%	2.6%	34.9%
	Yes	Count	50	53	17	120
		% of Total	21.8%	23.1%	7.4%	52.4%
	Don't know	Count	10	11	8	29
		% of Total	4.4%	4.8%	3.5%	12.7%
Total		Count	128	70	31	229
		% of Total	55.9%	30.6%	13.5%	100.0%

Appendix G – 2: The current hierarchy structure enables communication flow that facilitates learning? * There are well defined processes for creation of knowledge

Crosstabulation						
			There are well defined processes for creation of knowledge			
			No	Yes	Don't know	Total
The current hierarchy structure enables communication flow that facilitates learning?	No	Count	59	8	13	80
		% of Total	25.8%	3.5%	5.7%	34.9%
	Yes	Count	45	47	28	120
		% of Total	19.7%	20.5%	12.2%	52.4%

	Don't know	Count	10	4	15	29
		% of Total	4.4%	1.7%	6.6%	12.7%
Total		Count	114	59	56	229
		% of Total	49.8%	25.8%	24.5%	100.0%

Appendix G – 3: Resources and facilities for individual development is available to all levels in the organisation. * There are well defined processes for sharing of knowledge

Crosstabulation						
			There are well defined processes for sharing of knowledge			Total
			No	Yes	Don't know	
Resources and facilities for individual development is available to all levels in the organisation.	No	Count	78	22	9	109
		% of Total	34.1%	9.6%	3.9%	47.6%
	Yes	Count	37	44	15	96
		% of Total	16.2%	19.2%	6.6%	41.9%
	Don't know	Count	13	4	7	24
		% of Total	5.7%	1.7%	3.1%	10.5%
Total		Count	128	70	31	229
		% of Total	55.9%	30.6%	13.5%	100.0%

Appendix G – 4: Resources and facilities for individual development is available to all levels in the organisation. * There are well defined processes for creation of knowledge

Crosstabulation						
			There are well defined processes for creation of knowledge			Total
			No	Yes	Don't know	
	No	Count	72	21	16	109

Resources and facilities for individual development is available to all levels in the organisation.		% of Total	31.4%	9.2%	7.0%	47.6%
	Yes	Count	33	33	30	96
		% of Total	14.4%	14.4%	13.1%	41.9%
	Don't know	Count	9	5	10	24
		% of Total	3.9%	2.2%	4.4%	10.5%
Total		Count	114	59	56	229
		% of Total	49.8%	25.8%	24.5%	100.0%

Appendix G – 5: Staff are encouraged to visit other organisations (in the same field) and expected to give a detailed feedback. * The organisation gives formal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?

Crosstabulation						
			The organisation gives formal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?			
			No	Yes	Don't know	Total
Staff are encouraged to visit other organisations (in the same field) and expected to give a detailed feedback.	No	Count	80	71	8	159
		% of Total	34.9%	31.0%	3.5%	69.4%
	Yes	Count	11	25	5	41
		% of Total	4.8%	10.9%	2.2%	17.9%
	Don't know	Count	4	22	3	29
		% of Total	1.7%	9.6%	1.3%	12.7%
Total		Count	95	118	16	229
		% of Total	41.5%	51.5%	7.0%	100.0%

Appendix G – 6: Staff are encouraged to visit other organisations (in the same field) and expected to give a detailed feedback. * The organisation gives informal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?

Crosstabulation						
			The organisation gives informal opportunities for sharing knowledge and experiences with fellow workers for mutual learning?			Total
			No	Yes	Don't know	
Staff are encouraged to visit other organisations (in the same field) and expected to give a detailed feedback.	No	Count	68	74	17	159
		% of Total	29.7%	32.3%	7.4%	69.4%
	Yes	Count	6	25	10	41
		% of Total	2.6%	10.9%	4.4%	17.9%
	Don't know	Count	4	17	8	29
		% of Total	1.7%	7.4%	3.5%	12.7%
Total		Count	78	116	35	229
		% of Total	34.1%	50.7%	15.3%	100.0%

Appendix G – 7: Staff and fellow employees are rewarded for contribution to organisational learning i.e. through regular feedbacks, employee recognition etc. * Does your organisation encourage workers to participate in project teams with external experts?

Crosstabulation						
			Does your organisation encourage workers to participate in project teams with external experts?			Total
			No	Yes	Don't know	
Staff and fellow employees are rewarded for contribution to organisational learning i.e. through regular feedbacks, employee recognition etc.	No	Count	88	27	23	138
		% of Total	38.4%	11.8%	10.0%	60.3%
	Yes	Count	17	28	12	57
		% of Total	7.4%	12.2%	5.2%	24.9%
	Don't know	Count	11	12	11	34

		% of Total	4.8%	5.2%	4.8%	14.8%
Total		Count	116	67	46	229
		% of Total	50.7%	29.3%	20.1%	100.0%

Appendix G – 8: Staff and fellow employees are rewarded for contribution to organisational learning i.e. through regular feedbacks, employee recognition etc. * Does your organisation encourage interdepartmental sessions where lessons are learned?

Crosstabulation						
			Does your organisation encourage interdepartmental sessions where lessons are learned?			Total
			No	Yes	Don't know	
Staff and fellow employees are rewarded for contribution to organisational learning i.e. through regular feedbacks, employee recognition etc.	No	Count	86	34	18	138
		% of Total	37.6%	14.8%	7.9%	60.3%
	Yes	Count	18	34	5	57
		% of Total	7.9%	14.8%	2.2%	24.9%
	Don't know	Count	12	11	11	34
		% of Total	5.2%	4.8%	4.8%	14.8%
Total		Count	116	79	34	229
		% of Total	50.7%	34.5%	14.8%	100.0%

Appendix G – 9: Staff and fellow employees are rewarded for contribution to organisational learning i.e. through regular feedbacks, employee recognition etc. * Does your organisation allow for social interaction among individuals within the organisation?

Crosstabulation						
			Does your organisation allow for social interaction among individuals within the organisation?			Total
			No	Yes	Don't know	
	No	Count	53	76	9	138

Staff and fellow employees are rewarded for contribution to organisational learning i.e. through regular feedbacks, employee recognition etc.		% of Total	23.1%	33.2%	3.9%	60.3%
	Yes	Count	13	41	3	57
		% of Total	5.7%	17.9%	1.3%	24.9%
	Don't know	Count	5	21	8	34
		% of Total	2.2%	9.2%	3.5%	14.8%
Total		Count	71	138	20	229
		% of Total	31.0%	60.3%	8.7%	100.0%

Appendix G – 10: Employee exchanges of information for solving problems are encouraged in the organization. * Does your organisation encourage workers to participate in project teams with external experts?

Crosstabulation						
			Does your organisation encourage workers to participate in project teams with external experts?			
			No	Yes	Don't know	Total
Employee exchanges of information for solving problems are encouraged in the organization.	No	Count	50	15	8	73
		% of Total	21.8%	6.6%	3.5%	31.9%
	Yes	Count	56	50	26	132
		% of Total	24.5%	21.8%	11.4%	57.6%
	Don't know	Count	10	2	12	24
		% of Total	4.4%	0.9%	5.2%	10.5%
Total		Count	116	67	46	229
		% of Total	50.7%	29.3%	20.1%	100.0%

Appendix G – 11: Employee exchanges of information for solving problems are encouraged in the organization. * Does your organisation encourage interdepartmental sessions where lessons are learned?

Crosstabulation						
			Does your organisation encourage interdepartmental sessions where lessons are learned?			Total
			No	Yes	Don't know	
Employee exchanges of information for solving problems are encouraged in the organization.	No	Count	51	14	8	73
		% of Total	22.3%	6.1%	3.5%	31.9%
	Yes	Count	53	60	19	132
		% of Total	23.1%	26.2%	8.3%	57.6%
	Don't know	Count	12	5	7	24
		% of Total	5.2%	2.2%	3.1%	10.5%
Total		Count	116	79	34	229
		% of Total	50.7%	34.5%	14.8%	100.0%

Appendix G – 12: Employee exchanges of information for solving problems are encouraged in the organization. * Does your organisation allow for social interaction among individuals within the organisation?

Crosstabulation						
			Does your organisation allow for social interaction among individuals within the organisation?			Total
			No	Yes	Don't know	
Employee exchanges of information for solving problems are encouraged in the organization.	No	Count	36	32	5	73
		% of Total	15.7%	14.0%	2.2%	31.9%
	Yes	Count	28	94	10	132

		% of Total	12.2%	41.0%	4.4%	57.6%
	Don't know	Count	7	12	5	24
		% of Total	3.1%	5.2%	2.2%	10.5%
Total		Count	71	138	20	229
		% of Total	31.0%	60.3%	8.7%	100.0%

Appendix G – 13: Does your organisation dedicate resources to detecting and obtaining external knowledge and communicating it within your firm or organisation? * Knowledge exchanges are documented for future reference

Crosstabulation						
			Knowledge exchanges are documented for future reference			
			No	Yes	Don't know	Total
Does your organisation dedicate resources to detecting and obtaining external knowledge and communicating it within your firm or organisation?	No	Count	54	20	13	87
		% of Total	23.6%	8.7%	5.7%	38.0%
	Yes	Count	20	31	17	68
		% of Total	8.7%	13.5%	7.4%	29.7%
	Don't know	Count	18	21	35	74
		% of Total	7.9%	9.2%	15.3%	32.3%
Total		Count	92	72	65	229
		% of Total	40.2%	31.4%	28.4%	100.0%

Appendix G – 14: Does your organisation dedicate resources to detecting and obtaining external knowledge and communicating it within your firm or organisation? * Does your organisation capture and use knowledge obtained from other industry sources such as industrial associations, competitors, clients and suppliers?

Crosstabulation						
			Does your organisation capture and use knowledge obtained from other industry sources such as industrial associations, competitors, clients and suppliers?			
			No	Yes	Don't know	Total
Does your organisation dedicate resources to detecting and obtaining external knowledge and communicating it within your firm or organisation?	No	Count	50	19	18	87
		% of Total	21.8%	8.3%	7.9%	38.0%
	Yes	Count	14	40	14	68
		% of Total	6.1%	17.5%	6.1%	29.7%
	Don't know	Count	8	17	49	74
		% of Total	3.5%	7.4%	21.4%	32.3%
Total		Count	72	76	81	229
		% of Total	31.4%	33.2%	35.4%	100.0%

Appendix G – 15: Does your organisation dedicate resources to detecting and obtaining external knowledge and communicating it within your firm or organisation? * Does your organisation capture and use knowledge obtained from public research institutions including universities and government laboratories?

Crosstabulation						
			Does your organisation capture and use knowledge obtained from public research institutions including universities and government laboratories?			
			No	Yes	Don't know	Total
Does your organisation dedicate resources to detecting and obtaining external knowledge and communicating it within your firm or organisation?	No	Count	44	24	19	87
		% of Total	19.2%	10.5%	8.3%	38.0%
	Yes	Count	7	46	15	68
		% of Total	3.1%	20.1%	6.6%	29.7%
	Don't know	Count	7	13	54	74
		% of Total	3.1%	5.7%	23.6%	32.3%
Total		Count	58	83	88	229
		% of Total	25.3%	36.2%	38.4%	100.0%

APPENDIX H: Respondent Coding

The table below shows the codes of respondents and which Department or Unit the respondent belongs to. The numbers that are assigned to the codes in the text relate to the interview question which the person was responding to.

Respondent	Department or Unit
GLH	Libraries and Heritage Department
TLH	Libraries and Heritage Department
MLH	Libraries and Heritage Department
FMI	Municipal Institute of Learning
SMI	Municipal Institute of Learning
ROD	Organisational Development and Change Management Unit
DOD	Organisational Development and Change Management Unit
NPE	Performance Management Unit
KPE	Performance Management Unit
JIS	Information Services Department
LIS	Information Services Department
MSD	Skills Development Unit

APPENDIX I: Ethical Clearance