



**AN EXPLORATION OF SUPPLY CHAIN MANAGEMENT
PRACTICES IN THE WEST RAND DISTRICT
MUNICIPALITIES**

by

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Submitted in partial fulfilment of the requirements

for the degree of

MTECH IN BUSINESS ADMINISTRATION

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: PROF I.M. AMBE

March 2016

DECLARATION

I declare that **AN EXPLORATION OF SUPPLY CHAIN MANAGEMENT PRACTICES IN THE WEST RAND DISTRICT MUNICIPALITIES** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.



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ACKNOWLEDGEMENTS

A study of this enormity depends on contributions from a wide range of people for its achievement. Firstly, I would like to express my wholehearted thanks to the Almighty God, the Provider. Without Him and His blessings this study would not have been possible.

I would like to take the opportunity to acknowledge the support and contribution from many people to this study.

I would like to sincerely thank my supervisor, Prof IM Ambe, for his invaluable guidance, encouragement and support throughout this study, and especially for his confidence in me.

To Dr J Mitonga-Monga; your invaluable assistance and support in data analysing of this study is much appreciated.

To Nthabeleng Mmako, your contribution and encouragement won't go unnoticed; you inspired me a lot.

To my mother Maureen Maleka, father Andrew Maleka, uncle Prof Nehemia Mokgalong, aunt Dr Mogane and my late sister Ribs, my previous colleagues from StatsSA and Randfontein Local Municipality, and my SCM manager and Finance manager, thank you for your understanding and encouragement in many ways.

To my wonderful wife and two daughters, thank you for your continued understanding and support. It is greatly appreciated.

I would like to thank all the respondents for their time, as well as their interest in my study.

The supportive and enabling encouragement from my family and friends is much appreciated.

ABSTRACT

Despite reform processes in the employment of Supply Chain Management (SCM) as a strategic tool in the South African public sector, there are predicaments in SCM practices, especially in municipalities. This notwithstanding, research that demystifies the SCM implementation practices in local municipalities within the West Rand District, SA is lacking. This study explores supply chain management practices implemented at the West Rand District municipalities. An exploratory and descriptive study was conducted based on a semi-structured questionnaire. The collected data was analysed descriptively using SPSS, inferentially using Fisher Exact test, as well as by content analysis using Atlas.ti.

The findings of the study revealed that overall the West Rand District municipalities have adopted and implemented the SCM practices. However, SCM practices are sometimes not always aligned with government policies. The most implemented SCM practice was demand management, followed by acquisition management. The least implemented practices were logistics, disposal, risk and performance management. No significant differences were observed among the municipalities, except for municipality C (within its own supply chain practitioners). The municipalities face serious SCM challenges in implementing their SCM practices. These challenges stem from: a lack of training for SCM staff, lack of proper capacity, poor planning, and ineffective black economic empowerment in the West Rand District. Based on the results, there is a need of training for SCM staff, capacity building, better planning interventions, and more effective black economic empowerment. It should be reiterated that the lack of proper SCM processes and procedures are the root cause of problems in service delivery in South Africa. The study concludes by recommending that SCM practitioners should regularly update their SCM policies, ensure proper compliance with the elements of SCM, as well as to source competencies, skills, and knowledge from higher education institutions and private accredited service providers.

Key words: Supply chain management, SCM challenges, West Rand district, Municipalities.

LIST OF ABBREVIATIONS

AGSA	Auditor General South Africa
BBBEE	Broad Based Black Economic Empowerment
BEE	Black Economic Empowerment
BSC	Bid specification committee
BEC	Bid evaluation committee
BAC	Bid adjudication committee
CFO	Chief Financial Officer
CIDBA	Construction Industry Development Board
COT	City of Tshwane
CSCMP	Council of supply chain management professionals
CPAR	Country procurement assessment review
EDI	Electronic data interchange
IDP	Integrated development planning
GCC	General conditions of contract
HDI	Historical disadvantaged communities
MFMA	Municipal Finance Management Act
NT	National Treasury
PRASA	Passenger rail agency of South Africa
PFMA	Public Finance Management Act
PPPFA	Preferential Procurement Policy Framework Act
RLM	Randfontein local municipality
RLM	Rustenburg local municipality
SAMDI	South African Management Development Institute
SCM	Supply chain management

SMME	Small micro medium enterprise
SPSS	Statistical program for social sciences
STATSSA	Statistics South Africa
WRDM	West Rand District Municipality

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CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 INTRODUCTION

Supply chain management (SCM) is an important concept in today's business environment as it contributes significantly to the bottom line (Agus, 2011:269). SCM has received significant attention across different business industries and sectors (Naudé and Badenhorst-Weiss, 2011: 71). According to Arlbjørn, Freytag & de Haas (2011:277), SCM is a proven business strategy that has gained wide acceptance in recent years due to the increasing customer demands for quality, delivery and speed. Increased speeds of communicating coupled with cost reduction and more independent suppliers, provider and customer relationships have accelerated the integration of supply chains on a widespread basis (Malhan, 2015:21). Hence, SCM has witnessed values created through the integration and coordination of supply, demand and relationships in order to satisfy customers in an effective and profitable manner.

In South Africa, SCM is an integral part of the South public sector financial management. According to the South African National Treasury (NT) (NT, 2005), the concept of SCM was adopted in 2003 due to deficiencies in the public procurement processes (previously known as the tender board system). Procurement reform processes in the South African public sector were initiated and directed at the promotion of principles of good governance, and the introduction of a preference system to address socio-economic objectives (Ngobeni, 2011:29). However, the system resulted in a lack of accountability, and improper application and implementation of the Preferential Procurement Policy Framework Act (PPPFA) (Wall, Watermeyer & Pirie, 2012:1). The purpose of the adoption of SCM in the South African public sector was to introduce internationally accepted best procurement practice principles, while at the same time addressing Government's preferential procurement policy objectives (Office of Government of Commerce [OGC], 2005). SCM is aimed at adding value at each stage of the procurement process, from the demand of goods or services to their acquisition, managing the logistics process and finally, after use, to their disposal (Ambe and Badenhorst-

Weiss, 2012:244). In doing so, it needs to address deficiencies in current practices related to procurement, contract management, inventory and asset control and obsolescence planning (NT, 2003; Mkhize, 2004). Mnguni (2012:49) asserted that policies governing SCM implementation across all spheres of government were developed. Each government entity had to adopt the SCM policy to suit its needs (NT, 2015:1). By virtue of the adoption of SCM practices in the South African public sector, national and provincial departments; local government (municipalities) as well as parastatals are expected to implement SCM efficiently and effectively to ensure good governance, preference and the socio-economic objectives of the country.

Despite the adoption of SCM policies and practices across all spheres of government, its implementation remains a challenge, especially in local government. This is evidenced by daily reports of irregularities in newspapers, television, radio and social media. A report by the Auditor General of South Africa (AG) (AG, 2015) highlights that municipalities are still facing challenges of non-compliance and irregular expenditure. The municipal audit report showed that in the 2012-13 financial year, irregular expenditures of R11 437 million were reported. The Auditor General Report (2012) indicated that R141 million worth of contracts were awarded to suppliers in which family members of employees had an interest. Seen in this light, this study explores SCM practices to determine if the West Rand district municipalities have fully implemented SCM and are practising SCM as required by the National Treasury.

1.2 CONTEXTUALISATION OF THE PROBLEM

This section of the chapter presents a contextualisation of what necessitated the study. The section begins with an overview of SCM; SCM in the South African public sector; a review of the West Rand district municipalities and the challenges of SCM in municipalities.

1.2.1 Background to Supply Chain Management

Supply chain management (SCM) is a term used in business literature to refer to the control of materials, information, and finances as they move in a process from supplier to manufacturer to wholesaler to retailer, and ultimately to the consumer (Chopra and Meindl, 2007:13). The term supply chain is inspired by the product flow

that should be delivered to citizens or businesses as it passes through several organisations. The main objective of SCM is to satisfy end users and increase profitability for the organisation (Peng, Lawrence, Snyder, Lim and Liu, 2011:1).

According to the Council of Supply Chain Management Professionals (CSCMP, 2007), *"Supply chain management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. It also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third party service providers, and customers."* In a functional sense, this focus on activities and relationships implies that logistics, marketing, purchasing/supply, and production/operations are involved in SCM (Ambe & Badenhorst-Weiss, 2011:13389).

The Institution for Supply Chain Management (2014) defines SCM as the identification, acquisition, access, positioning and management of resources and related capabilities that an organisation requires or potentially desires in the achievement of strategic objectives. SCM is an integrating function with the primary responsibility for linking major business functions and business processes within and across companies into a cohesive and high-performing business model. It includes all of the logistics management activities as well as manufacturing operations, and it drives the coordination of processes and activities with and across marketing, sales, product design, and finance and information technology (Hugo, Badenhorst and van Biljon 2006:8). Lambert (2005:3) asserted that SCM is the management of relationships in the network of organisations, from end customers through original suppliers, using the core cross-functional business processes to create value for customers and other related stakeholders. Therefore, SCM encompasses the planning and management of all the activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third party service providers and customers. In essence, supply chain management integrates supply demand management within and across companies.

1.2.2 South African public sector SCM

The South African public sector supply chain has undergone transformation through the introduction of procurement reforms. The procurement reforms started in 1995

and were directed at the promotion of the principles of good governance and the introduction of a preference system to address certain socio-economic objectives.

SCM was introduced in the South African public sector as a measure to alleviate the deficiencies of the previous tender board system, and with the objective to achieve good governance and economic development (Mkhize, 2004:5). The SCM process is guided by policies and regulations. The National Treasury developed an SCM policy which was to be adopted by all government entities to suit their needs. Based on the adoption of SCM, the various spheres of government had to adopt the policy to suit their needs, and to give considerations to relevant legislations and regulations guided by the SCM business model.

1.2.2.1 Supply chain management policy

Preceding the introduction of SCM, a SCM document titled "*Policy to guide uniformity in procurement reform processes in government*" was developed in conjunction with provincial treasuries to replace the outdated procurement and provisional practices in municipal entities (NT, 2007). In 2005, "*Supply chain management: a guide for accounting officers of municipalities and municipal entities*", was developed to give guidance on the adoption of the integrated SCM function and the related managerial responsibilities assigned to accounting officers in terms of Sections 62 and 95 of the Municipal Finance Management Act (MFMA) (RLM, 2011). The guide explains how Chapter 11, Part 1 of the MFMA, the municipal SCM regulations, and the SCM policy of the council or board of directors can be adopted into an operational process for accounting officers at each step of the SCM cycle. The principle behind the policy guide is based on the fact that managers should be given the flexibility to manage within a framework that satisfies the constitutional requirements of transparency and accountability (NT, 2005:9).

1.2.2.2 Legislation governing SCM

The SCM processes and activities of municipalities today are multifaceted. As a result, supply chain policies are complex and impact significantly on the smooth functioning of the municipality and its competitive position (Ngobeni, 2011). Numerous variables and a large body of information influence SCM policymaking. Without a legislative framework, political representatives will not be able to make

informed and intelligent decisions. SCM is governed and guided by a number of legislative requirements. Some of these are presented in Table 1.1 below.

Table 1.1: Legislative requirements governing SCM

Act	What is the contribution?
Constitution of the Republic of South Africa, 1996 (Act No 108 of 1996)	Provides procurement objectives and establishes government's policy for preferencing. Establishes requirements for the award of contracts to be lawful, reasonable and procedurally fair.
The Promotion of Equality and the Prevention of Unfair Discrimination (Act 4 of 2000)	Prohibits the state or any person from discriminating unfairly against any person on the grounds of race or gender through the denial of access to contractual opportunities for rendering services or by failing to take steps to reasonably accommodate the needs of such persons.
Preferential Procurement Policy Framework (Act 5 of 2000)	Establishes the manner in which preferential procurement policies are to be implemented.
Local Government Municipal Finance Management (Act 56 of 2003)	All reasonable steps need to be taken to ensure that proper mechanisms and separation of duties in the SCM system are in place to minimise the likelihood of fraud, corruption, favouritism and unfair irregular practices.
Construction Industry Development Board (Act 38 of 2000)	<p>Establishes the means by which the Board can promote and implement policies, programmes and projects, including those aimed at procurement reform, standardisation and uniformity in procurement documentation, practices and procedures within the framework of the procurement policy of government, through the establishment of:</p> <ul style="list-style-type: none"> ▪ a national register of contractors (and if required, consultants and suppliers) ▪ to manage public sector procurement risk and facilitate public procurement; ▪ a register of projects above a financial value with data relating to contracts ▪ awarded and completed and a best practice project assessment scheme; ▪ best practices <p>Establishes a code of conduct for the parties engaged in construction procurement.</p>
Local Government Municipal System Act (Act 38 of 2000)	Establishes a regulatory framework for SCM which includes procurement in municipalities and municipal entities.

Broad-based Black Economic Empowerment (Act 53 of 2003)	<p>Establishes a code of good practice to inform the:</p> <ul style="list-style-type: none"> ▪ Development of qualification criteria for the issuing of licences or concessions, the sale of state-owned enterprises and for entering into partnerships with the private sector; and ▪ Development and implementation of a preferential procurement policy
Prevention and Combating of Corrupt Activities (Act 12 of 2004)	<p>Makes corruption and related activities an offence; establishes a register in order to place certain restrictions on persons and enterprises convicted of corrupt activities relating to tenders and contracts; and places a duty on certain persons holding a position of authority to report certain corrupt transactions.</p>

Source: CIDB Toolkit (2006)

1.2.2.3 The SCM business model

According to the SCM guide for accounting officers, SCM in the South African public sector, is guided by the SCM model. The model consist of six elements of SCM, namely, demand management, acquisition management, logistics management, disposal management, risk management and performance evaluation (Mnguni, 2012). Figure 1.1 below, presents the SCM business model.

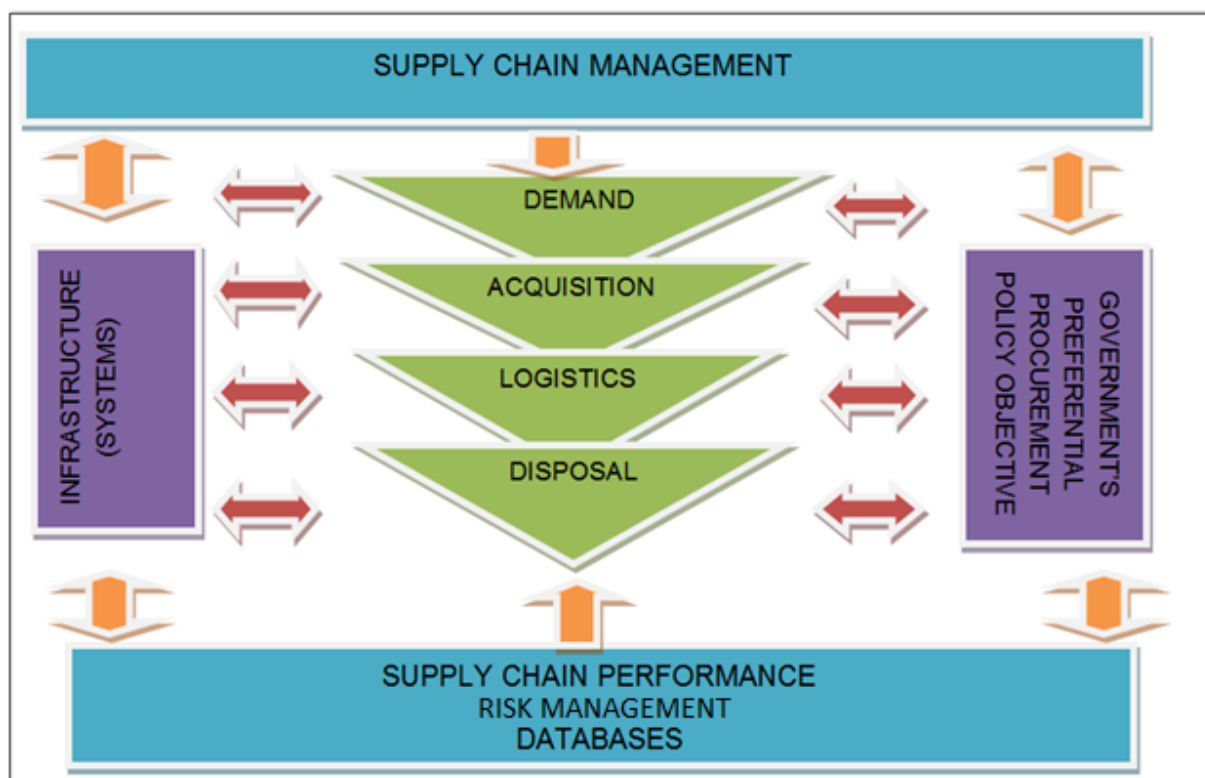


Figure 1.1: Supply Chain Management Business Model

Source: National Treasury (2004:10)

The six elements of SCM are briefly discussed below (NT, 2005):

- **Demand Management:** This is the first element of SCM. It is aimed at fulfilling the needs identified during the strategic planning process. The total needs assessment should have been undertaken before the process can start. Resources required must be analysed and assessed, and key elements in the demand management process should be considered and bring the SCM practitioner closer to the end users.
- **Acquisition Management:** The management of procurement includes the evaluation of bids, the composition of bid committees, and the compilation of a register for defaulters, the range of procurement systems, the establishment of total cost of ownership of assets, bid adjudication and the appointment of consultants.
- **Logistics Management:** This implies to strategically manage acquisition, the movement and storage of materials, the cost fulfilment of orders, to ensure the effective flow of goods, services and related information from the point of origin to the point of consumption.
- **Disposal Management:** The management of assets that are no longer needed gave rise to the need for obsolescence planning, which implies the creation of a database of redundant materials, the inspection of materials for re-use, and to determine the disposal strategy and methods of execution.
- **Risk Management:** This refers to the management of unintended or unexpected outcomes of a decision and makes provision for identifying, considering and avoiding risk as well as the provision for adequate cover for residual risks.
- **Supply Chain Performance:** This monitors the progress undertaken in a retrospective analysis to determine whether the processes have been followed and if the desired objectives were achieved. The National Treasury template for measuring performance is used.

These elements are the basis on which an efficient SCM system is implemented across all spheres of government, including municipalities.

1.2.3 Review of West Rand district municipalities

The structure of local government is dealt with in terms of the Municipal Structures Act 117 of 1998 which sets out the categories and types of municipalities and provides for elections and other matters. The Constitution provides for three categories of municipalities. These are Category A (metropolitan), Category B (district) and Category C (local). There are 278 municipalities in South Africa, comprising 8 metropolitan, 44 district and 226 local municipalities (EM, 2015). District municipalities are made up of a number of local municipalities that fall in one district. Typically, there are between 4 to 6 local municipalities that fall under one district council (SA Yearbook, 2014/5).

The West Rand District Municipality (WRDM) is one of the 44 district municipalities in South Africa. The headquarters of the municipality is located in Randfontein on the South-western edge of the Gauteng province. WRDM is placed under Category B (district municipalities) and is composed of four local municipalities, namely Randfontein Local Municipality, Merafong Local Municipality, Mogale Local Municipality and Westonaria Local Municipality. Table 1.2 shows the composition of the West Rand District Municipality, including the four local municipalities that resort under it.

Table 1.2: Composition West Rand district municipalities and population profile

Municipality	Population	Number of households	Average household size
West Rand District municipality:	820 995	288 334	2.85
Randfontein	149 286	48 455	3.08
Merafong City	197 520	111 767	2.43
Mogale City	362 422	123 398	2.94
Westonaria	111 767	40 101	2.4

Source: Census (2011)

1.2.4 SCM challenges in municipalities

Municipalities in South Africa face enormous challenges with regard to SCM. The 2008 Auditor General Report (AGSA 2008:5), revealed tenders were awarded to

friends and relatives, hence discrediting potential and reliable bidders. In 2012, the Auditor General Report indicated that SCM managers in municipalities do not have a clear understanding of how to manage the SCM processes which will lead to qualified audit results. Furthermore, the Auditor General South Africa (2012) report indicated that municipalities do not have sufficient capacity to implement SCM practices. Also, the report indicated that top management lack the necessary knowledge, skills and competencies required of SCM practitioners.

Boyer and Hult (2005:5) asserted that most municipalities are still developing an integrated SCM policy, which creates irregular evaluation processes because of a lack of knowledge. Officers within the municipalities are performing many tasks without verification and the escalation of duties to ensure transparency and fairness in SCM processes (NT, 2005:2) Furthermore, the municipalities lack appropriate staff training in the new trends and techniques applicable to the implementation of SCM. That leads to slow and ineffective processes, since SCM is based on effectiveness and the application of methods of acquiring the needs of the organisation (NT, 2015).

Roylance (2006:33) asserted that there are irregularities in SCM processes. This is due to the incompetence of SCM practitioners in the evaluation of bids. Dekker (2005:1) indicated that a number of anti-corruption measures are needed to regulate municipal SCM practices. This includes a code of ethical standards that must stipulate that officials and other role players involved in the implementation of the policy must comply with certain requirements, because when such measures are lacking within the departments it may lead to corruption and fraud. Bolton (2014) found that politicians play a pivotal role in non-compliance with SCM practices, especially in municipalities. They lobby with ex-officials or family members to unfairly win tenders because they have an interest (Bolton, 2014). According to MLM (2014), municipal councils do not subscribe to reviews, since the involved top management will expose their interest in benefiting from corrupt activities. They ignore the practice notes and changes to the systems by treasury regulations. Ideally, they deliberately ignore changes so that the systems favour them.

According to the SCM Review (2015), SCM in the South African public sector was only given strategic status in government in 2014 with the appointment of the chief

procurement officer. Some of the critical challenges facing SCM implementation in municipalities are as follows:

- Non-compliance with SCM processes (AGSA, 2011)
- Non-compliance with SCM policies and regulations (Aku Kokor, 2014:20).
- Unauthorised disclosure of confidential information (COT, 2011)
- Lack of transparency within SCM (COT, 2014).
- Poor planning and demand management (RLM, 2010:1).
- Ineffectiveness of broad-based black economic empowerment (Smart Procurement, 2013:1).
- Corruption and fraud by municipal officials (Forssbaeck and Xelheim, 2008:167).
- Conflict of interest (RLM, 2011:1).

1.3 PROBLEM STATEMENT

Given the enormous demand for public services and the limited resources available to satisfy that demand, SCM has become an exceptional strategic concept, not only to the private sector but in government as well (Migiro and Ambe, 2008:231). For about two decades now, the South African government has adopted the concept of SCM to manage its procurement processes (NT, 2004; Ambe, 2009:427). Each government institution has had to customise the generic SCM policy to suit its need. Within this time frame, the National Treasury embarked on training to educate and capacitate SCM practitioners. However, SCM has to a great extent not achieved its intended outcomes, especially in municipalities (Auditor General, 2015).

The SCM Review (2015) revealed that the strategic importance of SCM in the South African public sector is not well understood and SCM is not properly implemented. There are constant allegations of corruption and inefficiency. According to Auditor General Reports for the years 2011, 2012 and 2013, only 5%; 5% and 9% of municipalities, respectively, managed to obtain clean audits. The lack of appropriate implementation of SCM practices plays a great role in poor audit outcomes and leads to irregular expenditure, lack of basic controls, and a lack of supply chain skills. The Public Service Commission (2010) found that despite the legislative and policy

prescripts implemented by government to manage the risks of fraud and corruption in SCM, incidents of financial mismanagement, which includes SCM processes, remain prevalent in municipalities. According to Corruption Watch (2011), *"Taxpayers were fleeced of R30 billion"*. Corruption, incompetence and negligence by public servants' was to be blamed. The South African government spent R26.4 billion in 2010 in ways that contravened laws and regulations (Ambe and Badenhorst-Weiss, 2012:2).

Despite reform processes in the employment of SCM as a strategic tool in the South African public sector, there are non-compliance in SCM practices, especially in municipalities, (Smart Procurement, 2011). Also, there is a lack of research that will clarify and demystify SCM implementation practices in local municipalities within the West Rand District municipalities. Hence, understanding how SCM is practiced and implemented in the West Rand district municipalities would not only be of interest to the government but also to municipal managers that face the challenge to making SCM a reality. Through exploratory and descriptive research, a cross-sectional study was conducted to explore SCM practices within the West Rand district, to make a contribution to improve the process.

1.4 RESEARCH QUESTIONS

Based on the problems defined above, the main research question for the study can be stated as:

Do municipalities in the West Rand District implement SCM practices as required by the National Treasury, South Africa?

The following secondary research questions needed to be answered, in order to answer the main research questions:

- How is demand management implemented at the West Rand District?
- How is acquisition management conducted at the West Rand District?
- How are logistics, disposal, risks and performance management conducted at the West Rand District?
- What are the differences in SCM implementation among municipalities in the West Rand District?

- What are the challenges faced by municipalities in implementing SCM in the West Rand District?

1.5 RESEARCH OBJECTIVES

The main objective of the study is:

To explore how municipalities in the West Rand District implement SCM practices with reference to the National Treasury guidelines.

In order to achieve the main objective of the study, the following secondary objectives were achieved:

- To determine how demand management is implemented at the West Rand District.
- To determine how acquisition management is implemented at the West Rand District.
- To determine how logistics, disposal, risks and performance management is implemented at the West Rand District.
- To determine differences in SCM implementation among municipalities in the West Rand District.
- To determine the challenges faced by municipalities in implementing SCM in the West Rand District.
- To suggest measures that could enhance SCM implementation at the West Rand District.

In order to answer the fourth sub-research question and objective, the following hypothesis was developed:

Hypothesis

- *H0: there is no significant difference between the different municipalities regarding SCM practices.*
- *H1: there is significant difference between the municipalities regarding SCM practices.*

1.6 RESEARCH DESIGN AND METHODOLOGY

The research design and methodology of the study were conducted in two phases. Phase 1 of the study was a literature study while Phase 2 comprised an empirical study.

1.6.1 Phase 1: Literature study

A literature study was conducted to explore SCM practices in the West Rand Municipalities. Phase 1 of this study is discussed in Chapters 1 and 2. Chapter 1 provides an orientation of the study, while Chapter 2 provides a review of SCM practices. The outcome of the literature study was an in-depth understanding of SCM practices in the South African public sector context as well as insight into challenges inhibiting its implementation. The outcome of the literature paved the way for Phase 2 of the study.

1.6.2 Phase 2: Empirical study

An empirical study involves drawing conclusions based on observations, experiments or experiences from an investigation (Quinlan, 2011:12). In this study the empirical study was conducted to explore SCM practices in the West Rand local and district municipalities. The empirical processes discussed in this phase of the study are as follows: the research design, research approach, research strategy, population and sampling, data collection, research instrument and data analyses:

- **Research Design:** Research design is a plan or blueprint of how you intend conducting the research. Three types of research design exist in scientific research (Veal and Darcy, 2011:33). In this study, both descriptive and explorative research design were employed.
- **The Research Approach:** The research can be conducted in diverse ways and includes both theoretical and methodological approaches (Burney 2008:6). The theoretical approach can comprise of an inductive or deductive approach, while the method can either be qualitative or quantitative. This study made use of both deductive and inductive research approaches. Also, a mixed-method research approach was used (qualitative and quantitative).

- **Research Strategy:** A research strategy is an idea that the researcher will have on how to answer the research questions of the study (Saunders *et al.*, 2012:173). The research strategy that was used in the study is a case study. A case study can be defined as a process or record of research into the development of a particular person, group or situation over a period of time (West, 2016). A case study was the preferred research strategy because it provided occurrences of existing SCM cases in the West Rand District municipalities and it provided the researcher with the opportunity to compare and evaluate SCM practices in all the municipalities in the West Rand District.
- **Population and Sampling:** Population is defined as the total collection of elements about which we wish to make some inferences (Cooper and Schindler 2008:275), while a sample is a subset or some part of a larger population (Zikmund and Babin, 2007:266). The targeted population of the study constitute municipalities in the West Rand district (Randfontein Local Municipality, Westonaria Local Municipality, Mogale City Local Municipality, Merafong City Local Municipality and West Rand District Municipality). Purposive sampling as a non-probability sampling technique was used in the study. The basic criteria for selecting the respondents were based on the seniority of their position and their possession of expert knowledge of SCM practices. A total of 15 respondents who constitute SCM managers and practitioners were interviewed.
- **Data Collection and Methods:** There are two basic types of data collection sources in scientific research: secondary and primary data sources. The data was collected using secondary and primary data sources (Zikmund and Babin, 2007:55). Primary data for this study was collected through face-to-face interviews based on a semi-structured questionnaire. Secondary data sources were used to gather information on the current SCM practices and within the South African public sector context. This was conducted during Phase 1 of the study.
- **Research Instrument and Measurement:** The research instrument used in this study was a semi-structured interview questionnaire. The semi-structured interview questionnaire was measured using a 5 likert-scale response format with an ordinal scale ranging from 1 (no extent), 2 (slight extent), 3 (moderate extent), 4 (large extent) and 5 (very large extent).

- **Data analysis:** Data analysis involves defining data obtained from the research questionnaire, interpreting data and drawing conclusion from that (Quinlan, 2011: 365). After collecting the data for the study, it was analysed and interpreted. As this study is a mixed-method approach (qualitative and quantitative), the data analysis comprised descriptive, inferential and content analysis. The structured questions were analysed descriptively and by inferential statistics while a content analysis was used for the closed-ended questions (Section B, Part 2 of the questionnaire ONLY).

1.7 IMPORTANCE OF THE STUDY

SCM is an integral part of prudent financial management in the South African public sector. The study is of utmost important to in the following ways:

- It will give an understanding of SCM practice within the West Rand District municipalities;
- It will give an indication of the differences that exist with regards to SCM practices among the various municipalities in the West Rand District; and
- It will contribute to increasing the body of knowledge in the field of SCM, especially compliance in local and district municipalities.

SCOPE OF THE STUDY

Previous research has outlined the common challenges which lead to service delivery protests because of the snail's pace of activities within the municipalities. However in this study, the focus was on various supply chain activities within the Randfontein, Mogale, Merafong, Westonaria and West Rand district municipalities in the West Rand district region. The study clearly outlined their tendering processes, quotation processes and other SCM-related functions through observations and analysis.

1.8 CHAPTER OUTLINE

The study is structured into five chapters as follows:

- **Chapter 1– Introduction and background to the study:** This chapter provides the background to the study: factors stimulating the research, problem statement; research questions; objectives of the study; the importance of the study, as well as an outline of the study.
- **Chapter 2 – Review of Supply Chain Management practices:** In Chapter 2, SCM practices in the South African public sector are discussed. They include SCM practices, South African Public sector, and challenges within SCM.
- **Chapter 3 – Research design and methodology:** Chapter 3 provides an overview of the research design and its justification, description of the population, sampling procedures, sample size, data collection and data analysis.
- **Chapter 4 – Data analysis and interpretation:** This chapter presents the analysis and interpretation of data collected. The results are analysed and interpreted using the statistical methods described in the research methodology.
- **Chapter 5 – Conclusions, limitations and recommendations:** Based on the findings and interpretation of data collected, conclusions on the research topic are drawn and their implications for the future research are highlighted, then recommendations are made.

CHAPTER 2: REVIEW OF SUPPLY CHAIN MANAGEMENT PRACTICES

2.1 INTRODUCTION

Chapter 1 presented an overview of the study. In the course of the chapter, the problem was defined, research questions and objectives were stated, and an outline of the study was presented. This chapter provides a theoretical review of SCM. The chapter provides an overview of the existing literature on SCM, such as (i) the conceptualisation of SCM (ii) Public sector SCM, and (iii) the South African government SCM practices. The chapter concludes with a discussion of some of the challenges facing SCM practices in the South African public sector.

2.2 CONCEPTUALISATION OF SUPPLY CHAIN MANAGEMENT

SCM is paramount to the success of any organisations today. This section of the literature review presents a conceptualisation of SCM by presenting the definition of a supply chain and SCM, historical developments in SCM, as well as optimal SCM practices.

2.2.1 Definition of supply chain and SCM

The concept of “supply chain” is well established in the literature and is generally referred to as the alignment of firms that bring products or services to the market (Lambert, Stock and Ellram, 1998). According to Fawcett, Ellram and Ogden (2007), and Handfield, Monczka, Giunipero, and Patterson, (2009) a supply chain can be defined as *“a set of three or more organisations linked directly by one or more of the upstream or downstream flow of products, services, finances and information from a source to a customer”*. The supply chain includes manufacturer, suppliers, transporters, warehouses, wholesalers, retailers, other intermediaries and even customers themselves (Burt *et al.*, 2010:15). As indicated in Figure 2.1, a supply chain integrates a network or web of upstream linkages; the model shows how suppliers, producers and customers link up to achieve the desired objective of the organisation (Christopher, 2005; Awad and Nassar, 2010). The supply chain concept applies to both goods and services. The 'upstream' flow travels from the consumer

towards the supplier and the 'downstream' flow is from the supplier towards the consumer (Handfield *et al.*, 2009:10).

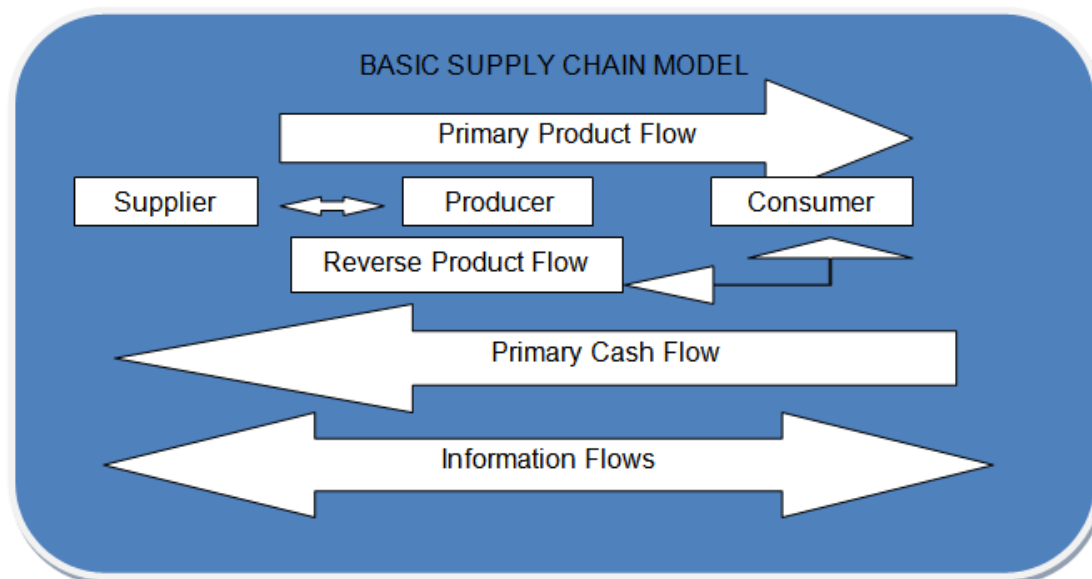


Figure 2.1: Generic framework of a supply chain

Source: Bogden, 2013

The key components of a supply chain as reflected in Figure 2.1 are:

- **Suppliers:** A supplier is a provider of goods and services or a seller with whom a buyer does business. 'Vendor' is a comprehensive generic term referring to all sellers in the marketplace. The supplier provides goods such as sub-components and raw materials, as well as services such as transportation and professional services.
- **Producers:** Producers receive goods and services from the supplier, and then create finished goods and services for consumption by the consumer. Producers ensure that they satisfy consumer needs. Producers depend on the history and demand in order to produce goods to the consumer.
- **Consumers:** Consumers are those who receive the shipments of finished goods or purchase the services. The consumers are the focus of SCM, and the organisations need to know what their consumers' needs are. Organisations need to know who their consumers are and which products need to be produced.

Within a supply chain, there are flows that connect the various parties (Nel, 2010). However, managing a supply chain involves considerable levels of complication (Lo and Power, 2010:139). These flows are briefly discussed below:

- **Primary product flows:** These are flows that move from the supplier to the consumer. Logistical networks move the goods through the producer. In manufacturing just in time (JIT), the goods are in constant motion, with supply buffers that absorb variability.
- **Primary cash flows:** Primary cash flows travel from the consumer upstream to the supplier.
- **Information flows:** Information flows both upstream and downstream, as well as internally and externally.
- **Reverse product flows:** Reverse product flows travel upstream towards the supplier as the reverse supply chain. This occurs for several reasons, such as warranties, repairs, recycling, buybacks and disposals. Logistical services transport the goods through the reverse supply chain.

SCM, on the other hand, can be defined as the systems approach to managing the entire flow of information, materials and services from the raw materials suppliers through factories and warehouses to the end customer (Leenders and Fearon, 2004:10; Ambe, 2010:6). According to Christopher (2005:5), SCM involves the management of upstream and downstream relationships with suppliers and customers to offer superior customer value at less cost to the supply chain as a whole. Zolait *et al.* (2010) state that SCM involves the integration of various business processes, such as demand planning and forecasting, procurement, manufacturing and assembly distribution, management of resources and customer-focused process management.

SCM consists of various types of organisations, among which numerous network connections are formed. It involves the management of material goods and information (Szymczak, 2013:24). SCM is approached from different disciplines such as logistics, purchasing, transportation, operations management, marketing and research. The SCM encompasses the planning and management of all the activities involved in sourcing and procurement, conversion and all logistic management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers and customers. In essence, SCM integrates supply and demand management within and across companies (Ravindran and Warsing, 2011:2).

The definitions of SCM reflect different perspectives and a universal and acceptable definition have not been found yet. Table 2.1 presents the summaries of some varying definitions of SCM.

Table 2.1: Varying perspectives of SCM

Author	Definitions
Brandenbur, Govindan, Sarkis and Seuring (2013)	SCM is defined as the management of physical, logistical and financial flows in networks of intra- and inter-organisational relationships, jointly adding value and achieving customer satisfaction.
Awuor (2012)	SCM is defined as the phenomenon whereby activities are chosen to be performed differently or to perform different activities from rivals.
Mnguni (2012)	The system that involves all the activities that are required to acquire raw materials and transform them into goods that will be consumed by the end-user.
Badenhorst-Weiss and Ambe (2011)	SCM is a term used in business literature to refer to the control of materials, information and finances as they move in a process from supplier to manufacturer to wholesaler to retailer to consumer.
Marra and Edwards (2011)	SCM is a concept of application of knowledge and management practices.
Larson (2009)	SCM encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities.
Stemele (2009)	SCM is the term used to show both internal and external processes that produce goods and services to customers. It is the process of planning, implementing and controlling the operations of the supply chain as efficiently as possible.
Ismay (2008)	SCM is the growing field of study comprising multifaceted issues, relationships, collaboration, processes and efficiency for those who embrace it and concerns that need to be address before it is fully realised.
Jacobson (2007)	SCM is the process of planning, implementing, and controlling the operations of the supply chain with the purpose of satisfying customer requirements as efficiently as possible.
Van Zyl (2006)	SCM is defined as all the activities related to the moving of commodities, from the raw materials stage through to the end user. It consists of linkages of suppliers and customers.

Source: Author's own compilation, 2015

Table 2.1 reveals that SCM can be approached from different disciplines (Arlbjørn, Freytag and de Haas, 2011:277), namely logistics, purchasing, transportation, operations management, marketing and research. Issues related to the physical movement of goods (tangible products) and the related information flow and business processes seem to dominate the empirical foundation of the new knowledge within the discipline (De Haas, 2011). Ravindran and Warsing (2011:1) assert that SCM arose from management recognition of the process of buying, selling, manufacturing, assembling, warehousing, transporting and delivering goods. In essence, SCM integrates supply and demand management within and across companies (Ravindran and Warsing, 2011:2). SCM contributes to value creation in the business through optimisation and alignment of structures, policies and processes (Deloitte, 2011). It consists of various types of organisations, among which numerous network connections are formed. It involves the management of material goods and information.

From the above discussion, it can be deduced that SCM can be applicable to different industries, sectors and countries. However, most research on SCM is from the private sector perspective. Little research has been conducted in the public sector, especially the South African public sector, where SCM was only adopted in 2004 (this is discussed in Section 2.3).

2.2.2 Objectives of SCM

The overall objective of SCM is to maximise value in the supply chain. The value generated by a supply chain is the difference between what the final product is worth to the customer and the costs the supply chain incurs in filling the customer's request (Chopra and Meindl, 2010:22). SCM has continued to be adopted by organisations as a medium for creating and sustaining competitive advantage (Fawcett *et al.*, 2008:35). Competitive advantage is built upon a well-planned and executed SCM strategy that is sustainable (Mangan, Lalwani, Butcher and Javadpour, 2012:10).

2.2.3 Historical development of SCM

Traditionally in organisations, the marketing, distribution, planning, manufacturing, and the purchasing along the supply chain operate independently. These functional areas had their own, often conflicting, objectives. Marketing's objectives of high

customer service and maximum sales profits conflicted with the manufacturing and distribution goals. Many manufacturing operations were designed to maximise throughput and lower costs with little consideration for the impact on inventory levels and distribution capabilities. Purchasing contracts were often negotiated with very little information beyond historical buying patterns. The result of these factors was that there was not a single, integrated plan for an organisation (Houlihan 1985). Hence, the need for a mechanism through which these different functions could be integrated.

The term “supply chain management” (SCM) was first introduced in written form by Keith Oliver, as reported in the *Financial Times* in 1982 (Laseter and Oliver, 2003) to describe connecting logistics with other functions, and by Houlihan (1985, 1988) to describe the connections between logistics and internal functions and external organisations. It was primarily written by consultants, although published in academic journals such as the *International Journal of Physical Distribution and Materials Management* (Ellram and Cooper, 2014:9). Since then, thousands of articles and books have been published on the topic. Today as we speak, SCM has become a “strategic function” with respect to implementing national and international business strategies. However, the evolution of SCM can be classified into three revolutions as indicated below:

- The first revolution (1910–1920)
- The second revolution (1960–1970)
- The third revolution (1995–2000)

2.2.4 Supply chain management practices

Due to the importance of SCM, it directly affects quality, customer lead times, inventory levels, and delivery time, hence a direct impact on the organisational bottom line. Understanding the very latest systems, practices and world-class performance in SCM is a key component in evaluating one’s own organisation. Over the years, best practices in SCM have stemmed from the Henry Ford production system (1910-1920) (Kamal and Ferdousi, 2009:77), the Toyota systems (just-in-time [JIT], the Kanban principles, 1960-1970) and the Dell supply chain (1995-2000) (Shah, 2009:6). SCM practices have been defined as a set of activities undertaken in

an organisation to promote the effective management of its supply chain. Donlon (1996) asserted that SCM practices include forming supplier partnerships, outsourcing, cycle time compression, continuous process flow, and information technology sharing.

Tan *et al.* (2002) refer to purchasing, quality and customer relations as being optimal SCM practices. Alvarado and Kotzab (2001) include in their list of SCM practices the concentration on core competencies, use of inter-organisational systems such as electronic data interchange (EDI), and the elimination of excess inventory levels by postponing customisation toward the end of the supply chain. Tan *et al.* (2002) discuss aspects of SCM best practices which include supply chain integration, information sharing, supply chain characteristics, customer service management; geographical proximity and JIT capability. Table 2.2 below presents diverse views on what constitute SCM practices.

Table 2.2: Diverse view on what constitute supply chain practices

Author	Description of supply chain practices
Donlon (1996),	Forming supplier partnerships, outsourcing, cycle time compression, continuous process flow, and information technology sharing.
Alvarado and Kotzab (2001)	Use of inter-organisational systems such as electronic data interchange (EDI) and the elimination of excess inventory levels by postponing customisation toward the end of the supply chain.
Tan <i>et al.</i> (2002)	Purchasing, quality and customer relations, supply chain integration, information sharing, supply chain characteristics, customer service management; geographical proximity and JIT capability.
Chen and Paulraj (2004)	Supplier base reduction, long-term relationships, communication, cross-functional teams and supplier involvement to measure buyer–supplier relationships
Min and Mentzer (2004)	Agreed vision and goals, information sharing, risk and award sharing, cooperation, process integration, long-term relationships and agreed supply chain leadership.
Li <i>et al.</i> (2006)	Encompasses supplier partnership, customer relationship and information sharing.
Litke (2015)	Supply chain system should be aligned with overall company strategy; Ensure you have a strong supply chain group with the “right” skill set; Understand the importance of supplier relationship management; Focus on Total Cost of Ownership (TCO); and reduce inventory – run a “lean” organisation.

Source: Author's own compilation, 2015

Thus, there are diverse views on SCM best practices from a variety of different perspectives with the common goal of ultimately improving organisational performance.

2.3 SCM PRACTICES IN THE SOUTH AFRICAN PUBLIC SECTOR

This section presents an overview of review of public sector SCM in South Africa. The section begins by exploring the concept of SCM in the public sector and thereafter, focuses on the South African SCM environment.

2.3.1 Overview of public sector supply chain

SCM is a proven business strategy that has gained wide acceptance in recent years due to increasing customer demands for quality, delivery and speed. The integration of SCM in the public sector has played a critical role in optimising logistics support and improving the management of secondary inventory (Brandenbur, Govindan, Sarkis and Seuring 2013). Public SCM is a concept that offers a reference framework for the composition of Public Supply Chains and multilevel networks. The concept, characterised by the fact that it is not solely focused on the analysis of cost reduction, emphasises the question whether, and if so, which management processes and actions are necessary for public multilevel networks. The design of Public SCM resorts to elements of Public Management, Public Private Partnership, New Public Management and Supply Chain Management (Essig and Dorobek, 2006).

An analysis of the public sector SCM shows that it consists of multilevel networks that contain:

1. private firms, which either are property of or receive orders from public sector agents;
2. public authorities (for example social insurance institutions); and
3. policy-makers.

The public SCM concept not only concentrates on the question of which institutions cooperate in goods and services, but also how these enterprises are involved with enterprises operating at other levels. Thus, analyses of intra-network-relationships

as well as analyses of inter-network-relationships are essentially necessary elements of the concept.

SCM has been implemented in various countries with the view to managing public funds and growing the economy sustainably. Countries, such as the United Kingdom (UK), Canada, Denmark and South Africa have fully-integrated SCM systems. Also, countries such as Ghana and Namibia have also adopted SCM. According to Levenger, Onger, Wolde and Kagoya (2013), SCM is popular in Namibia and has addressed the deficiencies in the health care system. The public services sector in the UK, for example, has an expenditure of approximately \$150 billion a year on the goods and services necessary for the delivery of same services (European Commission, 2007). It is expected that Government should practise the highest professional standards when they expend funds on behalf of the taxpayer to make sure the requirements of quality and quantity meet the needs of the people. In South Africa, SCM is an integral part of financial management.

2.3.2 Background to SCM practices in South Africa

SCM was introduced in the South African public sector through the development of procurement reforms. Because of deficiencies and related malpractices in procurement, the South African provincial treasuries, in conjunction with the National Treasury, embarked on a rigorous reform initiative to introduce best procurement practices that would be efficient and effective (Mkhize, 2004:4). SCM was initiated to support procurement reforms. The procurement reforms started in 1995 and were directed at the promotion of the principles of good governance and the introduction of a preference system to address certain socio-economic objectives. The procurement reforms processes were embedded in Section 76(4) (C) of the PFMA (Act No 1 of 1999) and the Preferential Procurement Policy Framework Act (Act No 5 of 2000) (PPPFA) (SAMDI, 2005:3). A research study pursued by the National Treasury and the Joint Country Procurement Assessment Review (CPAR) in 2001 prompted the government to introduce the concept of SCM in the management of its public procurement. The findings of the study revealed deficiencies in practices related to governance, interpretation and implementation of the PPPFA and its associated regulations (Marokana, 2012:14).

According to Jacobson (2007:18), there were a number of weaknesses in the supply chain systems:

- There was no uniform procedure for tender publications; some provinces advertised only in the major newspapers, not in the state tender bulletin.
- Suppliers were not paid within 30 days, which made doing business with government more expensive.
- Some tender committees had to deal with political influence and conflict of interest, which made the process unfair and not transparent.
- Poor estimates of requirements were made in centrally managed supplies contracts.

It was critical for the government to implement a review of public sector SCM because the system in place could not meet the set objectives. Governmental SCM had to give effect to the provisions of the constitution, PFMA 1 of 1999 and the Municipal Finance Management Act 56 of 2003 (MFMA), to transform the requirements and provisioning functions in government into an integral supply chain (Tshamaano, 2012:8). Because of the reform processes, the South African government adopted the concept of SCM to manage its procurement processes.

The deficiencies led to the National Treasury embarking on a reform initiative to introduce efficient and effective best procurement practices. This was because the tender board caused the system to become inefficient as far as methods for procurement, logistics management and obsolescence planning were concerned (Mnguni, 2012:46). As a result of this, SCM, as a new and strategically more powerful concept, was adopted. According to the National Treasury (2004), SCM in the public sector is defined as *“an integral part of Financial Management which intends to introduce internationally accepted best practice. It seeks to bridge the gap between traditional methods of procuring goods and services and the balance of the supply chain and at the same time addressing procurement related matters that are of strategic importance”*.

SCM in the South African public sector forms part of its Public Financial Management systems. This is because it is regarded as a tool for the management of public procurement and involves the spending and use of public funds (NT, 2005).

In light of this, an SCM model was developed to guide the implementation of the SCM process in order to facilitate a general understanding of and improvement in the procurement processes in government. The guide provides steps to assist accounting officers in the smooth implementation of SCM within their institutions. The guide is also supplemented on a regular basis with circulars and treasury notes to keep SCM officials abreast of the development of the SCM function within the sphere of government (NT, 2004).

From a South African government perspective, SCM can be defined as an integral part of financial management that seeks to introduce internationally accepted best practice principles, while at the same time addressing government's preferential procurement policy objective (NT, 2003:4). To manage the supply chain process, an SCM document "*Policy to guide uniformity in procurement reform processes in government*", was developed in 2003 in conjunction with provincial treasuries to replace the out-dated procurement and provisional practices in municipalities/ municipal entities. According to the SCM guide for accounting officers, SCM in the South African public sector is guided by the SCM model. Figure 2.2 presents the SCM business model.

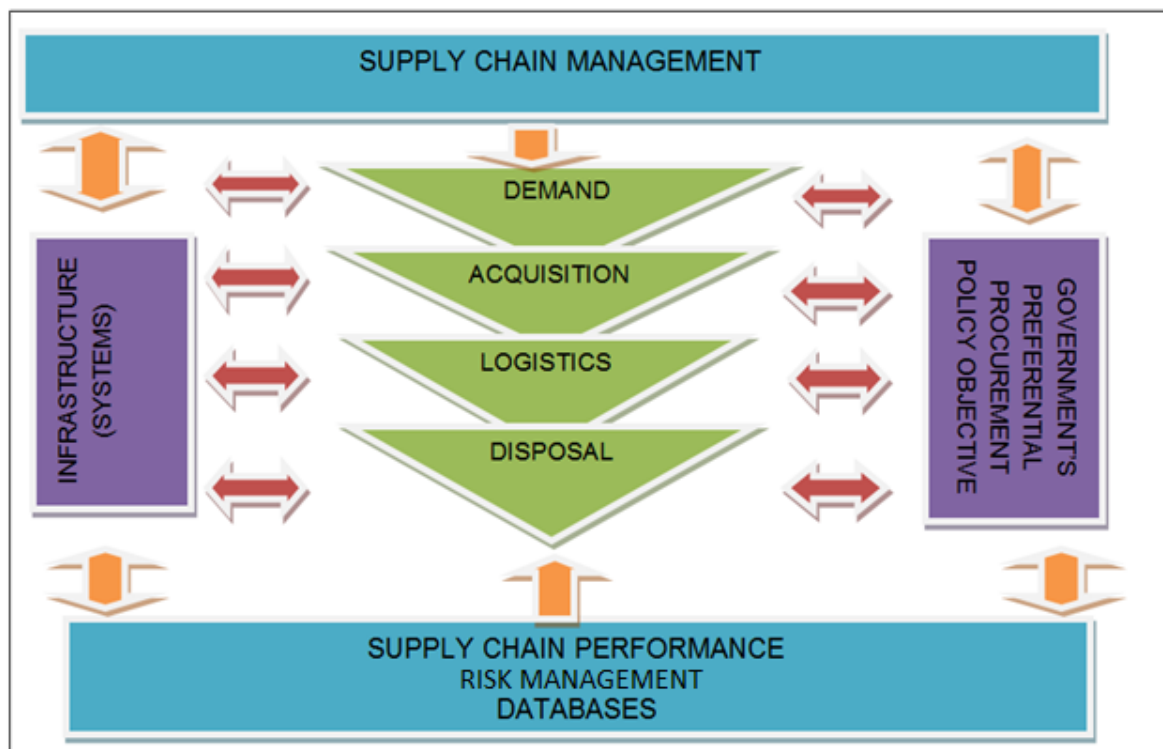


Figure 2.2: The South African SCM model

Source: National Treasury (2004:10)

Figure 2.2 presents the SCM model, which consists of six elements of SCM, namely demand management, acquisition management, logistics management, disposal management, risk management and performance evaluation (NT, 2005). The elements will be discussed individually further in the chapter.

2.3.3 Relevant studies on the South African Government SCM

Since the inception of SCM in the South African public sector, various studies have been undertaken on the topic. Table 2.3 below presents some of the studies conducted, to the researcher's knowledge, between 2005 and 2012.

Table 2.3: Studies on SCM in the South African public sector

Author	Description of study
Tshamaano (2012)	Impact of the supply chain on service delivery: A case study of the Provincial Department of Economic, Development, Environment and Tourism in Limpopo Province
Mnguni (2012)	Investigation and evaluation of the implementation of SCM in service delivery with specific focus on procurement processes of goods and services in the head office of the Eastern Cape Department of Health
Marokana (2012)	The impact of the implementation of the supply chain policy in the Department of Local Government and Housing in Limpopo Province
Ngobeni (2011)	An analysis of the tender process in national government in South Africa
Rampedi (2010)	The application of the supply chain system in the Office of the Premier, Mpumalanga Province
Stemele (2009)	Assessing good governance in procurement in Letjeleputswe district municipality
Jacobson (2007)	Impact of SCM in Government institutions
Van Zyl (2006)	Strategic SCM by Matatiele municipality
Rabodiba (2006)	The practice of SCM in Capricorn district with particular reference to Aganang municipality
Matthee (2005)	The potential of internal audit to enhance public supply chain outcome
Ambe (2012)	The perspectives of supply chain in the public sector
Naudé, Ambe and Kling (2013)	Supplier relationship management – anathema for South African public sector procurement

Larson (2009)	Public vs private sector perspectives on SCM
Dekker (2005)	New supply chain regulations
Wall, Watermeyer and Pirie (2012)	SCM and service delivery
Codogan (2008)	Challenges facing local government
Nel (2010)	Developing a conception framework to analyse supply chain design practices
Ismay (2008)	The institutionalisation of SCM

Source: Author's own compilation, 2015

Table 2.3 shows that most of the studies that were conducted focus on metro municipalities and the local municipalities have been neglected. This study will be especially important, as it covers the West Rand district municipalities. The findings of the study will definitely contribute to the body of knowledge on public sector SCM. The West Rand district municipalities will benefit from this study because they will have the opportunity to observe their level of compliance and will be able to compare it to the prescribed standards.

2.3.4 The SCM policy

As discussed in the previous subsection, because of the deficiencies relating to procurement practices, SCM was adopted in the South African public sector. Based on the national SCM policy, each government entity was expected to adopt and implement an SCM policy. The SCM policy of each entity is expected to be fair, equitable, transparent, competitive and cost-effective and to comply with management that covers:

- the range of SCM processes that entity may use, including tenders, quotations, auctions, and various other types of competitive bidding,
- situations in which municipalities must use a particular type of process,
- procedures and mechanisms for each type of process,
- procedures and mechanisms for more flexible processes where the value of a contract is below a prescribed amount, and

- open and transparent pre-qualification processes for tenders or other bids (MFMA Act 56 of 2003)

The SCM policy entails five major objectives adopted by the cabinet (NT, 2004:9; Rampedi, 2010:10). These are discussed below:

- Transform government procurement and the provisioning practices into an integrated SCM function.
- Embark on introducing a systematic approach to the appointment of consultants.
- Create common understanding and interpretation of the preferential procurement policy.
- Ensure best value for money while improving service to achieve delivery, thus moving away from the lowest price scenario to the best value for money scenario.
- Consistently promote the application of best practices throughout government's supply chain.

2.3.5 Guiding pillars of SCM

The SCM policy is guided by certain value systems called the pillars of SCM, which are embedded in the Constitution (Webb, 2000:8) and are also named pillars of procurement. These are discussed briefly below.

2.3.5.1 Value for money

This is an essential test against which a department must justify a procurement outcome. A lower price is not the best indicator, since a lower price does not ensure the awarding of the business. The department is not obliged to accept the lowest price, because it does not guarantee value for money. The best value for money means the best available outcome when all relevant costs and benefits over a procurement cycle are considered. The procurement function must provide value for money and be carried out in a cost-effective manner (Tshamaano 2012:18). The procurement organisations that are centrally located or devolved to individual departments should:

- avoid any unnecessary costs and delays for themselves or suppliers,

- monitor the supply arrangements and reconsider them if they cease to provide the expected benefits, and
- ensure continuous improvement in the efficiency of internal processes or systems.

2.3.5.2 Open and effective competition

Open and effective competition requires a framework of procurement laws, policies, practices and procedures that are transparent, that is, they must be readily accessible to all parties. It encourages effective competition through procurement methods suited to market circumstances. Government entities need to apply these principles and do research to get the best possible outcome from the market by ensuring that:

- potential suppliers have reasonable access to procurement opportunities and available opportunities are published at least in the Government Tender Bulletin;
- where market circumstances limit competition, departments recognise that fact and use procurement methods that take account of it;
- adequate and timely information is provided to suppliers to enable them to bid;
- bias and favouritism are eliminated;
- the costs of bidding for opportunities do not deter competent suppliers; and
- costs incurred in promoting competition are at least commensurate with the benefits received (RSA, Act 108 of 1996).

2.3.5.3 Ethics and fair dealing

In procurement, if all parties comply with ethical standards they can deal with one another on a basis of mutual trust and respect and conduct their business in a fair and reasonable manner and with integrity. All government staff associated with procurement, particularly those dealing with suppliers or potential suppliers, are required to:

- recognise and deal with conflicts of interest or the potential thereof,
- deal with suppliers even-handedly,

- ensure they do not compromise the standing of the state through acceptance of gifts or hospitality,
- be scrupulous in their use of public property, and
- provide all assistance in the elimination of fraud and corruption.

2.3.5.4 Accountability and reporting

This involves ensuring that officials and organisations are answerable for their plans, actions and outcomes. Openness and transparency in administration, by external scrutiny through public reporting, is an essential element of accountability. Within the procurement framework:

- Heads of departments are accountable to their ministers for the overall management of procurement activities.
- Heads of procurement and senior procurement directors are accountable to heads of departments for various high-level management and co-ordination activities.
- Individual procurement officers are accountable to heads of procurement, and to their clients, for the services they provide.
- All people exercising procurement functions must follow these guidelines and are accountable to management (Public Services Accountability Monitor website, 2007).

2.3.5.5 Equity

The word 'equity', derived from the context guidelines, means application and observance of government policies that are designed to advance persons or categories of persons disadvantaged by unfair discrimination. This fifth pillar is vital to public sector procurement in South Africa. It emphasises economic growth by implementing measures to support industry in general, and especially to advance the development of small, medium and micro enterprises (SMMEs) and historically disadvantaged communities. SMMEs and HDIs have to play a bigger role in the economy and more diversified ownership in terms of race and gender is necessary (General Procurement Guideline, 2002:6). To ensure equal treatment, councillors are prohibited from participation in tender committees, lest they influence tender awards.

The government implemented the PPPFA as the foundation of all procurement activities. It has the following mandates:

- Advance the development of SMMEs and HDIs.
- Promote participation of women and handicapped people in business.
- Create new jobs.
- Promote local enterprises in specific provinces, in a particular region in a specific local authority or in rural areas.
- Support local products.

2.3.6 Role players in SCM

The SCM Regulations (30 May 2005) serve as a formal requirement to accounting officers to ensure the implementation of SCM processes as an integral part of their financial systems. According to the SCM Regulations, municipalities must establish SCM units to develop and implement their SCM policies (RLM, 2010). Table 2.3 (on the next page) presents the key role players in SCM.

Table 2.4: Key role players of South African government SCM and their functions

Key role players	Functions
National Treasury	Introduce and oversee the implementation of SCM; develop treasury regulations; issue guidelines, general conditions of contract and bid documents to accounting officer; set minimum reporting standards; monitor policy outcomes.
Provincial Treasuries	Assist departments with the implementation of SCM; support departments by providing advice and building capacity; co-ordinate training in the province; monitor policy outcomes.
Accounting Officer/ Chief Executive Officers	Establish an SCM unit under the direct supervision of the Chief Financial Officer; compile and implement an SCM policy; adhere to guidelines supporting documents for the implementation issued by the National Treasury; develop internal procedures and processes; ensure that officials are trained and adequately skilled; report to National Treasury; comply with ethical standards.
Chief Financial Officer/ SCM Units	Recruit, select, develop and manage skills to build and maintain an effective SCMU; arrange for training skills and resources to develop managers and supervisors to operate and manage varieties of SCM activities, facilities and networks.

Source: Ambe and Badenhorst (2011)

2.3.7 SCM bid committees

The SCM regulations further provide for a committee system for competitive bids, consisting of a bid specification committee, a bid evaluation committee and a bid adjudication committee. No official should be a member of the above-mentioned committees more than once, since it will influence the outcome of the decision at the adjudication committee and the processes will not be within the prescripts of the SCM Regulations (Implementation of Supply Chain Management, Section 4.1). Among the municipality's responsibilities related to SCM is to maintain a reliable database to evaluate and support monitoring of the extent to which government reform objectives are being met, monitor the manner in which the policy is implemented in respect of government reform objectives and the manner in which targets are set and achieved and value for money is obtained in delivering mechanisms. Another critical part of the formulation of such committees should be a measure to oversee and evaluate functions within the performance reviews. The evaluation should identify and evaluate issues concerning the effects of the procurement policy, especially on the poor, and how the policy can be adapted to overcome poor performance in the long run (RLM, 2007). The various committees are discussed in the section below.

2.3.7.1 Bid specification committee

The bid specification committee is a committee responsible for compiling a bid specification and is chosen by the accounting officer of the municipality. The bid specification falls within the demand management framework, therefore the specification committee should consist of the officials of the section requesting the goods and services, particularly to make a technical contribution to the bid. In the event of complex cases the municipality may appoint external experts. The bid specification should be approved by the accounting officer prior to the advertisement of the bid, since it is the prerogative of the accounting officer to oversee the implementation processes and progress of bids (Implementation of Supply Chain Management, Section 4.1(a)). The specification committee should clearly specify and describe the terms of performance required rather than stating these in terms of descriptive characteristics for design. The specification committee should not create barriers in contract requirements in the form of specifications, plans, drawings, designs, testing and test methods, packaging and markings. The specifications

should not refer to any particular trademark, name, patent design, type and specific origin or producer, unless there is no other sufficient and precise way of describing the characteristics of the work, therefore in most cases the reference that should be used must be accompanied by the word “equivalent” (Steytler and de Visser, 2009:13).

2.3.7.2 Bid evaluation committee

The bid evaluation committee is responsible for the evaluation of bids received in accordance with the criteria in the bid document specification, and is part of the acquisition management framework. The evaluation team should comprise of the supply chain officials and the end-user officials. The committee should evaluate all the bids received and forward the report, together with recommendations, to the bid adjudication committee for the awarding of the bid (RLM 2007:46).

2.3.7.3 Bid adjudication committee

The bid adjudication committee (BAC) is part of the acquisition management framework and should consist of at least four senior officials. At least one member should be from the Supply Chain section; in most cases this is the SCM manager. The chairperson of the committee should be the institution’s chief finance officer (Code of Conduct for bid adjudication committees, Section 3.2.3). Subsequent to the approval of the committee by the accounting officer, it is his/her prerogative to award the bid. If this committee agrees with the recommendation of the bid evaluation committee, it forwards its recommendation to the accounting officer for a final decision (RSA, 2010). The BAC (must consider the recommendations made by the bid evaluation committee and make a final award based on the bid evaluation committee’s decision. The Code of Conduct for Bid Adjudication Committees (Sections 2.4 and 2.6) states that in the event of approval by the BAC of a bid other than the one recommended by the bid evaluation committee, the matter should be forwarded to the accounting officer concerned (PRASA, 2014).

Appointments should be made based on Section 117 of the Municipal Finance Management Act, 2003 (Act 56 of 2003), which states that councillors must not take part in any municipal tender committees, in order to emphasise transparency and ensure fairness in tender processes. The notion will strengthen and promote responsibilities within the procurement processes, and the elected council makes the

policy that will support Supply Chain Processes. Table 2.5 describes the constituents of the various bid committees.

Table 2.5: Bid Committees, Constituent and Roles

Bid committee	Constituent of the committee and functions
Bid Specification Committee	<p>May comprise one or more officials, preferably a manager responsible for the function, including external specialist advisors (cross-functional principle); accounting officer or delegated official to appoint chairperson.</p> <p>ROLES: Compile technical specifications; terms of reference; requirements; conditions of contract; evaluation criteria; determine goals and indicate method of procurement.</p>
Bid Evaluation Committee	<p>Comprises an SCM practitioner; technical expert from department requiring the goods/service.</p> <p>ROLES: Accounting officer must appoint the chairperson and members; evaluate bids in accordance with the criteria (PPPFA); evaluate bidders' tax matters; submit a report on recommendation regarding the award; check list for restricted bidders; consult the register for tender defaulters.</p>
Bid Adjudication Committee	<p>Comprises at least four senior managers including the chief financial officer (CFO); at least one senior SCM practitioner to ensure compliance and a technical expert who is an official to ensure compliance with specifications.</p> <p>ROLES: Accounting officer must appoint the chairperson and members; a member of the bid evaluation committee may presents its case to the bid adjudication committee; no member of or person assisting the bid evaluation committee, nor any advisor, may be a member of this committee.</p>

Source: Ambe and Badenhorst-Weiss (2011)

2.4 POLICIES AND LEGISLATIVE REQUIREMENTS OF SCM

SCM processes and activities are many-sided. As a result, supply chain policies are complex and have a significant impact on the smooth functioning of the public entity. National Treasury (NT, 2005) requires legislative command to be empowered to facilitate the implementation and management of SCM processes in government. Government departments and municipalities initiate budgetary and financial reforms with the view to accommodate the needs of the public.

2.4.1 Policies and regulations

Numerous policies affect SCM. These policies and regulations are briefly discussed below:

2.4.1.1 The Constitution of the Republic of South Africa

According to Section 217 of the Constitution of the Republic of South Africa, 1996 (Act 108 of 1996): “*When an organ of state in the national, provincial or local sphere of Government or any other institute identified in national legislation contracts for goods and services, it must do so in accordance with a system which is fair, equitable, transparent, competitive and cost effective*” (Mnguni, 2012:31). Municipalities are there to adhere to the legislative requirements incorporated in SCM. The Constitution of the Republic of South Africa clearly states that each and every municipality or municipal entity must structure and manage its administration and budget planning processes to give priority to the basic needs of the community, and to promote the social and economic development of the community. It must also participate in national and provincial development programmes (SA Constitution, 1996).

It is mandatory for all the municipalities to achieve unqualified results at all times. The results should be a testimonial to the processes followed in implementing the set goals (Tshamaano, 2012:10). The provincial and national governments have to support and strengthen the capacity of municipalities to manage their own affairs, exercise their powers and perform their functions. They also have to draft national and provincial legislation that affects the status, institution, powers or functions of local government. This must be published for public comment before it is introduced in the parliament or provincial legislature, in a manner that allows organised local government, municipalities and other interested persons an opportunity to make representations with regard to the draft legislation (RLM, 2010).

2.4.1.2 The Promotion of Equality and the Prevention of Unfair Discrimination Act (Act No 4 of 2000)

This act prohibits the state or any persons from discriminating unfairly against any person on the grounds of race or gender through the denial of access to contractual opportunities for rendering services or by failing to take steps to reasonably

accommodate the needs of such people. It is applicable to the state and all persons (natural or justice person), highlighted in the CIDB (2006) toolkit.

2.4.1.3 Municipal System Act 2000 (Act No 32 of 2000)

Section 83 of the Municipal System Act 2000 (Act No. 32 of 2000) allows municipalities to provide municipal services themselves or by way of service delivery agreements. This act stipulates the requirements for service delivery agreements through selection and pre-qualification processes that are competitive, fair, transparent, equitable and cost-effective; allow all prospective service providers to have equal and simultaneous access to information relevant to the bidding process; minimise the possibility of fraud and corruption and make the municipality accountable to communities, residents and role players about the processes used when selecting a service provider and the reason for any decision in this regard (NT, 2004).

2.4.1.4 The Preferential Procurement Policy Framework Act, 2000 (Act No 5 of 2000)

The PPPFA 2000 (Act 5 of 2000) and its regulations are applicable to local government. It provides for the implementation by all municipalities of a preference system in the allocation of contracts for categories of service providers to protect the interests of persons disadvantaged by unfair discrimination. The specific goals and objectives of the preferential procurement policy should include provisions to encourage and support contracting with persons, or categories of persons, who were historically disadvantaged (HDI) by unfair discrimination on the basis of race, gender or disability. The policy should also support the implementation of the Reconstruction and Development Programme (RDP) as published in Government Gazette No 16085, dated November, 1994. This act gives effect to Section 217 (3) of the Constitution, by providing a framework for the implementation of the procurement policy (Visser and Erasmus, 2007:150).

The PPPFA promotes the participation of HDIs in business, and a broad-ranging set of developmental objectives by means of preference points to accommodate certain policy objectives. It also attempts to correct imbalances of the past; the Black Economic Empowerment (BEE) Act 53 of 2003 was not in practice before 2004. The act currently creates balance and promotes the development of black individuals who previously did not have the opportunity to vote and participate directly in

business. The intention is that black people, including Indians and the coloured community, should be enabled to make a contribution to the gross domestic product (GDP) of the country. This act was developed to promote equity for women and disabled people who previously did not have opportunities to engage in business and exercise their rights in respect of the country's development (RLM, 2010).

The act contains 80/20 and 90/10 evaluation criteria that are applicable to certain thresholds when procuring goods and services. The 80/20 principle is used to deal with tenders in procuring goods and services worth less than R500 000 and the 90/10 principle is used when the value of the goods and services is above R500 000. It is in line with the Constitution, because it compels all the organs of the state to apply this prescribed preference points system and discourages departments from using so-called set-aside practices (NT, 2005:102).

2.4.1.5 The Municipal Finance Management Act, 2003 (Act No 56 of 2003)

The Municipal Finance Management Act, 2003 (Act No 56 of 2003), as a further extension of the Public Finance Management Act, 1999 (Act 29 of 1999), aims to assist municipalities to maximise their capacity to provide services as planned. It clearly outlines measures for combating fraud, corruption, favouritism and unfair and irregular practices, and seeks to promote ethical behaviour among officials and other role players involved in SCM. Section 216 (1) of Chapter 13 of the Constitution provides the basis for the National Treasury to prescribe measures to ensure transparency and expenditure control in each sphere of government by introducing generally recognised accounting practices, a uniform expenditure classification and uniform treasury norms and standards.

These measures have been introduced to reform financial management in national government since 1994 and in local government since 1996. The cornerstone of the reform initiative has been implemented through the MFMA No 56 of 2003, which became effective in July 2004 and was supported by the Annual Division of Revenue Act. These pieces of legislation have been aligned with other local government legislation, such as the Structures Act, Systems Act, Property Rates Act and their regulations, to form a coherent package.

The establishment of internal auditing and audit committees in government is seen as integral to the aforementioned criteria as prescribed in Section 216 (1) of the

Constitution to enhance transparency and improve financial management, in which procurement plays a pivotal role. All municipalities have supply chain policies that are governed by regulations such as PPPFA and the Constitution. Therefore, each municipality and municipal entity must establish an SCM unit to implement its SCM policy. A joint SCM unit may be established between a municipal entity and its parent municipality. Where possible, the SCM unit must operate under the direct supervision of the chief financial officer (SCM Regulation 7). Subsequent to the legislation, non-compliance is easily dealt with, since the municipalities have set policies. It is also important for supply chain managers to have broad knowledge of and expertise related to SCM (NT, 2004).

2.4.1.6 The Broad-Based Black Economic Empowerment Act, 2003 (Act 53 of 2003)

The Broad-Based Black Economic Empowerment Act, 2003 (Act 53 of 2003), expands the framework provided in the PPPFA to take into account and apply codes of good practice for BEE. Furthermore, it provides for the use of qualification criteria for the issuing of licenses, the sale of state-owned assets and entering into public-private partnerships. The bill and strategy envisage the strengthening of government's legislative and other policy instrument to achieve its BEE objectives. This includes the PPPFA (Act 5 of 2000) and its associated regulations. Economic empowerment for black people is about redressing the inequalities of the past so that they will in future be in a position to address the needs of society. It is fundamental and a wise move through the implementation of BEE by government as it creates a stable economy in which all individuals can contribute to the GDP of the country. Previously, before the implementation of regulations governing SCM, few people believed that the regulations were based on redress and did not perceive themselves as a group with responsibilities to make sacrifices to atone for inequalities in the past (NT, 2005).

The PPPFA was not aligned with the principles of the Broad-Based Black Economic Empowerment Act because of the following ambiguities: inconsistency in policy application; a definition of HDI that was too broad, leading to extensive fronting, and the fact that the B-BBEE and PPPFA were not synchronised. A work group was established between National Treasury and the BEE unit of the Department of Trade and Industry to deal with the alignment. On 2 March 2011 the cabinet approved the

revised Preferential Procurement Policy Regulations. The regulations were promulgated by the Minister of Finance on 6 June 2011 to come into effect on 7 December 2011. The preferential procurement Regulations of 2011 are applicable to organs of state as contemplated in Section 1 (iii) of the PPPFA and all public entities listed in Schedules 2, 3A, 3B, 3C, and 3D to the PFMA and municipal entities (NT, 2011) .

Government uses a “balanced scorecard” to measure progress related to the achievement of BEE by enterprises and sectors. The use of a common scorecard by different stakeholders within SCM provides and promotes a basic framework against which to benchmark the BEE process in different enterprise sectors. The scorecard measures three core elements of BEE: direct empowerment through ownership and control of enterprises and assets; human resources development and employment equity; and indirect empowerment through preferential procurement and enterprise development. Government has set up SCM as a point of departure and also to improve on the previous out-dated procurement. This was a departure from the past rigid, rule-bound, inflexible processes that were inefficient, and which, in the final analysis, were basically focused on the lowest quotation even when the rest of the factors critical to government policy were not fulfilled. The SCM approach is aimed at enabling government to use its financial resources to have an impact on fighting poverty and to fulfil its commitment to black empowerment and the promotion of SMMEs (STATSSA, 2008:10)

2.4.1.7 Prevention and Combating of Corrupt Activities Act (Act No. 12 of 2004)

This act makes corruption and related activities an offence. It has established a register in order to place certain restrictions on persons and enterprises convicted of corrupt activities relating to tenders and contracts. This act places a duty on certain persons holding positions of authority to report corrupt transactions. According to the corruption watch (2013), in supporting the above-mentioned act, there are elements of corruption that are specifically condemned by law, for example, using power illegally, gratification, illegal giving or receiving.

2.4.1.8 The Construction Industry Development Board Act (Act No. 38 of 2000)

The Construction Industry Development Board (CIDB) is a national body established by an Act of Parliament (Act 38 of 2000). The CIDB develops the industry for the improved delivery of infrastructure to the South African public. It works with all stakeholders for the sustainable growth of construction enterprises and best practice among employers, contractors and the professions. The CIDB identifies best practices and sets national standards. It creates common and ethical standards for construction delivery of contracts. To implement these objectives, the CIDB is mandated to establish a code of conduct for all role players in the construction processes, standards of uniformity in construction procurement, a national register of projects and a national register of contractors (NT, 2005).

The CIDB Standard for Uniformity in Construction Procurement requires that institutions concluding contracts for construction work use standard forms, such as:

- General Conditions for Construction Works;
- Conditions of Contract for Construction;
- Conditions of Contract for Plant and Design;
- Build, Conditions of Contract for FIDIC EPC/Turnkey Projects or Short Form of Contract;
- JBCC series 2000 Principal Building Agreement or Minor Works Agreement; or
- NEC3 Engineering and Construction Short Contract or NEC3 Engineering; and
- Construction Contract (Act 38 of 2000).

Legislatively the SCM is a policy that emanates from the regulations in the Constitution of the Republic of South Africa. Therefore, it is fundamental to examine the processes followed to procure goods and services. Municipalities or municipal councils are political institutions. They consequently need to undertake and address legislative and governmental functions in addition to their supervision of the administrative activities of their officials in the councils. The procedure to be followed in making by-laws is also prescribed (RLM, 2010).

Because the policies are strictly enforceable in the councils, adherence to them should be mandatory. Public policy consists of government's choices of actions

intended to serve the public. It is the bridge that links the general aims of government with the results for which administrators are accountable. Officials and the accounting officers are bound by the agreements they sign as part of their employment contract. SCM strengthens policy implementation (Johnson, 2004:127). The South African public should also exercise their human rights and be aware of the processes followed in the implementation of policies, such as the SCM policy. By-laws governing the SCM policy are approved by provincial and national councils. *“A municipal by-law may be enforced only after it has been published in the official gazette of the relevant province”* (Bhardwaj, 2010:686).

2.4.2 National treasury practice notes and circulars

SCM is governed by National Treasury practice notes and a circular intended to promote auditable and prescribed processes. These are issued to help government officials implement SCM.

Table 2.6: Circulars and practice notes

Practice notes
National treasury instruction number 3A of 2014/2015
National Treasury instruction note to enhance compliance with monitoring and improving transparency and accountability in SCM
National treasury prohibition of restrictive practices: <ul style="list-style-type: none"> ▪ Certificate of independent bid determination (SBD9) ▪ Augmentation of general condition of contract
National Treasury Government procurement: General conditions of contracts, July 2010
National Treasury practice note 11 of 2008/2009
National Treasury practice note 7 of 2009/2010
Circular: Issuance and validity of broad-based black economic empowerment (B-BBEE) status level certificates in respect of exempted micro enterprises (EMEs)
Circular: Implementation guide: Preferential procurement regulations, 2011 pertaining to the preferential procurement policy framework Act. Act No 5 of 2000.
Circular: Database of restricted suppliers
Circular: Guidelines on the implementation of demand management
Circular: Irregular expenditure

Source: Author's own compilation, 2015

2.5 ELEMENTS OF SCM IN SOUTH AFRICAN PUBLIC SECTOR

This section of the chapter briefly discusses the elements of the South African public sector SCM model. As indicated in the National Treasury Guidelines for Accounting Officers (2010:11), the main elements of the model are demand management, acquisition management, logistics management, disposal management, risk and supply chain performance management. Each of these factors will be discussed in more detail in this section.

2.5.1 Demand management

Nel (2010:126) defines demand management as the SCM process that balances the requirements of internal and external customers with the capabilities of the supply chain. Demand management can be defined as the decision-making processes that allow departments to procure at the right time, at the right place and at the right cost (Ambe, Bizana and Naudé, 2015:64). The SCM process starts with demand management, before it proceeds to assessing, drafting of the specifications and analysis of the market, and lastly, are linked to the budget. It furthermore, aligns the goals of the department, because all the expenses and requirements need to be taken into account in this phase. Therefore, all the budget needs have to be captured in this phase as well, because they also need to be in the programmed list (NT, 2005). According to Rampedi (2010:12), demand management is the initial phase of SCM and is defined as a shared decision-making strategy, which focuses on providing the right services in the right place at the right time.

2.5.1.1 Demand management considerations/objectives

Ndlovu (2012) asserts that demand management requires dealing with considerations that are critical for the success of the supply chain, such as:

- A needs assessment is conducted to ensure the goods or services are acquired in order to render the agreed services.
- Specifications are precisely determined.
- Requirements are linked to the budget.
- The supplying industry is analysed.
- Needs form part of the strategic plan of the organisation.

- An analysis of past experience may assist in determining the manner in which the institution fulfilled this need in the past.
- The optimum method to satisfy the need is considered, including the possibility of procuring goods, works or services from other institutions (for example, stationery, printing and related supplies from the government printer or furniture from the Department of Correctional Services).
- The frequency of the requirement is specified.
- The economic order quantity is calculated.
- Lead and delivery times are identified.
- An industry and commodity analysis is conducted.

Matthee (2005:71) posits that demand management is a cross-functional exercise with the goal of ensuring that the resources that are required to fulfil the needs identified in the strategic plan of the organisation are delivered at the correct time, price and place, taking into account the quantity and quality of the needs.

According to the National Treasury's SCM guide for accounting officers (NT, 2005:25), managers need to understand and use fool-proof techniques to assist them in planning, implementation and control activities. It is important to clearly outline the obligations during this phase because it is within the strategic plan of the organisation. This includes a detailed analysis of the goods, works and service required, for example, how much can be accomplished, how quickly and which materials and equipment are needed to achieve the set objectives (RLM, 2007:14)

2.5.1.2 Demand management flow

The elements of demand management are important, since they determine the full overview of demand and analysis satisfaction within demand management plans. Product and market analyses give the department the opportunity to plan in the event of procurement. According to the National Treasury (2005:24), in clearly outlined processes, questions such as the following are asked:

- Is there a real need for goods and services?
- Does its fulfilment form part of the IDP?
- Did the need exist in the past?

- Determine the optimum method to fulfil the need?
- Analyse past experience, such as costs, suppliers, and so on.

2.5.1.3 Aligning demand management to budget

Demand management is integral to the procurement procedures. It clearly defines the decision-making process that ensures procurement at the right time, in the right place and at the right possible cost. However, many government entities are still faced with challenges of improper planning and linking demand to a budget (Ambe and Badenhorst-Weiss, 2011). Cost-effective procurement depends on skills in ensuring that buying requirements are reliably determined, appropriate contract strategies are developed, contracts are well managed and opportunities are seized to secure the best deals timeously and at the right price (Aka Kokor, 2014:21).

2.5.1.4 Procurement planning

Procurement planning relates to essential aspects of the project or requirements in terms of technical specifications, cost, deliveries and the general work plan of the purchase. The purpose of the procurement plan is three-fold. The first is to clarify and quantify (to the extent possible) the technical, cost, and scheduled objectives of the procurement; the second is to define the plan for accomplishing the objective, and the third is to determine a methodology for evaluating performance against defined objectives during the time that the contract is being carried out (The NW Public Works and Service Procurement Guideline, 2009:1)

2.5.1.5 Developing specifications

Tender specification is the process of outlining the exact and clear requirements of the department. According to RDTL (2008), the specification should entail a clear, accurate and complete description of what needs to be purchased. Clear and accurate specification is the foundation of any purchase of goods and services (including consultancy) or building works. A clear specification will ensure that the evaluation process of what is required becomes very precise and will facilitate the management of the contract.

2.5.1.6 Analysing goods and services

Two critical functions need to be addressed when analysing goods and services. According to Circular 1/2/1/2/1 in respect of guidelines on the implementation of demand management, the functions listed below need to be addressed:

- During the strategic planning phase of the institution, the goods, works or services required are determined. The SCM representative(s) should assist the process by ensuring that the identified goods, works or services are the optimum resources required to achieve the desired goals and objectives of the institution.
- The SCM unit of the institution must analyse the goods, works or services required and, among others, do the following:
- List the functions to be performed by the institutions.
- Conduct an analysis of past expenditure, as this exercise may, among others, contribute to determining the manner in which the institution fulfilled its needs in the past.
- Compile a detailed list of goods, works or services required to perform the functions listed.

2.5.1.7 Compiling bid register

The SCM unit should compile a bid register that will manage the procurement process for each requirement. This will be used as a tool in monitoring and evaluation of the procurement/ acquisition process. For all bids in excess of R500 000, the relevant information must be captured in the template reflecting the schedule of the procurement plan in respect of advertised competitive bids, which must be submitted to the relevant treasury by not later than 30 April of each year. The SCM unit should, on a continuous basis, monitor and assess the validity and accuracy of and compliance with the procurement plan (National Treasury Guidelines on the implementation of demand management Circular 1/2/1/2/1).

2.5.2 Acquisition management

According to Ambe, Bizana and Naudé (2015:645), acquisition management can be defined as the acquisition (through buying or purchasing) of goods and services by government or a public organisation. The following list of activities are all related to acquisition management:

- It is the strategy determining how to approach the market;
- Preferential procurement policy objectives are identified that could be met through the specific contract;

- Applicable depreciation rates are determined;
- Total cost of ownership principles are applied, for example, life cycle costs and inventory-carrying costs;
- Bids documents are compiled, attaching all required documents and formulating conditions;
- Bid evaluation criteria are determined;
- Bids are evaluated and recommendations are made;
- Contract administration is done and contract information is used to start logistics management (Isamay, 2008:70).

Bid quotations need to be invited and evaluated against the evaluation criteria indicated on the bidding documents (RLM SCM, 2012:1). It must also be within the regulation to use discretion in choosing between alternatives to make the necessary and appropriate recommendations that will fall within the parameters of the department's needs. Acquisition management is responsible for evaluation and adjudication, ensuring that the award of the bid will be an accountable decision (South African Management Development Institute, 2008:10).

2.5.2.1 Objectives of acquisition management

The South African Management Development Institute (SAMDI) (2008:4) outlines the objective of acquisition management as the unit giving a general overview of the acquisition function, as well as guidelines for the procurement procedures, which will enable officials or municipal entities to perform their duties in a responsible and accountable manner, taking into account the relevant role players, legislation and policy applicable to the acquisition management process.

It makes clear who the two parties to an outsourcing arrangement are, but is essentially a definition from the buyer's viewpoint. The supplier may have decisions to make that are as difficult as those faced by the organisation taking a decision to outsource. National Treasury's SCM guide for accounting officers/ authorities (NT, 2004:11) clearly outlines acquisition procedural/objective considerations, which are to:

- decide on the manner in which the market will be approached,
- establish the total cost of ownership of a particular type of asset,

- ensure that bid documentation is complete, including evaluation criteria, and
- ensure that proper contract documentation is signed.

According to National Treasury Practice Note Number 2 of 2005 (2005:1-2), acquisition management should be conducted within the ambit of three processes, depending on the financial threshold of goods/services to be procured. Table 2.7 below presents the range of procurement processes. Different organs of state have different ranges according to accounting officers' approval.

2.5.2.2 Sourcing strategies

Sourcing strategies give the organisation the opportunity to align the procurement of goods and services. According to the National Treasury (2004:29) and RLM (2010), sourcing strategies might include:

- utilisation of a transversal contract,
- local versus international sourcing,
- using a paper-based bidding system, which may include obtaining quotations, inviting competitive bids, pre-qualification of bidders and two-stage bidding,
- use of e-procurement, and
- negotiations.

2.5.2.3 Procurement methods/thresholds

Table 2.7 lists the three procurement ranges to be applied when procuring goods and services within the public sector.

Table 2.7: Generic range of procurement processes/methods

Range	Description of range
Up to the value of R2 000 (VAT included)	Petty cash.
Above the value of R10 000 but not exceeding R200.000 (VAT included)	Quotations, verbal & written quotation
Above the value of R200.000 (VAT included)	Competitive bidding process

Source: RLM (2007:29)

In line with the appointment of consultants, the National Treasury's policy strategy guiding uniformity in procurement reform processes in government (NT, 2003:32) defines the concept 'appointment of consultants' as follows: *“Technical quality and*

independence of advice are key considerations in engaging consultants”.

Consultants are involved primarily for the following reasons. To:

- provide specialised services for limited periods without any obligation of permanent employment,
- benefit from superior knowledge, transfer of skills and upgrading of a knowledge base while executing an assignment, and
- provide independent advice on the most suitable approaches, methodologies and solutions of projects.

The following are the methods most generally used for the appointment of consultants (NT, 2003:32):

- Quality and cost-based selection
- Quality-based selection
- Selection under fixed budget
- Least cost selection
- Single-source selection.

The method of selection is determined by the scope of the assignment, the quality of the service, the complexity of the assignment and whether assignments are of a standard or routine nature.

2.5.2.4 Steps involved in procurement process

The eleven steps listed below summarise all the activities related to SCM (Lynch, 2013):

- Requirements identification
- Determining procurement method
- Procurement planning and strategy development
- Procurement requisition processing
- Solicitation of documents, preparation and publication
- Pre-bid/ proposal meeting and site visit

- Bid proposal submission and opening
- Bid proposal evaluation
- Contract award recommendation
- Contract negotiations
- Contract award (signing).

2.5.2.5 Compiling of tender documents

Accounting officers/ authorities are urged to ensure that the necessary attention is paid to the areas outlined below (NT, 2004:34; RLM, 2010). Experienced has shown that inadequate attention to processes may lead to many challenges.

- General/special conditions of contract (GCC) give effect to uniformity; all contracts must be based on GCC issued by National Treasury.
- Standard bid documents issued by National Treasury should be used, with minimum changes made by accounting officers. All bids and contracts must be subjected to the GCC.

2.5.2.6 Inviting bids

When inviting bids, there are important areas that need to be addressed (NT, 2004:42-43). These are clearly outlined below:

- **Pre-qualification (when necessary).** It is critical for complex projects to pre-qualify the bidders, since scopes are very large. Aspects such as the bidder's financial position and capabilities with respect to personnel, equipment and construction or manufacturing facilities are crucial.
- **Establishment of list of approved suppliers.** A list of approved suppliers should be established through a competitive bidding process. Where goods and services are required on a recurring basis, a list of approved suppliers of goods, services or works may be established.
- **Two-stage bidding.** The detailed design and engineering of goods, services and works to be provided, including the preparation of technical specifications and other bidding documents, normally take precedence over the invitation of the bid for major contracts.

- **Advertising the bid.** Legislatively the bid should be advertised for a period of 30 days before closure, and advertised in the tender bulletin and in other appropriate media. This is deemed necessary to ensure greater exposure to potential bidders, except in urgent cases when bids may be advertised for shorter periods as the accounting officer may determine.
- **Sale of documents.** Accounting officers may decide to charge a refundable or non-refundable fee for the bidding documents. The fee should be reasonable and reflect the printing costs and delivery to prospective bidders. It should not be very high and discourage competition.

2.5.2.7 Receiving of bids

The time of closing of the bids should be stipulated clearly on the advertisement, together with the place of bid opening. The institution should open all the bids at the stipulated time and the place. Bids should be opened in public and bidders or their representatives should be present. Names of bidders and their individual total prices should be recorded when bids are opened (RLM, 2005:24).

2.5.2.8 Evaluating and adjudication of bids

Bids should be evaluated in terms of the criteria stipulated in tender documents. Amending evaluation criteria after closure of the bids should not be allowed, as it would jeopardise the fairness of the system. Points scored for the price must be added to points scored for goals, and the contract is usually awarded to the bidder who scored the highest points (PRASA, 2014:45). Bids need to be evaluated based on the evaluation criteria set in the advertisement of the tender. There are two types of evaluation criteria, namely 80/20 and 90/10; 80 and 90 points are allocated for the price and 20 and 10 points are allocated for HDI participation or achieving any specific objectives (PPPFA Act 5 Of 2000). The bidder who scores the highest points should be awarded the business as per the threshold set in the evaluation criteria. According to the PPPFA (2011) bidders who do not submit a BBBEE certificate will lose the allocated BBBEE points.

2.5.2.9 Clearing and awarding successful bidders

Suppliers should be assessed by SCM practitioners for possible risks such as the availability of adequate facilities, financial standing, capacity to deliver, previous performance in terms of quality and service delivery, as well as the attainment of

goals. It is the prerogative of the accounting officer to ensure that neither the recommended bidder nor any of the directors are listed as companies, directors or persons restricted from doing business with the public sector (NT, 2004:46)

2.5.3 Logistics, disposal, risk and performance management

This subsection explores logistics, disposal, risk and performance management.

2.5.3.1 Logistics management

Basu (2011:8) asserted that logistics management is the processes of planning, implementing and controlling the efficient, cost effective flows and storage of raw materials, in-process inventory, finished goods, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements. As the third element of SCM, logistics management therefore deals with the management of plans, implementation and control to ensure the efficient, effective flow and storage of goods and related information, from the point of placing an order to the point of consumption, in order to meet the end user's requirements (Rampedi, 2010:13). Receiving stock and management of stock are vital. All officials and top management need to be trained and knowledgeable about the receiving processes and other logistic activities (South African Management Development Institute, 2006:7).

Logistics also refers to the movement of materials within a production facility, the shipment of incoming materials from suppliers and the shipment of outgoing products to customers. Materials include all the physical items used in the production process, such as raw materials, parts, components, consumable supplies, fuel, equipment, tools, and office supplies (Bhat, 2010:17). Logistics and the supply chain are linked and function interchangeably without much regard for the market difference between the two. Logistics is the part of the supply chain that plans, implements and controls the efficient, effective, forward and reverse flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customer requirements (Sharma, 2010:4). Several logistics activities need to be taken into consideration when defining this element of SCM (NT, 2005:93; Tshamaano, 2012:15-16):

- **Stock levels**

It is important to take stock levels into account; because of delayed lead times, the following should be determined in order to automate the ordering process:

- Items and quantities thereof that need to be kept in stock
- Minimum/ maximum levels to be kept in stock based on consumption figures or inputs from users
- A safety margin ($\pm 20\%$) to be added to the minimum level to cover unforeseen circumstances.

- **Placing of orders**

An order should be placed, either when a pre-determined stock level is reached, or when a request is received from an end user for an item that is not held in stock.

- **Order processing**

Where contracts exist, orders should be placed for the item from the contract. Price quotations or competitive bidding methods of ordering should be applied with delegation of authority where there is no contract. The reliability of a supplier should be monitored in terms of, among others:

- Delivery periods
- Quality
- Quantity.

Should problems be encountered, they should be followed up with the vendor and if it is a contract item, it should be reported to the custodian of the contract.

- **Stores/warehouse management**

- Expediting of orders: It is important to adhere to the delivery conditions reflected on the order form; deviations should be followed up with the supplier immediately.
- Receiving of items: All goods received should be verified for quality and quantity against the ordering documentation. It is recommended that a receipt voucher be granted for payment purposes.

- Storage: Municipal and legal stipulations, as well as safety regulations should be complied with when items are being stored, for example, flammables, poisons, explosives, ammunition and weapons. An effective item location system should be used. The shelf-life of stock should be taken into consideration. Stock and equipment should be stored properly and arranged in such a manner that the checking and handling thereof are facilitated, and the possibility of damage, exposure, deterioration and perishing is limited or eliminated.

- **Issuing/distribution of items**

An issue voucher should be generated for all goods issued. Consumable items should not be recorded after issue. Non-consumable items should be recorded from receipt to disposal. Transit officials should ensure that goods are delivered promptly to the end-user.

- **Stocktaking**

Stocktaking of all assets in stock or on distribution must be conducted at least once a year. This procedure involves the comparison of stock counted with official records of what should be in stock. Differences should be accounted for.

- **Transport management**

It is important to maintain trip authority, since transport should be authorised and correctly utilised. Proper records should be maintained.

- **Accounts payable**

The relevant documentation should be submitted promptly for payment to avoid interest charges.

- **Losses/surplus**

The accounting officer/authority should ensure that, among others, the following preventative mechanisms are in place to eliminate theft, losses, wastage and misuse of assets:

- All damage to and loss of assets must be accounted for in accordance with Treasury Regulation 12.

- Damage and loss are investigated with a view to possible recovery; surpluses are to be taken on record as assets immediately.

2.5.3.2 Disposal management

Disposal management is the fourth element of the SCM; it is the final process when an institution needs to do away with unserviceable, redundant or obsolete movable assets according to the National Treasury's SCM guide for accounting authorities (NT, 2004:89), (Rampedi 2010:13). It is one of the duties of the accounting officer/ authorities to appoint an asset disposal committee. The disposal committee has to make recommendations on the disposal of any assets. According to RLM (2007:57) and Tshamaano (2012:16), disposal management involves transferring the assets to another organ of state in terms of a provision of the act enabling the transfer of assets, or the sale or destruction of assets.

Disposal plays a part in the planning of obsolescence and in determining which assets need to be disposed of. Determining the disposal strategy will also enable the organisation to manage and inspect the material for potential re-use. The assets manager must maintain an assets register for all immovable and movable assets. Proper control systems for the movement of assets and a database for unserviceable, redundant assets needs to be maintained to eliminate the misuse of assets (NT, 2005:11-12).

2.5.3.3 Risk management

Brindley (2004:23) defines risk management as the process whereby decisions are made to accept a known or assessed risk and/or the implementation of actions to reduce the consequences or probability of occurrence, for example, to avoid, reduce, transfer, share or even take the risk.

Risk management is the fifth element of SCM, which forms part of the business plan for the acquisition of all goods and services. National Treasury's strategy guide to uniformity in procurement reform process in government (NT, 2003; 4) and RLM (2010) describe the concept of 'risk management' as follows: it is imperative that accounting officers/authorities take cognisance of potential risks during the SCM process. Due consideration should ideally be given to:

- identification of procurement risk on a case-by-case basis,

- allocation of risks to the party best equipped to manage it,
- the state bearing the cost of risks where the cost of transferring them is greater than that of retaining them,
- exercising of risk management in a proactive manner and the provision of adequate cover for residual risks, and
- contract documentation clearly and unambiguously assigning relative risks to the contracting parties.

2.5.3.4 Supply chain performance

According to Catekaya, Cuthbertson, Ewer, Klass-Wissing, Piotrowicz and Tyssen (2011:78), SCM performance is a tool to manage the company's performance and to improve performance, improving profit and reducing negative impacts. Deshpande (2012:4) defined SCM performance as multiple measures of performance developed by the organisation to gauge the ability of a supply chain to meet an organisation's long term and short term objectives. SCM performance is necessary to plan actions and monitor how a selected strategy is realised and the defined goals achieved.

Supply chain performance is critical; it depends on the actions and decisions of all the members within SCM and finance, who have to support the systems in place to achieve the set objectives of the organisation. The norms and standards will determine the processes and mechanism followed. Effective and efficient supply chain performance monitoring will contribute to practical public finance management (Institute for Public Finance and Auditing, 2004:24). The National Treasury's SCM guide for accounting officers/ authorities (NT, 2004:91-92) clearly states that a monitoring process must take place to determine whether the correct process has been followed and whether the desired objectives have been achieved. The following issues need to be reviewed:

- achievement of goals,
- compliance with norms and standards,
- savings generated,
- stores efficiency,
- cost variance per item,
- breach of contract.,

- cost efficiency of procurement process (the cost of the process itself),
- whether supply chain objectives are consistent with government's broader policy focus,
- aligning the material construction standards increasingly with those standards that support international best practice,
- observing the principles of co-operative governance as expounded in the Constitution, and
- promoting the reduction of regional economic disparities.

It is important to assess each stage of the project from the initial stage to the completion stage, including the consultants where applicable. Such assessment should be undertaken and be available for future orientation (NT, 2004:93). The authorities/ accounting officer should assess and observe the project, taking into account that if the supplier did not perform according to the contract, such non-performance cannot be deemed a sound reason for ignoring such a supplier's behaviour when adjudicating future bids.

2.6 SCM CHALLENGES IN THE SOUTH AFRICAN PUBLIC SECTOR

Despite the employment of SCM in the South African public sector and the efforts of government, there are many challenges facing SCM practitioners. For example, only 17 of South Africa's 278 municipalities received clean audits for the financial year 2011-2012. The Auditor-General (AGSA), Terence Nombembe, released the report which showed that while a handful of municipalities performed better than the previous year, the majority remained in the red. Along with the 278 municipalities, a further 60 municipal entities are included in the results. Of those that received clean audits, only three municipalities and three municipal entities improved their results over the previous year to achieve a clean audit, while just over 30 others improved their results, but remained negative. The three successful municipalities, George, Langeberg and Mossel Bay, are all in the Western Cape. A further 50 auditees regressed from their previous year's results. The majority maintained mostly negative results from previous years. None of the country's eight metropolitan municipalities managed to secure a clean financial bill.

The AGSA 2011/2012 office said metros were setting a bad example for their smaller counterparts. *“Unfortunately, the metropolitan municipalities faltered in their crucial role of providing exemplary leadership to smaller municipalities”*. Nombembe says the high vacancy rate in municipalities is partly to blame, saying a lack of CFOs in municipalities is particularly problematic: *“At 73 percent of the auditees, vacancies in key positions and key officials without the minimum competencies and skills continued to make it difficult for these auditees to produce credible financial statements and performance reports”*. Clean audits have now been at a level of five per cent for the past three years (2011). Earlier in 2014, AG Nombembe warned that billions were being spent on consultants to do work that should be handled internally. It appears the trend has remained unchanged, sending expenses spiralling among more than two thirds of municipalities simply to pay for consultants handling financial matters (Smith, 2013).

The specific challenges facing the South African public sector will now be briefly discussed.

2.6.1 Non-compliance with processes in the SCM

Compliance plays a pivotal role in aligning the set objectives of the organisation. According to the AG, the forms of non-compliance within SCM (AG, 2011) mentioned below are common:

- The code of conduct is not always adhered to regarding declaration of interests.
- Capacity challenges occur in SCM units and further SCM training is required.
- There is lack of effective internal monitoring.
- The prohibited suppliers' database is not always checked properly.
- Risk assessment and fraud management are inadequate.
- Internal audit does not evaluate SCM processes.

2.6.2 Non-compliance with policies and regulation

Compliance with policies and regulation is a major problem in SCM because most practices are exposed as being due to non-compliance and incorrect use of the

preference points system. Not adhering to SCM policies when appointing service providers is prohibited by law (Aku Kokor, 2014:20).

2.6.3 Unauthorised disclosure of confidential information

Leaking of confidential information or sharing such information for private benefit is unethical. According to Hugo, Badenhorst and van Biljon (2006), the publication of prices and other confidential information to harm the supplier is unethical and causes irreparable damage, since the organisation will lose credibility in respect of dealing with confidential supplier information. Information about interventions, new technology, research developments, manufacturing processes, strategic plans and quality data should be handled with care.

2.6.4 Inadequate accountability and control mechanisms

Clear accountability chains for officials are vital in the SCM environment, since it deals with confidential information. Lack of communication between different control mechanisms or insufficient supervision over contractors might lead to mismanagement of performance, especially in grey areas where there are fewer requirements for transparency. It also creates opportunities for corruption, since the controls are not properly monitored (OECD, 2007).

2.6.5 Lack of links on interdepartmental database

All SCM departments and municipalities are required to have a supplier database for sourcing goods and services (NT, 2005A). The company may, however, be registered in many government databases to get various tenders. There is no linkage between the departments and no tracking system in place to ascertain whether the company is receiving tenders from other departments. The databases do not communicate since there are no linkages.

2.6.6 Infrastructural issues

The present infrastructure with reference to the implementation of a preferential procurement framework is not favourable for addressing issues of education of SMMEs on the bidding processes. Most SMME company owners have limited knowledge of completing tender documents. The tender documents should be clear

and precise in addressing the tender requirements. According to Fourie (2009), bidders should be informed and educated through seminars and workshops on the basis of selection criteria.

2.6.7 Lack of transparency within SCM

Lack of transparency within the SCM structures is still a major challenge in the public sector. Research has been done and training has been offered to accelerate and improve the system, but challenges still exist. According to the Organisation for Economic Co-operation and Development (2007), there are various problems with transparency, SCM processes are not clear to the bidders, tender information is incomplete and non-competitive procedures are used.

2.6.8 Poor planning and demand management

Planning is crucial, since it initiates the process. Assessment, drafting of the specifications and analysis of the market culminates in linking the needs with the budget. End user departments do not submit their demand plans on time to demand management department (RLM, 2010:1). It is a yardstick in the supply chain because it is a planning phase in achieving the set objectives. In this stage the shared decision-making strategy should be identified, focusing on providing the right goods and services in the right place and at the right time.

2.6.9 Ineffectiveness of broad-based black economic empowerment

According to the government of the Republic of South Africa, BEE was implemented to balance the imbalances of the past, when black communities did not have the opportunity to engage to business ventures. It later adopted the Broad-Based Black Economic Empowerment Act (BBBEE), which aimed at the expansion and wider opening of opportunities for workers and smaller enterprises to facilitate ownership and management among disadvantaged groups. BEE had a negative effect on the economy and promoted fronting and tender abuse (Smart Procurement, 2013:1).

2.6.10 Corruption and fraud by municipal officials

There are many variations in the nature and scope of corrupt behaviour, and different measures or remedies are enforced to combat corruption. The phenomenon

can be found in virtually every organ of state. It exists in the private sector as well. "Corruption" is used in reference to a large range of illicit activities. Although there is no comprehensive definition of what constitutes corrupt behaviour, its known and most prominent definitions share a common emphasis on the abuse of public power or position for personal advantage, which eliminates the initial competition. Bribery is offering and promising of any undue pecuniary or other advantage by a director, officer, employee or agent of private enterprise in order to obtain or retain a business or other improper advantage. In government no one should pay any portion of a contract payment to a government employee or official or other contrary party or use intermediaries such as agents, subcontractors, consultants or third parties (Xelheim and Forssbaeck, 2008:167).

2.6.11 Conflict of interest

It is a government priority to pay career officials salaries with the view to insulate them from politics. This is an important goal, but is only part of the task of creating a professional civil service. Officials tend to use their position for unlawful private economic gain. Incentives from suppliers are affecting fairness and transparency in public and private SCM. There are many people in companies or businesses all over South Africa who use their wives and people with disabilities as a front to protect their image and to win government tenders. Such practices are discouraged by the implementation of the PPPFA (Act 5 of 2000). It has a major impact on black females, since they claim most preferential points on the score cards. For example, there has been a massive incidence of women fronting in the spheres of government subsequent to the implementation of the PPPFA (Ackerman, 1999:75).

Conflict of interest may also arise from the participation of consulting firms or contractors in government procurement. Diligent policy implementation is required to prevent this. Public officers who are involved in government procurement, especially the chairperson and members of the three committees involved in SCM, officials opening tenders and consultants should, at all cost, avoid conflicts arising between their official duties and their private interests. SCM regulations for municipalities state that the award of a bid to a close family member of an employee in the service of the state, or to a person who left a position in any sphere of government fewer than 12 months previously, must also be disclosed in the annual financial statements

of the municipality. Provisions also apply to ensure that suppliers do not corrupt supply chain officials; their bids will be disqualified subsequent to such activities (RLM, 2011:1).

2.7 CHAPTER SUMMARY

SCM was briefly defined in chapter two with the view to summarise the available literature and the policies involved. It was explained how SCM started and the purpose was clearly defined by outlining the policies and the legislative requirements relevant for municipalities. The overview was aimed at adherence and how municipalities should operate. SCM is equally important in the public and private sector, since the mandate of both is to achieve set objectives, especially in procuring goods and services, while at the same time complying with standards of conformity. Lastly, the challenges that municipalities face were mentioned.

The table below summarises the elements of SCM and the key considerations of each element.

Table 2.8: Elements of SCM and key considerations

Elements of SCM	Key considerations
Demand management	Demand plans, IDP and strategic planning phase. Initiation phase of the elements of SCM. Drafting of specification, development of suppliers database and approaching of market.
Acquisition management	Sourcing strategies: Petty cash, quotations and bids. Market and product analysis. Procurement thresholds and tendering processes. Awarding of contracts.
Logistics management	Plans and implementations of processes. Logistics activities (Stock levels, placing orders, order processing and warehouse management).
Disposal management	Obsolete inventory, transferring of assets, maintenance of assets register for immovable and movable.
Risk management	Identification of procurement risks, allocation of risks to the party best equipped. Clear contract documentation assigning relative risks to contracting parties.
Performance management	Performance monitoring, objectives achievements i.e. compliance with norms and standards, cost efficiency of procurement process and promoting the reduction of regional economic disparities.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter presents the research design and methodology employed in this study. The research design and methodology give direction to the researcher on how the research plan and process of the study should be implemented (Quinlan, 2011:175). The chapter shows how the researcher applied the research design and method in order to achieve the aim and objectives stated in Chapter 1. The research design and methodology of the study was conducted in two phases. Phase 1 of the study was a literature study, while Phase 2 comprised an empirical study. Figure 3.1 presents the phases of the research design employed in the study.

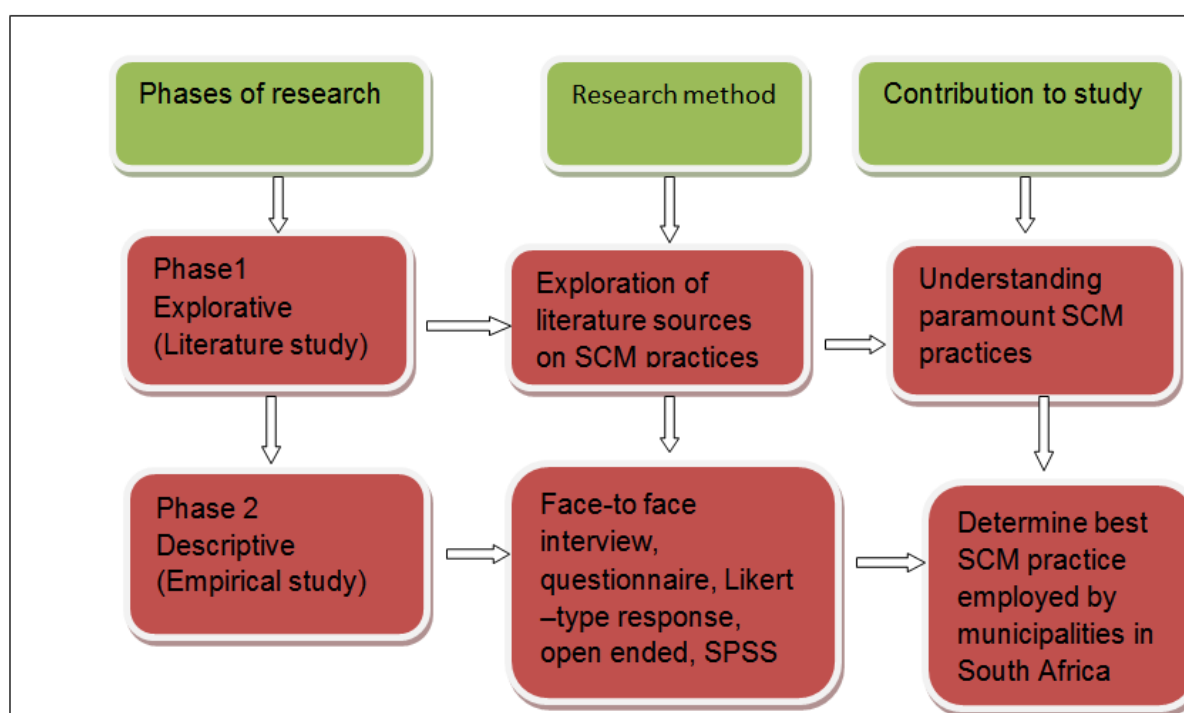


Figure 3.1: Phases of research design for study

Source: Researcher's own compilation, 2015

3.2 PHASE 1: LITERATURE STUDY

A literature study was conducted to explore SCM practices in the West Rand municipalities. Phase 1 of this study comprised of Chapters 1 and 2, where Chapter 1 provided an orientation of the study while Chapter 2 reviewed SCM practices. The

outcome of the literature study was an in-depth understanding of SCM practices in the South African public sector context, as well as understanding the various challenges inhibiting its implementation. The outcome of the literature study paved the way for Phase 2, the empirical study.

3.3 PHASE 2: EMPIRICAL STUDY

An empirical study involves drawing conclusions based on observation, experiment or experience from an investigation (Quinlan, 2011:12). In this study, the empirical study was conducted to explore SCM practices in the West Rand municipalities. The empirical processes discussed in this phase of the study are as follows: the research design, research approach, research strategy, population and sampling, data collection, research instrument and data analysis. Each of these will be discussed in the section below.

3.3.1 Research design

Research design is a plan or blueprint of how you intend conducting the research. In many ways, the format for the design of a study follows the traditional research approach of presenting a problem, asking a question, collecting data to answer the question, analysing the data, and answering the question (Kowalczyk, 2015). In the phases of design the researcher uses, either explicitly or implicitly, a set of philosophical assumptions that guide the study (Kowalczyk, 2015; Creswell 1998:19). Three types of research design exist in scientific research (Veal and Darcy, 2011:33), namely, exploratory, descriptive and explanatory as briefly explained below:

- **Exploratory research:** Exploratory research is defined as the initial research into a hypothetical or theoretical idea. This is where a researcher has an idea or has observed something and seeks to understand more about it. An exploratory research project is an attempt to lay the groundwork that will lead to future studies, or to determine if what is being observed might be explained by a currently existing theory. Most often, exploratory research lays the initial groundwork for future research.
- **Descriptive research:** Descriptive research is defined as attempts to explore and explain while providing additional information about a topic. This is where

research is trying to describe what is happening in more detail, filling in the missing parts and expanding our understanding. This is also where as much information is collected as possible instead of making guesses or elaborate models to predict the future - the 'what' and 'how,' rather than the 'why.'

- **Explanatory research:** Explanatory research is defined as an attempt to connect ideas to understand cause and effect, meaning researchers want to explain what is going on. Explanatory research looks at how things come together and interact. This research does not occur until there is enough understanding to begin to predict what will come next with some accuracy. The study generally comprises of a descriptive (empirical) as well as an exploratory (literature) phase, and the two phases are conducted separately.

In this study both descriptive and explorative research design were employed. Descriptive research was used to determine SCM practices in the West Rand District municipalities. Explorative research was used to gain an in-depth understanding of how SCM practitioners in the municipalities implement the practices.

3.3.2 The research approach

The research can be conducted in diverse ways and includes both theoretical and methodological approaches (Burney 2008:6). The theoretical approach can comprise of an inductive or a deductive approach, while the method can either be qualitative or quantitative. The two generic theoretical research approaches in scientific research are the deductive and inductive research approaches (Leedy and Ormrod, 2014:17) as briefly discussed below:

- **Deductive research approach:** A deductive research approach involves researching reasoning as a way of assuming occurrences or events which claim to be factual. In a deductive research approach, a researcher comprehends hypothesis or prior knowledge to clarify a certain problem or discover the problem solution (Grix, 2004:164).
- **Inductive research approach:** The inductive approach focuses on people's experiences and draws conclusions based on that (Leedy and Ormrod, 2014:19). The research used in the inductive approach is mostly concerned with the context in which the occurrences are taking places (Burney 2008:6).

Table 3.1 presents a summary of the attributes of the deductive versus the inductive approach.

Table 3.1: Attributes of deductive versus inductive approach

Deductive approach	Inductive approach
<ul style="list-style-type: none"> ▪ Principles based on science ▪ Movement is done from theory to data ▪ Causal relationships between variables need to be explained ▪ Quantitative type of data is mainly collected ▪ Measures of control are applied in order to ensure the validity of data ▪ Concepts are operationalised in order to ensure the clarity of definitions ▪ The approach is highly structured ▪ Researcher is independent from the research process ▪ Samples of a sufficient size need to be selected in order to be able to generalise research conclusions 	<ul style="list-style-type: none"> ▪ Aims to explore the meaning of human attachment to events ▪ Deeper insight into the research context ▪ Qualitative type of data is collected ▪ More flexible approach to research structure to ensure provisions for changes during the research ▪ Researcher is perceived to be a part of the research process ▪ Research findings do not have to be generalised

Source: Saunders *et al.*, 2007

This study made use of both deductive and inductive research approaches. The approaches were used to understand existing theory on SCM and also to gain an in-depth understanding of the existing challenges affecting its implementation in the public sector context.

As previously indicated, methodological research approaches can be classified as qualitative, quantitative or both (mixed method) (Leedy and Ormord, 2014:190). These research approaches are briefly explained below:

- **Qualitative research approach:** Qualitative methodology focuses on the involvement and interpretive, naturalistic approach to its subject matter. The reason for implementing it is because it emphasises the studied use and collection of a variety of empirical materials such as a case study, personal experience, introspective life story, interview, observational, historical, interactions and visual texts. It contains data which is a detailed description of situations, events, people, and interactions, observed behaviours, direct quotations from people about their experiences, attitudes, beliefs, thoughts and

case histories. It emphasises the grounded theory since one group of qualitative investigators advocates the theory which emerges from grounded data rather than abstract and tentative data (Benz 1998:13). A qualitative research approach involves taking notes or video recordings in order to pick up different approaches in which human and non-human beings behave and respond. It has to do with interpretation beliefs and ideas between various individuals, groups and associations (Saunders *et al.*, 2012:163).

- **Quantitative research approach:** Quantitative methods are often used as theory testing, and they also attempt the precise measurement of something. They usually measure consumer behaviour, knowledge, opinions or attitudes (Donald, Cooper and Schindler, 2008:164). To support repeatability of the findings, one experiment is usually conducted and statistical techniques are used to determine the probability of the same occurrences occurring over and over again. These tests of statistical significance result in findings that confirm or counter the original hypothesis. Quantitative designs reflect the procedures which are deductive in nature, contributing to the scientific knowledge base by theory testing. Because true experimental designs require tightly controlled conditions, the richness and depth of meaning for participants may be sacrificed. As a validity concern, this may be a limitation of quantitative design (Newman 1998:19). In quantitative research approach, the researcher focuses on certain part activities, and each action is calculated to establish the occurrence. The quantitative research approach draws conclusions on information about people's attributes, organisation and other things (Saunders *et al.*, 2012:162).
- **Mixed method:** Mixed methods is, generally speaking, an approach to knowledge (theory and practice) that attempts to consider multiple viewpoints, perspectives, positions, and standpoints (always including the standpoints of qualitative and quantitative research (Johnson, Onwuegbuzie and Turner 2007:113). Furthermore it's new, it its new movement, or discourse, or research paradigm (with a growing number of members) that has increased in response to the currents in quantitative research and qualitative research. Mixed methods research involves the use of a study with an integration of the different approaches or methods occurring during the programme of study, and not just at its concluding point (Bazeley *et al.*, 2006:64).

In this study, a mixed-method research approach was used (qualitative and quantitative).

The qualitative approach was used to obtain an in-depth understanding of the problem at hand, while a quantitative approach was used to determine the perception of the respondents on the implementation of supply chain practices in the various municipalities in the West Rand District.

3.3.3 Research strategy

A research strategy is an idea which the researcher will have on how to answer the research questions of the study being conducted (Saunders *et al.*, 2012:173). Research strategies could be observations, case studies, field research, surveys, interviews, focus groups and laboratory studies which are all implementable in various research studies (Smith, 2010:52; Mouton, 2011:148). The research strategy that was used in the study is a case study. A case study can be defined as a specific instance that is frequently designed to illustrate a more general principle (Cohen, Manion and Morrison, 2013:257). A case study was the preferred research strategy because it is the study of an instance in action conducted in the West Rand district municipalities. A case study enables the researcher to understand how ideas and abstract principles can fit together (Cohen *et al.*, 2013).

3.3.4 Population and sampling

This section of the chapter presents the population and sampling techniques employed in this study.

3.3.4.1 Population of the study

Population is defined as the total collection of elements about which we wish to make some interference (Cooper and Schindler, 2008:275). The targeted population of the study constitute municipalities in the West Rand District (Randfontein Local Municipality, Westonaria Local Municipality, Merafong City Local Municipality, Mogale City Local Municipality, and West Rand District Municipality). There are 278 municipalities in South Africa, classified under metropolitan (8); district (44) and local municipalities (226). Within each district, there are between 4 to 6 municipalities falling under one district council. The West Rand District which constitutes four local municipalities was chosen because of the accessibility of the respondents to the

researcher. Therefore, the population of the study involves four municipalities (local municipalities plus district).

3.3.4.2 Sampling

A sample is a subset or some part of a larger population (Zikmund and Babin, 2007:266). The two main types of sampling technique are the probability sampling technique and the non-probability sampling technique (Kent, 2007). In a probability sampling, the chances of any member of the population being selected are identified (Leedy and Ormrod, 2014:213), while in a non-probability sampling, the chances of selecting any population member are limited or unidentified as the total number of the population is not known (van Zyl, 2014:96).

Four types of non-probability sampling can be identified in research; this includes a convenient sampling, judgement sampling, quota sampling, and snowball sampling (Saunders *et al.*, 2012:281) as briefly discussed below:

- **Convenience sampling:** This refers to a sample that is easily accessible to be used by the researcher (Saunders *et al.*, 2012:291)
- **Purposive sampling:** It involves the sample that a researcher assumes best represents the population.
- **Quota sampling:** Quota sampling is a sample which represents a certain subgroup of the population where a researcher chooses the participants to include in the research.
- **Snowball sampling:** Snowball sampling is used when it is not easy to identify the anticipated population; it focuses on participants who volunteer to be part of the research.

Non-probability, convenience sampling was used in selecting the sample frame for this study. This is because the size of the population that was adopted was relatively small. In addition, purposive sampling was employed in this study. The basic criteria for selecting the respondents were based on the seniority of their position and them having expert knowledge of SCM practices. Hence, the respondents were SCM managers and practitioners. A total of 15 respondents were selected, as reflected in Table 3.2. For the purpose of confidentiality, the municipalities are denoted by the letters A, B, C and D.

Table 3.2: Sample size of the study

Municipality	Number of respondents
A	4
B	3
C	5
D	3
Total	15

3.3.5 Data collection and methods

There are many processes and methods of collecting data. Cooper and Schindler (2008:92) describe data as the facts presented to the researcher. Data collection is the process embarked upon to gather or collect information (Zikmund and Babin, 2007:55). This process can only truly begin once the sampling process is complete and formalised. Various studies rely on different sources of evidence in presenting their arguments and solutions. There are two basic types of data collection sources in scientific research, the secondary and the primary data sources. The primary data sources are data which is collected by the researcher for the purpose of the research at hand (Quinlan, 2011:242). This study made use of both primary and secondary data sources as explained below:

- **Primary (original) sources:** Primary data sources present first-hand knowledge of historical events (Quinlan, 2011:242). They are generally unpublished materials such as manuscripts, photographs, maps, artefacts, audio and video recordings, oral histories, postcards, and posters. Primary data collection is convenient, realistic and clear and includes data collection methods such as interviews and questionnaires. The reason for choosing these methods is that they minimise delays in gathering data. In this study, purposive sampling was employed and primary data collected through face-to-face interviews based on a semi-structured questionnaire.
- **Secondary (critical) sources:** The secondary sources portray the information or research that is derivative, such as a comment by a historian, an encyclopaedia article, or a critical essay. Farlex (2012) clearly defines the secondary sources as

the existing information such as academic journals, text books and the websites. Secondary data sources were used to gather information on the current SCM practices within the South African public sector context.

3.3.6 Research instrument and measurement

A research instrument is a tool used to collect and measure research data (Leedy and Ormrod, 2014:83). The research instrument used in this study was a semi-structured interview questionnaire. The semi-structured interview questionnaire was structured into two major sections: Section A required the demographic information of the respondents and Section B was related to their SCM practices. The semi-structured interview questionnaire was measured using a 5-likert scale response format with an ordinal scale ranging from 1- no extent, 2 - slight extent, 3 - moderate extent, 4 - large extent and 5 - very large extent (See Appendix C).

3.3.7 Data analysis

Data analysis involves defining data obtained from the research questionnaire, interpreting the data and drawing conclusions from that (Quinlan, 2011:365). After collecting the data for the study, it was analysed and interpreted. As this study is a mixed-method approach (qualitative and quantitative), the data analysis comprised descriptive, inferential and content analysis. The semi-structured interview questions were analysed descriptively and by inferential statistics, while a content analysis was used for the closed-ended questions (this refers to Section B, Part two of the questionnaire ONLY).

- **Descriptive statistics**

Descriptive statistics define information and allocate scores to describe certain behaviour. The statistical package for social sciences (SPSS) was used to analyse the data. The findings of the study are presented using tables and charts (Saunders, Lewis and Thornhill, 2009:428).

- **Inferential statistics**

In inferential statistics, the researcher tries to reach assumptions that extend further than the data (Quinlan, 2011:399). Statistically significant differences that exist between the different groups participating in the study will be tested. The

Fish Exact test was used in the analysis of this data. Fisher's test is a statistical significance test used in the analysis of contingency table. In practices, Fisher's test is employed when sample sizes are small; it is valid for all sample sizes (Aaker, Kumar and Day, 2007:445).

- **Content analysis**

Content analysis is used to evaluate the content of any writing (Quinlan, 2011:185). Content analysis is described as a group of systematic approaches ranging from native, explanatory analyses to systematic, strict word-based analyses (Graham, 2012). The comments on the responses in the semi-structured interview questionnaire were analysed and aligned with the literature and the research objectives. For the qualitative aspects of the study, ATLAS.ti was used. Atlas.ti is a data management software package. Unlike SPSS, Atlas.ti is not data analysis software but is data management software which allows researchers to create, modify, segment and retrieve data. As qualitative data is often voluminous, Atlas.ti makes analysis easier and enables data management that is difficult through manual coding and analysis (Frieze, 2012).

3.4 QUALITY OF RESEARCH DATA

In research it is critical to ensure quality of the research data; this can be done through reliability and validity testing of the measuring instrument.

- **Reliability**

A valid and reliable research instrument leads to appropriate conclusions from the data and will thus solve the research problem in a credible fashion (Leedy and Ormrod, 2010:91). Reliability measures the correctness, credibility, dependability, applicability, severity and trustworthiness of the measuring instrument employed. The research questionnaire was designed and the interview was highly structured. The researcher conducted a pilot test to ensure that the research instrument was correctly designed and tested what it was supposed to test (Cooper and Schindler, 2011:280).

- **Pilot test**

The pilot test was conducted with four supply chain practitioners of the municipalities to test the relevancy of each question in the research questionnaire. According to Cooper and Schindler (2011:89) a pilot study is implemented to discover the flaws of the research design or instrument and to give commission data of a probability sample. The pilot test allows the researcher to obtain certain valuation on the validity and the possible reliability of the data that will be collected (Saunders *et al.*, 2012:451). Questions or items were modified and refined after receiving the pilot tests feedback to ensure that they suited the general understanding of individuals.

- **Validity**

According to Leedy and Ormrod (2014:91) validity implies consistency applied in ensuring that corrective measuring instruments are implemented in the study. Cohen, Manion and Morrison (2013:135) indicate that there are two types of validity, namely internal validity which seeks to demonstrate that the explanation of a particular event, issue or set of data provided by pieces of data can actually be sustained by the data; and external validity which measures if data obtained can be generalised across various people groups, locations and periods.

3.5 ETHICAL CONSIDERATIONS

Voluntary and anonymous questionnaires were administered to a sample of 15 respondents in the West Rand municipalities with the permission obtained from the UNISA ethical committee in 2011. Each respondent was contacted telephonically prior to receiving the research questionnaire. The respondents were informed that the questionnaire was voluntary and the information was to be used for the purpose of completing a Master's degree. The ethical clearance was obtained from the department of Business Management and from the department of Postgraduate studies at UNISA. The letter of ethical clearance approval is presented in Appendix A. The research proposal and the questionnaire were reviewed by the ethics team and were found to be satisfactory. The research process of the study is summarised in Table 3.3 (refer to the section below).

3.6 THE RESEARCH PROCESS FOLLOWED IN THE STUDY

Table 3.3 summarises the research process used in this study, namely, the purpose of the study, design and approach, strategy, population, sampling, quality research, data collection method, data analysis, ethical considerations, study limitations and research timeline.

Table 3.3: The summary of the research process

The purpose of the study	To explore SCM practices in the West Rand municipalities.
The research design	Descriptive and exploratory
Research approach	Both deductive and inductive; quantitative and qualitative approach
Research strategy	A survey conducted to collect data in the West Rand municipalities
Population	The West Rand District which constitutes 4 local municipalities was chosen because of the accessibility to the respondents. Therefore, the population of the study involves 5 municipalities (4 locals plus 1 district).
Sampling	Purposive sampling
Quality research	Achieved through reliability and validity
Data collection method	Semi-structured interview questionnaire
Data analysis	Descriptive and inferential statistics, and content analysis
Research ethics	Achieved through informed consent, confidentiality and Unisa ethics approval
Study limitation	The respondents declined to provide all the answers and some of them even refused to complete the questionnaire

Source: Adapted from Ambe (2012:188)

3.7 CHAPTER SUMMARY

Interviews and questionnaires were used to obtain data from senior SCM officials from each of the four West Rand district municipalities. There are challenges facing the municipal SCM systems in the country. The researcher visited the respondents at work and interviewed them, also requested them to complete the questionnaires.

The researcher also conducted telephonic interviews with some respondents when it was not possible to meet them in person.

CHAPTER 4: DATA ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

This chapter discusses the data analysis and interpretation of the study with the aim of exploring the SCM practices in the West Rand municipalities. The population of this study comprised of supply chain managers who are responsible for SCM in the municipalities. The total sample size of the study consisted of 15 respondents. The findings of this study are presented as per different sections in the questionnaire. The questionnaire consisted of two sections: the first section consisted of the demographics and the second section dealt with the SCM practices.

The questionnaire was measured using a five Likert-scale format which includes the level of agreement from 1 (no extent) to 5 (very large extent). Each section in the research questionnaire included a column where the respondents were requested to provide additional comments regarding the questions asked. The data was captured, analysed and interpreted by means of Microsoft Excel and Statistical Programme for Social Sciences (SPSS version 23). Descriptive and inferential statistics were used for the presentation of the findings. The presentation of the findings starts with the demographic profiles of the respondents and thereafter the SCM practices are presented.

4.2 DEMOGRAPHIC PROFILES

This section presents the demographic profiles of the respondents. Respondents were asked to indicate the level of agreement from 1 = no extent to 5 = very large extent to the statement relating to the SCM practices in their municipalities as well as their job positions and years of experience. The findings are presented using tables and pie charts described in percentages.

4.2.1 Distribution of respondents per municipality (N = 15)

This section outlines the demographic profile of different municipalities presented in this study. Table 4.1 presents the distribution of the respondents per municipality and Figure 4.1 presents the distribution of the respondents by municipality in percentages. For reasons of confidentiality, the municipalities are named as **Municipality A, B, C, and D.**

Table 4.1: Distribution of the respondents per municipality (N = 15)

Municipality	N	Percentage
A	4	26.7
B	3	20.0
C	5	33.3
D	3	20.0
Total	15	100

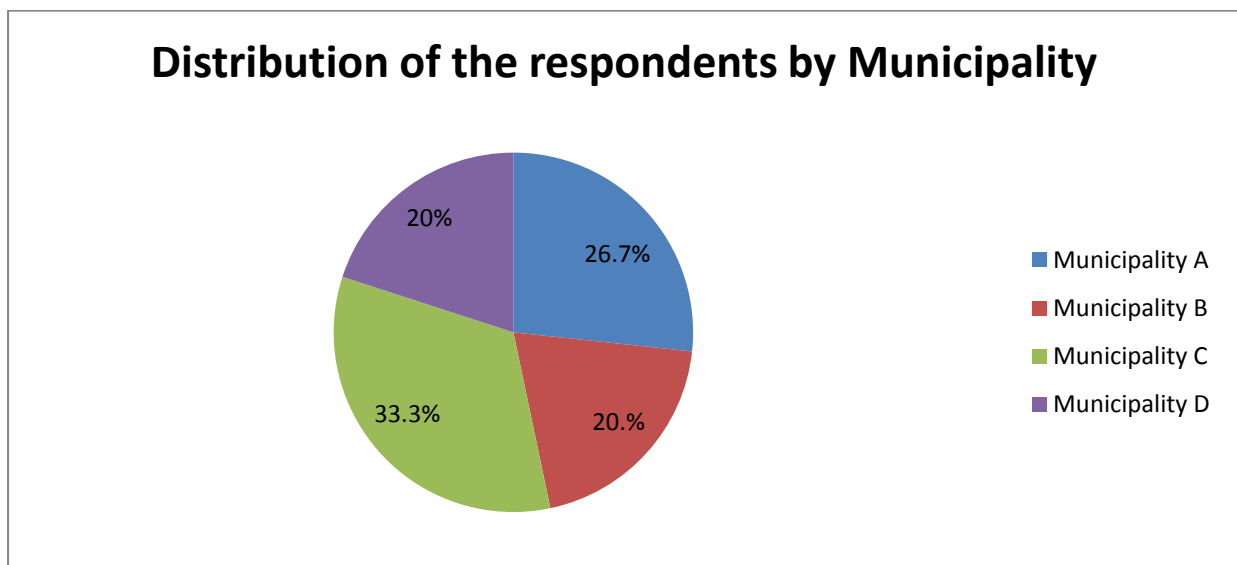


Figure 4.1: Distribution of the respondents by municipality (N = 15)

Table 4.1 and Figure 4.1 indicate the distribution of respondents in the sample by municipality. The majority of the respondents were from Municipality C (33.3%), followed by Municipality A (26.7%) and lastly, Municipality B and D with 20% each.

4.2.2 Distribution of respondents per rank (N = 15)

This section presents the job level profiles of the respondents. Respondents were asked to indicate their agreement to the statement relating to their job level. The job level profile of the respondents is summarised in Table 4.2 and is graphically presented in the pie chart in Figure 4.2.

Table 4.2: Distribution of respondents per rank (N =15)

Rank	N	Percentage
SCM Managers	2	13.3
SCM Practitioners	13	86.7
Total	15	100

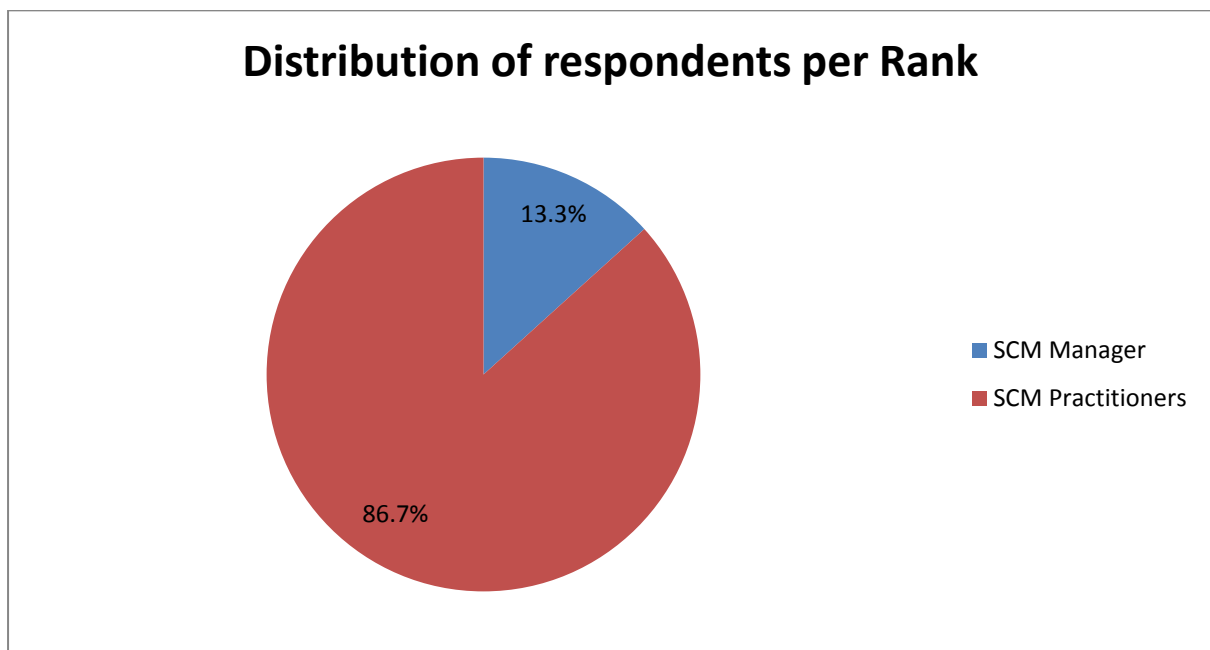


Figure 4.2: Distribution of respondents per rank (N =15)

As indicated in Table 4.2 and Figure 4.2, there are two SCM job levels in municipalities and 86.7% of the respondents were SCM practitioners while 13.3% were SCM managers. Therefore, the most majority of respondents in the study were SCM practitioners.

4.2.3 Distribution of respondents per year of experience (N = 15)

This section of the chapter presents the job tenure profile of the respondents. Respondents were asked to indicate their agreement on the statements relating to their length of service at the municipality. Table 4.3 and Figure 4.3 represent the responses of the participants related to their years of experience (according to percentages).

Table 4.3: Distribution of respondents per year of experience (N = 15)

Years of experience	N	Percentage
Less than 1 year	2	13.3
2 – 5 years	1	6.7
6 – 10 years	11	73.3
Above	1	6.7
Total	15	100

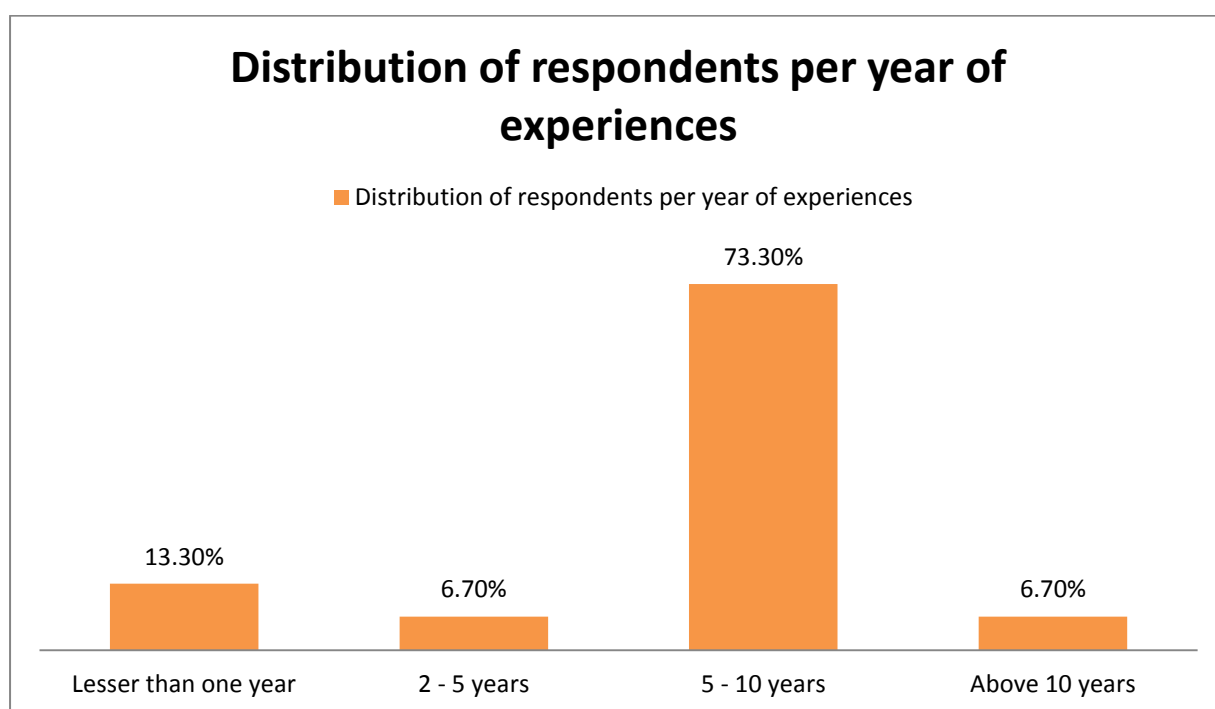


Figure 4.3: Distribution of respondents per year of experience (N = 15)

Table 4.3 and Figure 4.3 above indicate the years of experience distribution of respondents in the sample. The length of service of the respondents was measured according to the categories, ranging from less than one year to over 10 years, and the frequency seemed to be concentrated around 6 to 10 years (73.3%). Respondents with less than one year of experience constituted 13.3%, while those with between 2 and 5 years of experience, and those above 10 years of experience each comprised 6.7% of the sample (n=15).

4.3 CURRENT SUPPLY CHAIN MANAGEMENT PRACTICES

This section presents the findings of the second part of the questionnaire. Respondents were asked to indicate their agreement from 1 (no extent) to 5 (very large extent) on the statement relating to demand management, acquisition management, logistics management, disposal management, risk management, supply chain performance, and supply chain challenges.

4.3.1 Demand management

This section presents the respondents perceptions regarding demand management practices. The respondents were asked to indicate their level of agreement to nine statements regarding demand management practices in their municipalities. The statements were measured using a 5-point Likert scale format (where 1 = no extent, 2 = slight extent, 3 = moderate extent, 4 = large extent, and 5 = very large extent). Table 4.4 shows the perceptions of the respondents regarding demand management measured in percentages. Table 4.5 shows the description of the statements used in Table 4.4.

Table 4.4: Perception of respondents regarding demand management practices measured in percentages

Statements	No extent		Slight extent		Moderate extent		Large extent		Very large extent		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
B4-1	-	-	1	6.7	3	20	5	33.3	6	40	15	100
B4-2	1	6.7	-	-	3	20	4	26.7	7	46.7	15	100
B4-3	2	13.3	3	20	2	13.3	4	26.7	4	26.7	15	100
B4-4	1	6.7	1	6.7	1	6.7	3	20	9	60	15	100
B4-5	-	-	1	6.7	1	6.7	6	40	7	46.7	15	100
B4-6	-	-	1	6.7	2	13.3	4	26.7	8	53.3	15	100
B4-7	2	13.3	3	20	5	33.3	3	20	2	13.3	15	100
B4-8	1	6.7	1	6.7	10	66.7	3	20	-	-	15	100
B4-9	2	13.3	1	6.7	7	46.7	3	20	2	13.3	15	100

Table 4.5: Description of statements used in Table 4.4 relating to demand management

Quotes	Description of statements
B4-1	Our specifications for bid documents are always correct
B4-2	All our purchases were budgeted for
B4-3	We always analyse the market before sending out bids
B4-4	We have procurement plans in place by different departments
B4-5	We effectively utilise our bid register
B4-6	We procure based on IDP
B4-7	We conduct spent analysis of previous years
B4-8	Our suppliers always adhere to delivery dates
B4-9	User departments always submit PPs in time

Source: Questionnaire

In terms of the perception of the respondents on demand management, Table 4.4 indicates that on average, 63% of the respondents agree to a large extent or very large extent with the statements relating to the correct use of demand management practices.

The highest responses were on the statements relating to the effective use of the bid register (B4-5 with 87%). This was followed by the importance of procurement plans and procurement based in IDP (B4-4 and B4-6 respectively with 80%). The third highest category of agreement was with the statement on the purchases that were budgeted for (B4-2 with 73%). Fourth highest agreements were with the statement linking to specifications and bid documents (B4-1 with 70%). The fifth highest category of agreement was with the statement relating to the analysis of the market before sending out bids (B4-3 with 53.4%).

Moreover, Table 4.4 reveals that 50% of the respondents moderately agreed with the statements relating to suppliers' adherence to delivery dates (B4-8 with 66.7%). The lowest category of agreement was with the user department submission of PPs in time (B4-9 with 46.7%). This was followed by agreement with the statement relating to conducting a spent analysis of the previous years (B4-7 with 33.3 %).

Table 4.4 stipulates that more than 20% of the respondents agree (slight extent) with the statement relating to an analysis of the market before sending out bids (B4-3) and they slightly think that municipalities are conducting spent analysis of the previous years.

The results as reflected in Table 4.4 show that less than 10% of the respondents agree to a slight extent with the statements relating to specification and bid document (B4-1), procurement plans in place (B4-4), the effective use of the bid register (B4-5), procurements are based on IDP (B4-6), suppliers always adhere to delivery dates (B4-4) and users who always submit PPs in time.

4.3.2 Acquisition management

This section presents the perception of the respondents regarding acquisition management. Participants were asked to indicate the extent to which they agree on the statement relating to acquisition management practices in their respective municipalities. The statements were measured using a 5-point Likert scale format (where 1 = no extent, 2 = slight extent, 3 = moderate extent, 4 = large extent, and 5 = very large extent). Table 4.6 shows (in percentages) the perception of the respondents regarding the acquisition management practices measured. Table 4.7 shows the description of the statements used in Table 4.6.

Table 4.6: Perception of the respondents on the statement regarding acquisition management

Statements	No extent		Slight extent		Moderate extent		Large extent		Very large extent		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
B5-1	-	-	-	-	3	20	6	40	6	40	15	100
B5-2	-	-	1	6.7	1	6.7	3	20	10	66.7	15	100
B5-3	1	6.7	-	-	2	13.3	5	33.3	7	46.7	15	100
B5-4	-	-	1	6.7	-	-	2	13.3	12	80	15	100
B5-5	-	-	-	-	4	26.7	3	20	8	53.3	15	100
B5-6	3	20	3	20	1	6.7	5	33.3	3	20	15	100
B5-7	8	53.3	1	6.7	4	26.7	1	6.7	1	6.7	15	100

Statements	No extent		Slight extent		Moderate extent		Large extent		Very large extent		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
B5-8	-	-	-	-	1	6.7	2	13.3	12	80	15	100
B5-9	-	-	-	-	1	6.7	1	6.7	13	86.7	15	100
B5-10	2	13.3	4	26.7	6	40	-	-	3	20	15	100
B5-11	15	100	-	-	-	-	-	-	-	-	15	100
B5-12	11	73.3	2	13.3	2	13.3	-	-	-	-	15	100

Table 4.7: Description of statements used in Table 4.6 relating to acquisition management practices

Statements	Description of statements
B5-1	We have effective sourcing strategies
B5-2	Supplier database updated annually
B5-3	All verbal quotes followed up with written quotes
B5-4	All suppliers in database have signed vendor forms
B5-5	We have appropriate control of SCM data
B5-6	Adequate control in place to prevent splitting of orders
B5-7	There is favouritism for suppliers selection for written quotations
B5-8	We use competitive bidding for amounts exceeding R200 000
B5-9	Bid document always indicate 80/20 or 90/10 preference points
B5-10	SCM powers and duties are verbally delegated
B5-11	We sometimes consider late bids
B5-12	Bid committee members do not understand their functions

Source: Questionnaire

In relation to Table 4.6, the results show that 72.2% of the respondents agree (large extent or very large extent) with statements relating to effective sourcing strategies (B5-1). Followed by statements relating to bid documents always indicating 80/20 or 90/10 preferred points (B5-9 with 93.4%). This was followed by the statements

relating to suppliers having a signed vendor form and the use of competitive bidding for exceeding amount (B5-4 and B5-8 with 93.3% each). The fourth highest response was to the statement relating to the updating of the supplier database (B4-2 with 86.7%). This was followed by the statement relating to verbal quotes followed with written quotes (B5-3 with 80%). The sixth highest percentage was related to the statement on control to prevent the splitting of orders (B5-6 with 73.3%).

In terms of the perception of the respondents on acquisition management, Table 4.6 indicates that on average, 58.8% of the respondents agree to a large extent or very large extent with the statements relating to acquisition management practices. The results in Table 4.6 further indicate that on average, less than 15% of the respondents agree moderately with the statement relating to SCM powers and duties that are verbally delegated (B5-10). The results also show also that on average, less than 30% of the respondents disagree (no extent or slight extent) with the statement relating to late bids that are considered (B5-11). This was followed by the statement relating to bid committee members who do not understand their function (B5-12 with 73.3%).

4.3.3 Logistic management

When it comes to logistic management, the respondents were asked to indicate their level of agreement with twelve statements related to logistic management practices ranging from 1 (no extent) to 5 (very large extent). Table 4.8 (on the next page) presents the perceptions of respondents expressed in percentages and Table 4.9 presents the description of the statements used in Table 4.8.

Table 4.8: Perception of respondents on statements relating to logistic management

Statements	No extent		Slight extent		Moderate extent		Large extent		Very large extent		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
B6-1	-	-	1	6.6	3	20	7	46.7	4	26.7	15	100
B6-2	-	-	1	6.7	2	13.3	5	33.3	7	46.7	15	100
B6-3	3	20	1	6.7	6	40	5	33.3	-	-	15	100
B6-4	5	33.3	1	6.7	6	40	1	6.7	2	13.3	15	100
B6-5	9	60	1	6.7	4	26.6	-	-	1	6.7	15	100
B6-6	-	-	1	6.7	8	53.3	3	20	3	20	15	100
B6-7	2	13.3	2	13.3	4	26.7	2	13.3	5	33.3	15	100
B6-8	3	20	2	13.3	4	26.7	-	-	6	40	15	100

Table 4.9: Description of statements in Table 4.8 relating to logistic management

Statements	Description of statements
B6-1	We have effective warehouse management
B6-2	All stock items are distributed from warehouse
B6-3	Transport management have updated log books
B6-4	Stock levels are replenished monthly
B6-5	Orders are placed once a month
B6-6	We have appropriate procedure manuals
B6-7	Adequate control in place to prevent theft of stock
B6-8	End-user and SCM officials identify stock during deliveries

Source: Questionnaire

In terms of the perceptions of the respondents on logistic management, Table 4.8 indicates that on average, 53% of the respondents agree to a large extent or very large extent with the statements relating to logistic management practices. The highest responses were to the statement relating to the distribution of items from the

warehouse (B6-2 with 80%). This was followed by the statement relating to effective management of the warehouse (B6-1 with 73.4%). The lowest category of responses was to the statements relating to adequate control to prevent theft of stock (B6-7 with 46.6%). This was followed by the statement relating to an appropriate manual procedures and official identification of stock during deliveries (B6-6 and B6-8 with 40%).

The results in Table 4.8 further indicate that on average, less than 32% of the respondents agree to a moderate extent with the statements relating to logistic management practices. The highest acceptance was with the statement related to correct manual procedures (B6-6 with 53.3%). This was followed by the statements relating to transport management having an updated log book and stock levels that are replenished monthly (B6-3 and B6-4 with 40% each). Moreover, the results in Table 4.8 further show that on average, 28% of the respondents agree to no extent or a slight extent with the statements relating to logistic management practices. The highest response (no extent) was on the statements relating to orders that are placed once a month (B6-5 with 60%).

4.3.4 Disposal management

This section presents the perceptions of respondents on disposal management practices. The respondents were asked to indicate their level of agreement to five statements relating to disposal management practices, ranging from 1 (no extent) to 5 (very large extent). Table 4.10 presents the perceptions of respondents expressed in percentages, and Table 4.11 presents the description of the statements used in Table 4.10.

Table 4.10: Perceptions of respondents on the statement relating to disposal management

Statements	No extent		Slight extent		Moderate extent		Large extent		Very large extent		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
B7-1	-	-	4	26.7	2	13.3	5	33.3	4	26.7	15	100
B7-2	3	20	2	13.3	2	13.3	6	40	2	13.3	15	100
B7-3	3	20	3	20	3	20	6	40	-	-	15	100
B7-4	1	6.7	4	26.7	1	6.7	6	40	3	20	15	100
B7-5	7	46.7	3	20	1	6.7	3	20	1	6.7	15	100

Table 4.11: Description of statements in Table 4.10 relating to disposal management

Statements	Description of statements
B7- 1	Effective assets register available for managing of assets
B7- 2	Proper controls available for immovable assets
B7- 3	Effective database available for unserviceable items
B7- 4	Availability of asset disposal policy
B7- 5	Adequate processes are implemented in disposing of explosives

Source: Questionnaire

As shown in Table 4.10, the result reveals that on average, 52% of the respondents agree to a large extent or very large extent with the statements relating to disposal management practices. The highest scores were on the statements relating to effective assets register and the availability of an asset disposal policy (B7-1 and B7-4 respectively with 60%). This was followed by the statement linking to the availability of proper controls for immovable assets (B7-2 with 53.3%). The lowest responses were on the statements connecting to a database available for unserviceable items (B7-3 with 40%).

Moreover, the results indicate that on average, less than 15% of the respondents agree to a moderate extent with the statements relating to disposal management variable. The Table 4.11 shows that on average, 40% of the respondents agree with

no extent or slight extent with the disposal management component. The lowest score was related to the statements relating to appropriate processes in disposing of explosives or obsolete assets (B7-5 with 46.7%).

4.3.5 Risk management

This section presents the perceptions of respondents regarding risk management practices. The respondents were asked to indicate their level of agreement with five statements relating to risk management practices ranging from 1 (no extent) to 5 (very large extent). Table 4.12 presents the perceptions of the respondents expressed in percentages and Table 4.13 presents the description of the statements used in Table 4.12.

Table 4.12: Perceptions of the respondents on the statement relating to risk management

Statements	No extent		Slight extent		Moderate extent		Large extent		Very large extent		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
B8-1	3	20	-	-	2	13.3	6	40	4	26.7	15	100
B8-2	1	6.7	2	13.3	3	20	4	26.7	5	33.3	15	100
B8-3	-	-	1	6.7	5	33.3	3	20	6	40	15	100
B8-4	-	-	-	-	4	26.7	5	33.3	6	40	15	100
B8-5	2	13.3	-	-	6	40	-	-	7	46.7	15	100

Table 4.13: Description of statements in Table 4.12 relating to risk management

Statements	Description of statements
B8- 1	Effective risk management policy
B8- 2	Risk management evaluates SCM processes
B8- 3	Bid documents are legally sound
B8- 4	Contracts are vetted before tender processes
B8- 5	Availability of staff development programmes

Source: Questionnaire

The findings relating to the risk management practices show that on average, more than 67.3% agrees to a large extent or very large extent with the statements linking to unintended or unexpected outcome of a decision. The highest responses were related to the statements relating to an operational risk management policy (B8-1 with 66.7%). This was followed by the statements relating to contract and tender processes (B8-4 with 63.3%). The third highest responses were to the statements relating to the evaluation of SCM process and bid documents (B8-2 and B8-3 with 60% each). The lowest scores were to the statements relating to availability or opportunity for staff development (B8-5 with 46.7%).

The findings also revealed that on average, less than 28% of the respondent agree to a moderate extent with the statements relating to risk management practices. Highest responses were to the statements relating the contract and tender process (B8-4 with 40%). From the findings it is indicated that on average, less than 15% of the respondents agree (no extent or slight extent) with the statements relating to the risk management component.

4.3.6 Supply chain performance

In this section respondents were asked to indicate their level of agreement with five statements relating to supply chain performance from 1 (no extent) to 5 (very large extent). Table 4.14 presents the perceptions of the respondents articulated in percentages. Table 4.15 presents the description of the statements used in Table 4.14.

Table 4.14: Perceptions of the respondents on the statement relating supply chain performance

Statements	No extent		Slight extent		Moderate extent		Large extent		Very large extent		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
B9-1	3	20	-	-	4	26.7	2	13.3	6	40	15	100
B9-2	7	46.7	1	6.7	2	13.3	3	20	2	13.3	15	100
B9-3	2	13.3	1	6.7	1	6.7	4	26.7	7	46.7	15	100
B9-4	-	-	-	-	2	13.3	3	20	10	66.7	15	100
B9-5	1	6.7	1	6.7	3	20	3	20	7	46.7	15	100

Table 4.15: Description of statements in Table 4.14 relating to supply chain performance

Statements	Description of statements
B9- 1	Effectively review of achievement of goals
B9- 2	Proper procedure manuals for generated savings
B9- 3	Effective policies to monitor compliance
B9- 4	SCM objectives are aligned with Government policies
B9- 5	Adequate controls to review SCM performance

Source: Questionnaire

Table 4.14 reflects that on average; more than 62.7% of the municipalities' respondents are in agreement (to a large extent or very large extent) with the statements relating to supply chain performance practices.

4.3.7 Summary of the findings

Overall the findings indicated that demand management was perceived by all the respondents as the SCM practice that they scored the highest in. The findings revealed that on average, more than two thirds of the participants perceived that their municipalities make use of bid registers, procure based on IDP, the presence of procurement plans, purchases are budgeted, specification of bid documents and there is an analysis of market or industry before sending out the bid. These factors positively influence the demand management activities.

The findings highlight that more than half of respondents perceived that there are positive alignments between SCM objectives and government policies, effective compliance monitoring systems, adequate controls for SCM performance review (supply chain performance), and effective sourcing strategies, recording of all suppliers and use of competitive bidding for excessive approach (acquisition management). The findings also suggest that the disposal, logistic and supply chain challenges scored the lowest of all the components of SCM practices.

4.4 DIFFERENCES BETWEEN MUNICIPALITIES WITH REGARDS TO SCM PRACTICES

This section discusses the significant differences between the different municipalities with regards to SCM practices. Fisher's Exact Test was used to test the significant differences as it is more accurate than other tests when the sample is small (Pallant, 2010). In this study, Fisher's Exact Test was chosen due to the small sample sizes of respondents per municipality. Fisher's Exact Test was used to test the hypothesis regarding the statistical differences between the four municipalities with regards to the SCM practices. One hypothesis was tested as indicated below.

4.4.1 Differences between municipalities regarding SCM practices

This section determines if there was a significant difference between the different municipalities with regards to the SCM practices. The following hypothesis was formulated.

Null Hypothesis

H0: there is no significant difference between the different municipalities regarding SCM practices.

Alternative Hypothesis

H1: there is significant difference between the municipalities regarding SCM practices.

Table 4.16 (on the next page) presents the significant differences between the different municipalities with regards to SCM practices.

Table 4.16: The statistical significant differences between the different municipalities with regards to SCM practices

A: Acquisition management	Chi-square	P-value	(%) Level of significance
B5-1 We have effective sourcing strategies	15.375	0.005	5%
B5-3 All verbal quotes followed up with written quotes	17.186	0.0167	5%
B5-4 All suppliers in database have signed vendor forms	10.313	0.044	5%
B5-6 Adequate control in place to prevent splitting of orders	12.400	0.007	5%
B5-8 We use competitive bidding for amounts exceeding R200 000	10.313	0.044	5%
B: Logistic management	Chi-square	P-value	(%) Level of significance
B6-1 We have effective warehouse management	20.223	0.004	5%
B6-2 All stock items are distributed from warehouse	18.471	0.017	5%
B6-7 Adequate control in place to prevent theft of stock	19.875	0.040	5%
C: Disposal management	Chi-square	P-value	(%) Level of significance
B7-1 Effective assets register available for managing of assets	22.538	0.009	5%
B7-3 Effective database available for unserviceable items	18.000	0.029	5%
B7-4 Availability of asset disposal policy	21.104	0.009	5%
D: Risk management	Chi-square	P-value	(%) Level of significance
B8-4 Contracts are vetted before tender process	16.838	0.003	5%
B8-5 Availability of staff development programmes	11.786	0.023	5%
E: Supply chain performance	Chi-square	P-value	(%) Level of significance
B9-1 Effectively review achievement of goals	18.750	0.009	5%
F: Supply chain challenges	Chi-square	P-value	(%) Level of significance
B10-1 We do not always comply with SCM policies and regulations	16.500	0.031	5%

B10-3 We face inadequate accountability and control mechanism	12.687	0.035	5%
B10-8 Broad-based black economic empowerment is ineffective	16.800	0.001	1%
B10-12 Conflict of interest	16.688	0.028	5%
B10-13 Lack of SCM skilled personnel	22.313	0.003	5%
B10-14 Lack of adequate capacity	28.313	0.001	1%
B10-15 Proper training of our SCM staff is required	12.863	0.029	5%

Table 4.16, Section A contains the findings of Fisher's Exact Test, conducted to determine whether the acquisition management of respondents demonstrated a significant difference according to the different municipalities at a significant level of .05. As seen in Table 4.16 there was: $X^2 = 15.375$, $p = 0.005$ between effective sourcing strategies (B5-1) and Municipality C $X^2 = 17.186$; $p = 0.017$ between the verbal quotes followed up with written quotes (B5-3) and municipality; $X^2 = 10.313$, $p = 0.007$ between the presence of all suppliers in the database (B5-4) and municipality C; $X^2 = 12.400$, $p = 0.007$ between adequate control mechanism to prevent splitting of orders (B5-6) and municipality C; and $X^2 = 10.313$, $p = 0.044$ between the use of competitive bidding for exceeded amount (B5-8) and municipality C. According to these findings, it may be stated that effective sourcing strategies, verbal quotes, supplier's database and control mechanism demonstrated a significant difference according to the municipalities. Considering the frequency percentages, it was found that respondents from municipality C have a higher response scores to the B5-1, B5-3, B5-4, B5-6 and B5-8 statements.

Table 4.16, Section B reports the result of the Fisher's Exact Test, which was conducted in order to determine whether logistic management of respondents demonstrated a significant difference according to the municipalities at a significant level of 0.05. As seen in Table 4.16, there was an: $X^2 = 20.223$, $p = 0.004$ between having an effective warehouse management (B6-1) and municipality C; $X^2 = 18.471$, $p = 0.017$ between the item distributed from the warehouse (B6-2) and municipality C; and $X^2 = 19.875$, $p = 0.040$ between the adequate control system to prevent theft of stock (B6-7) and municipality C. According to these findings, it may be stated that the effective warehouse management, items distributed from the warehouse and the

appropriate control system to prevent theft statements demonstrated a significant difference according to municipalities. Considering the proportion of the percentage, it was found that respondents from municipality C have higher response scores to B6-1, B6-2 and B6-7 statements.

Table 4.16, Section C indicates the results of the Fisher's Exact Test, which was conducted in order to determine whether the disposal management of respondents demonstrated a significant difference according to the municipalities at a significant level of 0.05. As seen in Table 4.16C, there was an: $X^2 = 22.538$, $p = 0.009$ between effective assets register to manage assets (B7-1) and municipality C; $X^2 = 18.000$, $p = 0.029$ between effective database for unserviceable items (B7-3) and municipality C; and $X^2 = 21.104$, $p = 0.009$ between presence of asset disposal policy (B7-4) and municipality C. According to these findings, it may be deduced that assets register; effective database and disposal policy statements demonstrated a significant difference according to the municipalities. Considering the proportion in percentages, it was found that respondents from municipality C have a high response score to B7-1, B7-3 and B7-4 statements.

Table 4.16 Section D indicates the results of the Fisher's Exact Test, which was conducted in order to determine whether risk management of the respondents demonstrated a significant difference according to the different municipalities at a significant level of 0.05. As seen in Table 4.16D, there was an: $X^2 = 16.838$, $p = 0.003$ between the contracts vetted before tender process (B8-4) and municipality C; and $X^2 = 11.786$, $p = 0.003$ between availability of staff development programmes (B8-5) and municipality C. According to these findings, it was stated that contracts before tender process and availability of skill development statements demonstrated a significant difference according to the municipalities. Considering the proportion of percentages, it was found that respondents from municipality C have a high responses score to B8-4 and B8-5 statements.

Table 4.16, Section E records the findings of the Fisher's Exact Test, which was conducted in order to determine whether supply chain performance of respondents demonstrated a significant difference according to the municipalities at a significant level of 0.05. As seen in Table 4.16E, there was an: $X^2 = 18.750$, $p = 0.009$ between B9-1 and municipality C. According to this finding, it was stated that effective

achievement of goals demonstrated a significant difference according to municipalities. Considering the proportion of percentage, it was found that the respondents from municipality C have a high responses score to B9-1 statement.

Table 4.16, Section F reports the findings of the Fisher's Exact Test, which was conducted in order to determine whether supply chain challenges of the respondents demonstrated a significant difference according to the municipality at a significant level of 0.05. As seen in Table 4.16F, there was an: $X^2 = 16.500$, $p = 0.031$ between lack of compliance with SCM policies and regulations (B10-1) and municipality C; $X^2 = 12.687$, $p = 0.035$ between inadequate of accountability control mechanism (B10-3) and municipality C; $X^2 = 16.800$, $p = 0.001$ between ineffective broad-based black empowerment (B10-8) and municipality C; $X^2 = 16.688$, $p = 0.028$ between the conflict of interest (B10-12) and municipality C ; $X^2 = 22.313$, $p = 0.003$ between the lack SCM skilled workers (B10-13) and municipality C; $X^2 = 28.313$, $p = 0.001$ between lack of adequate capacity (B10-14) and municipality C ; and $X^2 = 12.863$, $p = 0.029$ between SCM staff training required (B10-15) and municipality C. According to these findings, it was stated that lack of compliance, inadequate accountability control system, ineffective black empowerment, and conflict of interest, lack of skills, capacity and need for SCM staff training statements demonstrated a significant difference according to the municipalities. Considering the proportion of percentages, it was found that the respondents from municipality C have a high responses score to B10-1, B10-3, B10-8, B10-12, B10-13, B10-14 and B10-15 statements.

The findings highlight that there is no significance difference between the West Rand District municipalities with regard to the SCM practices. However, there were significance difference between some areas of acquisition, logistics, disposal, risk, supply chain performance and challenges with the municipality C.

4.5 SUPPLY CHAIN CHALLENGES

In this section respondents were asked to indicate their level of agreement with fifteen (15) statements relating to supply chain challenges from 1 (no extent) to 5 (very large extent). Table 4.17 presents the perceptions of the respondents articulated in percentages. Table 4.18 presents the description of statements used in Table 4.17.

Table 4.17: Perceptions of the respondents on the statement relating supply chain challenges

Statements	No extent		Slight extent		Moderate extent		Large extent		Very large extent		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
B10-1	9	60	1	6.7	4	26.7	1	6.7	-	-	15	100
B10-2	10	66.7	5	33.3	-	-	-	-	-	-	15	100
B10-3	7	46.7	-	-	3	20	5	33.3	-	-	15	100
B10-4	7	46.7	2	13.3	3	20	3	20	-	-	15	100
B10-5	8	53.3	2	13.3	-	-	4	26.7	1	6.7	15	100
B10-6	9	60	2	13.3	1	6.7	3	20	-	-	15	100
B10-7	2	13.3	3	20	4	26.7	5	33.3	1	6.7	15	100
B10-8	10	66.7	1	6.7	4	26.7	-	-	-	-	15	100
B10-9	7	46.7	4	26.7	3	20	1	6.7	-	-	15	100
B10-10	10	66.7	4	26.7	1	6.7	-	-	-	-	15	100
B10-11	8	53.3	1	6.7	3	20	2	13.3	1	6.7	15	100
B10-12	8	53.3	2	13.3	4	26.7	1	6.7	-	-	15	100
B10-13	4	26.7	1	6.7	4	26.7	6	40	-	-	15	100
B10-14	3	20	1	6.7	4	26.7	6	40	1	6.7	15	100
B10-15	-	-	-	-	4	26.7	1	6.7	10	66.7	15	100

Table 4.18: Description of statements in Table 4.17 relating to supply chain challenges

Statements	Description of statements
B10-1	We do not always comply with SCM policies and regulations
B10-2	Unauthorised disclosure of confidential information
B10-3	We face inadequate accountability and control mechanisms
B10-4	Lack of links on interdepartmental database
B10-5	We lack proper infrastructure

B10-6	We lack transparency within our SCM system
B10-7	We are challenged with poor planning
B10-8	Broad-based black economic empowerment is ineffective
B10-9	SCM officials are sometimes corrupt
B10-10	We are sometimes challenged with cases of SCM fraud by officials
B10-11	We lack an effective SCM monitoring system
B10-12	Conflict of interest
B10-13	Lack of SCM skilled personnel
B10-14	Lack of adequate capacity
B10-15	Proper training of our SCM staff is required

Source: Questionnaire

In terms of the perception of the respondents on the supply chain challenges, Table 4.17 reveals that 23.1% of the respondents agree to a large extent or very large extent with the statements relating to supply chain challenges practices. The highest response was to the statement relating to the need of training for the SCM staff (B10-15 with 73.4%). This was followed by the first low scores on the statements relating to lack of adequate capacity (B10-14 with 46.7%). A lower score was obtained by the statements linking to lack of SCM skilled workers (B10-13 with 40%).

From the findings in Table 4.17, the results indicate that on average, 18.7% of the respondents agree (moderate extent) with the statements relating to supply chain challenges. The scores reflected with statements relating to poor planning (B10-7 with 26.7%).

As reflected in Table 4.17, the results show that on average, 58.2% of the respondents agree (no extent or slight extent) with the statements relating to supply chain challenges. The highest scores were on the statements relating to unauthorised disclosure of confidential information (B10-2 with 100%). This was followed by the statements linking to cases of SCM fraud by officials (B10-10 with 93.4%). The third highest scores were on the statements relating to poor planning, ineffective of black economic empowerment initiatives, and SCM officials that are sometimes corrupt (B10-6, B10-8 and B10-9 with 73.4% each). The fourth highest scores were on the statements relating to lack of compliance with SCM policies,

infrastructure, and conflict of interest (B10-1, B10-5 and B10-12 respectively with 66.7% and 66.6%). The results also revealed that respondents scored higher on the statements relating to the lack of interdepartmental database and effective monitoring system (B10- 4 and B10-11 with 60% each). The lowest scores were indicated on the statements relating to inadequate accountability and absence of control mechanisms (B10-3 with 46.7%). The findings further assert that there are challenges facing the municipal officers in implementing their supply chain practices. There is a need for appropriate training of SCM staff, and there is a lack of proper capacity, poor planning, and ineffective black economic empowerment. The results further indicated that there was a lack of compliance with SCM policies, conflict of interest, lack of an effective monitoring system, lack of accountability and inadequate control systems in the West Rand District municipalities.

4.6 CONTENT ANALYSIS

This section focuses on the content analysis based on the SCM practices of the 15 respondents that were involved in the study. Table 4.19 presents the interview text that was sorted into seven codes and Table 4.20 presents the themes that were developed from the condensed meaning. These condensed meanings were classified into sub-categories and categories as shown in Table 4.20.

Table 4.19: Interview text

Meaning of measurement variables	Condensed meaning	Codes
User-department always submits their procurement plans on time; they do not have knowledge of processes; The IDP and the challenge is implementation. It is the problem that compromise desired quality; Areas of improvements are done. Specifications are kept in the tender document (functionality criteria); We don't do market analysis before sending out bids we just advertise.	Poor demand management planning Lack of proper planning No bid committee	1
No favouritism for suppliers since there is supply rotation on the system; Late bids are not considered. Send straight lack to the supplier without opening them; there is a system in place which picks the supplier for project which updates the profile; No specific performance for monitoring suppliers; Bid committee members understand their role and responsibilities.	No market or industry analysis and research Striving for high level of monitoring system Lack of competent bid committee	2

Meaning of measurement variables	Condensed meaning	Codes
Stock levels are replenished quarterly; orders are placed on it when required; Bid committee member sign conflict of interest forms before meetings; there is a gap end-user must also be available for identifying delivery; Only SCM identifies stock during deliveries.	Undefined delivery time Conflict of interest Lack of participation or consultation in meetings	3
Asset disposal policy is available for disposing and monitoring of stock; asset/disposal policy has gaps on some areas. The municipality doesn't cater for explosive disposal; theft. Assets department has stock but physically they are not within the warehouse; Challenge is assets. Is not within SCM it is on its own as per regulation (SCM). They should be one; there is gap between the assets register (inventory); Immovable assets are properly controlled and monitored.	No proper assets disposal policy Rate of risk, theft No monitoring system	4
Contracts are vetted before tender process and it is implemented recently; skill and staff development lack and needs to be taken into account; Risk department is in its own as part of SCM. There is a gap between two. Challenge is a space capacity since they are dealing with confidential information which might lose information; WIP (work in process) still in process and can be implemented by January 2016; No trainings are offered to staff.	Lack of skills No proper training of staff	5
SCM policies are effective and help us to monitor performance; No available contracts to review the SCM performance; SCM performance is just implemented for such division WIP (work in process); No proper and staff adequate. No accountability cannot monitor staff performance and monitoring serious challenges and monitoring; Quarterly reviewing SCM performance.	No accountability No performance monitoring	6
Policies help SCM with monitoring systems and loop holes; no corruption charges have been laid to date. There is a lack of confidentiality; capacity of staff. Training for SCM officials is needed to ensure effective SCM processes; SCM officials need training.	No confidentiality Need of SCM training, workshop	7

Table 4.20: Sub-categories and categories of themes

Codes	Sub-categories	Categories	Theme
1	Strategic planning; Specification	Demand management	Ineffective planning and low level of specification
2	Monitoring system Bid committee	Acquisition management	Training needed for better implementation of SCM
3	Delivery lead time Skills	Logistic management	No defined delivery time and appropriate skilled personnel
4	Training and seminars Monitoring performance Accountability	Disposal management Risk management Supply chain performance Policy	Requirement of Policy to monitor performance

4.7 SUMMARY

In this chapter presented a detailed discussion of the analysis of research data collected from the questionnaires. The responses on the four West Rand District Municipalities named as: Municipality A, B, C, and D were presented in this chapter. Supply chain management practices in the West Rand District Municipalities analyses followed the descriptive statistical analyses, which discussed the demographic profile of the participants, SCM practices, the Fisher Exact Test which was used to test the significant differences between the municipalities with regards to SCM practices and the content analysis. The descriptive analyses discussion was presented in Sections 4.2 and 4.3, the Fisher Exact Tests were presented in Section 4.4, and the content analysis was presented in Section 4.5. The findings of the research, conclusions, limitations and recommendations are discussed in Chapter 5.

CHAPTER 5: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The purpose of this chapter is to present a discussion of the findings, conclusions and recommendations regarding the SCM practices in the West Rand District municipalities. The chapter begins by revisiting the research questions and objectives that were provided in Chapter 1. Subsequently, the discussion of the findings is presented and thereafter, the summary and the conclusion that was drawn from the findings. This is followed by stating the research contribution and making recommendations on how the West Rand District municipalities could improve the implementation of SCM for proper accountability, good governance and better service delivery. The chapter concludes by submitting the limitations of the study and making suggestions for future research areas.

5.2 REVISITING THE RESEARCH QUESTIONS AND OBJECTIVES

In Chapter 1 the research questions and objectives were presented as follows:

The main research question was: *Do municipalities in the West Rand District implement supply chain management practices as required by the National Treasury, South Africa?*

The following secondary research questions were stated as:

- How is demand management conducted at the West Rand District?
- How is acquisition management conducted at the West Rand District?
- How are logistics, disposal, risks and performance management conducted at the West Rand District?
- What are the differences in SCM implementation among municipalities in the West Rand District?
- What are the challenges faced by municipalities in implementing SCM in the West Rand District?

The main research objective of the study was: to explore how municipalities in the West Rand District implement SCM practices with reference to the National Treasury guidelines.

The following secondary objectives were stated:

- To determine how demand management is implemented at the West Rand District.
- To determine how acquisition management is implemented at the West Rand District.
- To determine how logistics, disposal, risks and performance management is implemented at the West Rand District.
- To determine differences in SCM implementation among municipalities in the West Rand District.
- To determine the challenges faced by municipalities in implementing SCM in the West Rand District.
- To suggest measures that could enhance SCM implementation at the West Rand District.

5.3 DISCUSSION OF THE FINDINGS

This section discusses the research findings described in the previous chapter. The discussion is based on the research questions, however, prior to answering the primary research question; the secondary questions will be addressed first.

5.3.1 Secondary Research question 1:

How is demand management implemented at the West Rand District?

The objective of the research question was to determine how demand management is implemented at the West Rand District. Part of this research question was achieved in Phase 1 of the literature review. In order to answer this question, respondents were asked about their perceptions regarding demand management statements which were measured using a 5-point Likert scale. This research question was addressed by investigating the participants' perceptions about the implementation of demand management practices. The literature revealed that

demand management is the first phase of the SCM process and is a decision-making process which focuses on providing the right services in the right place at the right time (Ambe, Bizana and Naudé, 2015:64). The study identified the following key demand management activities: proper needs assessment; specifications are precisely determined, requirements are linked to the budget, analysis of the supply market, developing appropriate procurement plans, the frequency of the requirement is specified, the economic order quantity is calculated, the lead and delivery times are identified, as well as the industry.

These practices form the basis of successful SCM implementation within a municipal context.

The results presented in Section 4.3.1, Chapter 4 revealed that on average, most respondents agreed to a large and very large extent with the correct use of demand management, effective use of the bid register, procurement plans, procurement based in IDP and specification of the bid document, and analysis of the market before sending out the bids (refer to Chapter 4, Section 4.3.1, statements B4-5, B4-4, B4-6, B4-2, B4-1, B4-3 and B4-7). However, some respondents agreed (moderate extent) that suppliers adhere to delivery datelines and submission of procurement plans in time. A few respondents agreed to a slight extent that the procurement plans, specifications, use of the bid register, and adherence to delivery dates are not implemented fully in the West Rand District. Based on the findings, the municipalities complied with effectiveness of the bid register, purchases are budgeted for, and procuring is based on the IDP, and specifications are linked to bid documents. However, the least implemented practices were conducting a proper market analysis, conducting a spend analysis of goods/ services before procurement, effective use of the bid register, suppliers not complying with delivery dates, as well as procurement plans not being ready on time.

5.3.2 Secondary Research question 2:

How is acquisition management conducted at the West Rand District?

This research question seeks to explore how acquisition management practices are conducted in the West Rand District. This research question was addressed by investigating the participants' perceptions about how they implement acquisition

management practices within their municipalities. Part of this research question was achieved in Phase 1 of the literature review, as well as in Phase 2. Based on the literature study, acquisition management is the second phase of the SCM process. It involves the acquisition of goods and services by government or public organisations (Ambe, Bizana and Naudé, 2015:645). Key considerations in the acquisition management process that are discussed in the literature study are: as a strategy used to determine how to approach the market; the use of a preferential procurement policy to achieve socio-economic objectives; determining applicable depreciation rates; to establish the total cost of ownership of a particular type of asset, to ensure that bid documentation is complete, including evaluation criteria, and to ensure that proper contract documentation is signed (Isamay, 2008:70).

From the empirical study, the results revealed that acquisition management practices were implemented effectively to a great extent. As can be seen in Chapter 4, Section 4.3.2, the responses indicate that effective strategies were used, supplier's databases were updated, and signed vendor forms and use of competitive bidding processes were conducted. The respondents further indicated that SCM powers and duties were sometimes verbally delegated and sometimes not. The respondents from most of the West Rand District municipalities indicated the absence of bid committees and a lack of appropriate competent and skilled personnel, and a lack of adequate control mechanisms to prevent the splitting of orders.

The results revealed that the most effective acquisition management practices were an effective sourcing strategy, bid documents should always indicate 80/20 and 90/10 on their adverts and to update the supplier database. Acquisition management practices that were below the norm (50%) were: duties and powers were verbally communicated; late bids were considered or accepted.

5.3.3 Secondary Research Question 3:

How are logistics, disposal, risks and performance management conducted at the West Rand District?

This research question seeks to determine how the West Rand District conducts logistics, disposal, risks and performance management practices. From the literature study, logistics, disposal, risk and performance management are elements 3, 4, 5

and 6 of the SCM process. Logistics management, as the third element of the SCM process, entails the processes of planning, implementing and controlling the efficient, cost-effective flows and storage of raw materials, in-process inventory, finished goods, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements (Basu, 2011:8). Disposal management is the fourth element of the SCM; it is the final process when an institution needs to do away with unserviceable, redundant or obsolete movable assets according to the National Treasury's SCM guide for accounting authorities (Rampedi 2010:13). Risk management (fifth element) is the process whereby decisions are made to accept a known or assessed risk and/or the implementation of actions to reduce the consequences or probability of occurrence to avoid, reduce, transfer, share or even take the risk (RLM, 2010). SCM performance management (element 6) is a tool to manage the company's performance and to improve performance, to improve profits and reduce negative impacts (Catekaya, *et al.*, 2011:78).

The response to this question indicated that logistic management practices were somehow conducted at the West Rand District. From the findings, the results suggested that on average, a few of the respondents agreed to large extent that logistic management practices were conducted in the West Rand District. As can be seen in Chapter 4, Section 4.3.3, the responses reveal that distribution, effective management of the warehouse and an adequate control system to prevent theft of stock were present. Furthermore, the responses indicated that somehow the West Rand District had an appropriate procedures manual and performed official identification of stock during deliveries. In addition, the respondents indicated that there was a proper updated log book and the stock was not replenished monthly. In contrast, the finding indicated that orders were not placed on a monthly basis.

The results indicated that disposal management practices were somehow conducted at the West Rand District. From the findings, the results suggested that on average, a few of the respondents accepted that disposal management was conducted in the West Rand District. As reflected in Chapter 4, Section 4.3.4, the responses indicated that effective management of assets, availability of an asset disposal policy and the presence of proper control for immovable assets were present at the West Rand

district municipalities. A few responses indicated that the municipalities did follow the correct processes in disposing of explosives.

The results further suggested that on average, risk management practices were conducted at the West Rand district municipalities. As indicated in Chapter 4, Section 4.3.5, the responses shows that an effective system for identification, consideration and avoidance of potential risk, operational policies, respect for the tender and evaluation of SCM processes were present to some degree at all the municipalities. However, a few responses indicated that there was lack of staff training, and non-compliance within the tender processes in the West Rand district municipalities.

With regard to supply chain performance practices, the results suggested that the West Rand District conducted appropriate SCM performance processes. As indicated in Chapter 4, Section 4.3.6, the responses revealed that SCM objectives aligned with the government policies, effective policies to monitor compliance and an adequate control system to review the SCM performance were in place. However, the results showed that a few responses highlighted that there was no proper procedures manual for generating savings in the West Rand district municipalities.

Therefore, the municipalities face critical implementation processes regarding logistics, disposal, risk, and performance management. These include ineffective logistics management, inadequate controls to prevent theft of stock, lack of proper procedure in identifying stock during deliveries, lack of updates on transport log books, stock levels not being replenished monthly. With regards to disposal management, there is ineffective management of disposal practices such as a database of unserviceable items and the proper disposal of explosives. Regarding risk management, there is lack of proper risk management systems within the municipalities. There is also a lack of an SCM performance procedure manual for the generation of services and risk management practices.

5.3.4 Secondary Research Question 4:

What are the differences in SCM practices among municipalities in the West Rand District?

This research question seeks to determine differences in SCM practices between the different municipalities in the West Rand District. The Constitution of the Republic of South Africa provides for three categories of municipalities. These are category A (metropolitan), category B (District) and category C (Local). There are **278 municipalities** in South Africa, comprising 8 metropolitan, **44** district and **226** local municipalities (Alexander, 2015). The West Rand District is one of 44 district municipalities in the country and comprises of 4 local municipalities. Therefore, there are bound to be differences in the way SCM is practiced, based on the skills profile of the municipal officials; their competencies as well as capabilities within the respective municipalities.

In order to answer this research question, a hypothesis was developed. The Fisher's Exact Test was used to test the significant differences in SCM practices among the municipalities. Fisher's Exact Test is more accurate than other tests when the sample is small (Pallant, 2010). In this study Fisher's Exact Test was chosen due to the small sample sizes of respondents per municipality. Fisher's Exact Test was used to test the hypothesis regarding the statistical differences between the four municipalities with regards to the SCM practices. One hypothesis was tested as indicated below.

The following hypothesis was formulated:

Null Hypothesis

H0: there is no significant difference between the different municipalities regarding SCM practices.

Alternative Hypothesis

H1: there is significant difference between the municipalities regarding SCM practices.

The findings revealed that there are no significant differences between the municipalities. Significant differences were only observed in one municipality which indicated differences in how their supply chain practices were conducted. Significant differences related to SCM practices were visible in Municipality C.

- **Municipality C and acquisition management practices.** The findings indicate that effective sourcing strategies, verbal quotes, supplier's database and control

mechanism demonstrated a significant difference when compared to the other municipalities. Considering the frequency percentages, it was found that respondents from Municipality C have higher response scores on the B5-1, B5-3, B5-4, B5-6 and B5-8 statements.

- **Municipality C and logistics management practices.** The findings indicated that effective warehouse management, distribution from the warehouse and the appropriate control systems to prevent theft statements demonstrated a significant difference from the other municipalities. Considering the proportion of the percentage, it was found that respondents from Municipality C have higher response scores on B6-1, B6-2 and B6-7 statements.
- **Municipality C and disposal management practices.** The findings conclude that the assets register; effective database and disposal policy statements demonstrated a significant difference when compared to the other municipalities. Considering the proportion in percentage, it was found that respondents from municipality C have higher response scores on B7-1, B7-3 and B7-4 statements.
- **Municipality C and risk management practices.** The findings state that contracts before tender process and availability of skill development statements demonstrated a significant difference when compared to the other municipalities. Considering the proportion of the percentage, it was found that respondents from Municipality C have higher response scores on B8-4 and B8-5 statements.
- **Municipality C and supply chain performance practices.** The finding concludes that effective achievement of goals demonstrated a significant difference when compared to the other municipalities. Considering the proportion of the percentage, it was found that the respondents from Municipality C have a high responses score on the B9-1 statement.
- **Municipality C and supply chain challenges.** The findings conclude that lack of compliance, inadequate accountability control system, ineffective black empowerment, and conflict of interest, lack of skills, capacity and the need for SCM staff training statements demonstrated a significant difference when compared to the other municipalities. Considering the proportion of the percentage, it was found that the respondents from Municipality C have higher

response scores to B10-1, B10-3, B10-8, B10-12, B10-13, B10-14 and B10-15 statements.

5.3.5 Secondary Research Question 5:

What are the challenges faced by municipalities in implementing SCM in the West Rand District?

This research question seeks to determine the challenges faced by the West Rand District in implementing SCM. Municipalities in South Africa face enormous challenges with regard to SCM. The preliminary review revealed that SCM in the South African public sector was only given strategic status in government in 2014 with the appointment of the chief procurement officer (SCM review (2015)). This may have contributed to the challenges facing municipal officers in the effective implementation of SCM. Some of the critical challenges facing SCM implementation in municipalities are non-compliance with SCM processes (AG, 2011); non-compliance with SCM policies and regulations (Aku Kokor, 2014:20); unauthorised disclosure of confidential information (COT, 2011); lack of transparency within SCM (COT, 2014); poor planning and demand management (RLM, 2010:1); ineffectiveness of broad-based black economic empowerment (Smart Procurement, 2013:1); corruption and fraud by municipal officials (Xelheim and Forssbaeck, 2008:167), as well as conflict of interest (RLM, 2011:1).

In terms of the perception of the respondents on the supply chain challenges, the results revealed that the respondents have received SCM training (B10-15 with 73.4%). However, lack of adequate capacity was an issue for the respondent (B10-14 with 46.7%). The respondents also revealed that municipalities lack SCM skilled workers (B10-13 with 40%). The results indicate that on average, 18.7% of the respondents agree to a moderate extent with the statements relating to supply chain challenges. The results also indicate that there is poor planning within the municipalities (B10-7 with 26.7%).

As reflected in Chapter 4, Table 4.16, the results show that the unauthorised disclosure of confidential information was a challenge (B10-2 with 100%). Also, there were cases linking SCM officials to fraud and corruption (B10-10 with 93.4%). Furthermore, results revealed poor planning, ineffective black economic

empowerment initiatives, and SCM officials that are sometimes corrupt (B10-6, B10-8 and B10-9 respectively with 73.4%). In addition, lack of compliance with SCM policies, infrastructure, and conflict of interest emanated as a challenge (B10-1, B10-5 and B10-12 respectively with 66.7% and 66.6%). However, the respondents highlighted the lack of an interdepartmental database and effective monitoring system (B10-4 and B10-11 respectively with 60%). Lowest scores were indicated on the statements relating to inadequate accountability and the absence of a control mechanism (B10-3 with 46.7%).

Based on the results, there is a need for appropriate training of SCM staff, there is a lack of proper capacity, added to poor planning, and ineffective black economic empowerment. The results further indicate that there was a lack of compliance with SCM policies, conflict of interest, lack of an effective monitoring system, lack of accountability and inadequate control systems in the West Rand District municipalities.

5.3.6 Main research question:

Do municipalities in the West Rand District implement SCM practices as required by the National Treasury, South Africa?

From the secondary research questions discussed in the previous section, it can be concluded that:

The results presented in Section 4.3, Chapter 4 revealed that on average, most respondents agreed to a large and very large extent with the correct use of demand management practices. However, the municipalities had issues conducting a proper market analysis, conducting a spend analysis of goods/services before procurement, the effective use of the bid register, suppliers not complying with delivery dates, as well as procurement plans not being on time. Regarding acquisition management, the results revealed that acquisition management practices were to a great extent implemented effectively. The respondents across the municipalities indicated that there was an absence of appropriate bid committees and a lack of appropriate, competent, skilled personnel, and a lack of adequate control mechanisms to prevent the splitting of orders in most of the West Rand District.

With regards to logistics, disposal, risk and supply chain performance management, the results suggested that on average, a few of the respondents agreed to a large extent that logistic management practices were conducted in the West Rand District, while on average, a few of the respondents accepted that disposal management and risk management practices were conducted in the West Rand District. The results also revealed that SCM objectives aligned with the government policies, and effective policies to monitor compliance were observed and an adequate control system to review the SCM performance was in place. However, the results showed that a few responses highlighted that there was no proper procedure manual for generating savings in the West Rand District.

What is the difference in SCM practices between the different municipalities in the West Rand District?

The findings further indicate no significant difference within the municipalities. However, differences were obtained in the municipality C regarding its SCM practices.

The findings further assert that there are challenges facing the municipal officers in implementing their supply chain practices. There is a need for appropriate training of SCM staff, and there is a lack of proper capacity, poor planning, and ineffective black economic empowerment. The results further indicated that there was a lack of compliance with SCM policies, conflict of interest, lack of an effective monitoring system, lack of accountability and inadequate control systems in the West Rand District municipalities.

5.4 SUMMARY AND CONCLUSION

This section presents the summary of the conclusions reached regarding the research objectives.

5.4.1 Summary of the study

Chapter 1 provided the background to the study: factors stimulating the research, problem statement; research questions, objectives, research methodology and design, importance of the study, scope of the study, limitations, ethical clearance and lastly, outline of the study were presented.

Chapter 2 presented the literature review of SCM practices in the South African public sector. The chapter commenced with the conceptualisation of the SCM practices, which was followed by a discussion of SCM practices in the South African public sector, the policies and legislative requirements of SCM, a brief overview of the elements of SCM in the South African public sector, and it concluded with a discussion of SCM challenges and the chapter summary.

Chapter 3 outlined the research philosophies, problem statements and research objectives, research design and approach, discussed qualitative and quantitative research, research strategy, population and sampling, population of the study, data collection and methods, sources of research data, quality of the research, ethical considerations, and concluded with a summary of the chapter.

Chapter 4 presented the demographic profiles of the respondents, and investigated current supply chain practices, different municipalities with regards to their SCM practices, content analysis and concluded with a summary of the chapter.

Chapter 5 offered the conclusion and recommendations: these were presented by revisiting the research objective, research questions, and lastly, a conclusion and recommendations were presented.

5.4.2 Conclusions about the research objectives

Prior to answering the primary research objective, the secondary objectives need to be addressed.

5.4.2.1 Secondary research objectives

The first research objective was ***to determine how demand management is implemented at the West Rand District***. The results revealed that West Rand District municipalities fully implemented the demand management practices. The participants agreed to a large or very large extent with statements regarding the implementation of demand management in the WDRM (see Section 4.3.1). The results revealed that the municipalities implement SCM to a great extent. However, its implementation is challenged by improper market analysis, no effective use of the bid register, as well as procurement plans not being on time.

The second research objective was to ***determine how acquisition management is implemented at the West Rand District.*** The results indicated that acquisition management practices were implemented effectively to a great extent. As can be seen in Chapter 4, Section 4.3.2, the responses indicate that effective strategies were used, suppliers' databases were updated, and signed vendor forms and the use of competitive bidding were present. The respondents further indicated that SCM powers and duties were sometimes verbally delegated and sometimes not. The respondents, across the municipalities, indicated that there were no bid committees and a lack of appropriate, competent skilled personnel most of the West Rand District municipalities.

The third research objective was to ***determine how logistics, disposal, risks and performance management is implemented at the West Rand District.*** The results revealed that logistic management practices were somehow conducted at the West Rand District. As can be seen in Chapter 4, Section 4.3.3, the responses revealed that distribution, effective management of warehouses and an adequate control system to prevent theft of stock were present.

The results indicated that disposal management practices were somehow conducted at the West Rand District. In Chapter 4, Section 4.3.4, the responses indicated that the effective management of assets, the availability of an asset disposal policy and the presence of proper control for immovable assets were in place at the West Rand District. A few responses indicated that the municipalities did follow the correct processes in disposing of explosives.

Regarding risk management, the results suggested that on average, risk management practices were conducted at the West Rand District. As indicated in Chapter 4, Section 4.3.5, the responses show that an effective system for identification, consideration and avoidance of potential risk, operational policies, respect for tenders and an evaluation of SCM processes were conducted along all the municipalities. However, there is also a lack of appropriate staff training, and non-compliance on the tender process in the West Rand District.

With regard to supply chain performance practices, the results suggested that the West Rand District conducted appropriate SCM performance processes. As indicated in Chapter 4, Section 4.3.6, the responses revealed that SCM objectives

aligned with the government policies, effective policies to monitor compliance and an adequate control system to review the SCM performance were in place. However, the results showed that a few responses highlighted that, there no proper procedures manual for generating savings in the West Rand District.

The fourth research objective of the study was ***to determine the differences in SCM implementation among municipalities in the West Rand District.*** The results showed that there are differences in the SCM practices of acquisition. The findings revealed that sometimes SCM departments consider late bids, and there is a lack of proper SCM control systems, which is a transgression of SCM regulations. Furthermore it appears that Municipalities B, C and D, as in Section 4.3.2, registered to a significant large extent that municipalities do not have controls to prevent the spitting of orders

The fifth research objective was to ***determine the challenges faced by municipalities in implementing SCM in the West Rand District.*** The results indicated that there were numerous challenges, such as lack of training for SCM staff, lack of proper capacity, poor planning, and ineffective black economic empowerment in the West Rand District. Based on the results, there is a need for appropriate training of SCM staff, there is a lack of proper capacity, poor planning, and ineffective black economic empowerment.

The sixth research objective of the study was to ***suggest measures that could enhance SCM implementation in the West Rand District.*** The suggestions on how SCM practices could be improved will be discussed in Section 5.5 (Recommendations).

5.4.2.2 The primary research objective

After the discussion of the secondary research objectives in the above section, the following can be concluded against the **primary research objective** of the study which was to determine the extent to which the West Rand District Municipalities implement SCM practices: In overall the conclusion can be made that the participants agreed that West Rand District municipalities have adopted and implemented the SCM practices. SCM objectives are not always appropriately

aligned with the government policies, and the municipalities face serious SCM issues regarding proper accountability and good governance. The findings of this study conform to previous studies on SCM within a municipal context: For example, a case study of the provincial department of economic, development, environment and tourism in Limpopo province, which examined the impact of the implementation of the supply chain policy in the department of Local Government and housing in Limpopo province and the practice of SCM in Capricorn district with particular reference to Aganang municipality. Also, it supports evidence in the 2014 SCM first review which highlighted the many challenges faced by the implementation of SCM and the fact that the strategic objectives were also pronounced in parliament in 2014. It should be reiterated that the lack of proper SCM processes and procedures are the root cause of problems in service delivery in South Africa.

5.5 RECOMMENDATIONS

Based on the findings of the study, it is evident the municipalities face SCM implementation challenges. Figure 5.1 presents a recommended framework that the municipalities could consider for implementing efficient SCM systems:

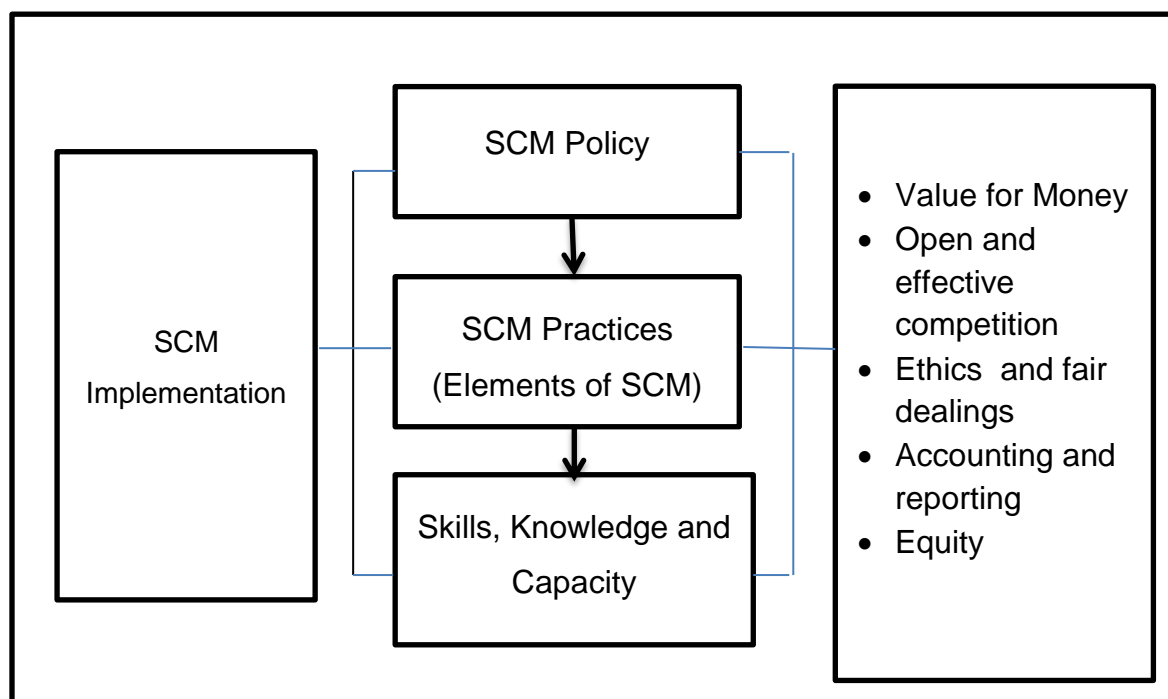


Figure 5.1: Recommended framework for implementing efficient SCM systems

Based on the findings of this study, the three key areas of strategic importance are: an effective SCM policy for the municipalities, understanding of and compliance to the elements of SCM, as well as the skills, knowledge and competencies of the municipal officials. These key areas are briefly discussed in the sections below.

5.5.1 The supply chain management policy

It is important for the municipalities to have an effective SCM policy. The SCM policy should be regularly updated at least once a year to incorporate the latest regulations and circulars issued by the National Treasury. Lack of appropriate and effective SCM may be the reason for poor audit outcomes in Municipalities. Exemptions applicable to the municipal SCM environments should be clearly stipulated in the policy. When developing and revising SCM policy, the municipalities should incorporate the following;

- Integrate procurement international best practices;
- Criteria for the appointment of suppliers for goods and services, as well as consultants, should be systematic;
- Create common understanding and interpretation of the preferential procurement policy;
- Ensure best value for money while improving service to achieve delivery;
- Ensure proper contract and supplier relationship management guided by policies and regulations.

5.5.2 Elements of SCM

As alluded in the study, the elements of the SCM business model are demand management, acquisition management, logistics management, disposal management, risk and supply chain performance management.

- **Demand Management:** Municipalities should ensure that the total needs assessment is undertaken before the process can begin. Resources required must be analysed and assessed and be linked to the IPD.
- **Acquisition Management:** Municipalities should evaluate bids according specification criteria, consult register for defaulters, determine the range of

procurement systems, establish the total cost of ownership for all goods and services, as well as special criteria for the appointment of consultants.

- **Logistics Management:** Municipalities should strategically manage the acquisition, movement and storage of materials, cost fulfilment of orders, ensure effective flow of goods, services and related information from the point of origin to the point of consumption.
- **Disposal Management:** The municipalities should effectively and efficiently manage assets that are no longer needed and also give consideration to obsolescence planning. They should create a database of redundant materials; inspect materials for re-use as well as determine the disposal strategy and methods of execution.
- **Risk Management:** The municipalities should manage the unintended or unexpected outcomes of their decisions and make provision for identifying, considering and avoiding risk, as well as well as making provision for adequate cover for residual risks.
- **Supply Chain Performance:** It is imperative for the municipalities to monitor their progress and to make a retrospective analysis of their actions to determine whether the processes have been followed and if the desired objectives have been achieved.

5.5.3 Skills, knowledge and competencies

It is evident from the findings that SCM practitioners in the West Rand District require specific knowledge to manage the procurement process effectively. Specialised training programmes are therefore required to equip actors with the skills to achieve SCM objectives. Key issues, such as the employment of qualified SCM practitioners, training and implementation of learnership programmes, the development of an effective monitoring and evaluation tool, and the creation of incentive programmes to motivate good performance should be employed. In addition, institutions of higher learning and other service providers should equip learners and practitioners with appropriate skills and knowledge through the development of a syllabus that ensures sustainable SCM in the municipalities.

With a properly implemented SCM policy, effective execution of the elements of SCM, such as demand, acquisition, logistics, disposal, risk and performance management, as well as appropriate skills and competencies, municipalities can benefit from the core values of SCM in the public sector. These core values are value for money, open and effective competition, ethics and fair dealing, as well as equity.

5.6 LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FUTURE RESEARCH

This section of the chapter presents the limitations of the study and suggestions for future research.

5.6.1 Limitations of the study

Although this study may contribute to the understanding of SCM practices in South African municipalities and has highlighted the gaps in their daily activities, there are limitations that are worth declaring:

- Since the approach of this research study is mixed method in nature, it was not possible to access information and participants were reluctant to divulge information due to the sensitivity of SCM confidential information.
- It was anticipated that challenges would be presented if respondents declined to answer specific questions on the questionnaire since they wanted to protect the image of the organisation.
- Ethics are not standardised and might differ from individual to individual.
- Financial implications when conducting the study.

Since the West Rand district municipalities fall under the same district umbrella it was anticipated that most of the responses might be similar, however the researcher was aware of such an expectation and avoided generalisations.

5.6.2 Suggestions for future research

The aim of this study was to get an in-depth understanding about SCM practices in four West Rand District municipalities. In order to gain in-depth understanding about these SCM practices a mixed method approach was adopted. However, it is

recommended that future research be repeated in a different context, for example, with all three categories of municipalities found in SA, as findings might differ and, this study could also employ a different research strategy. It is also recommended that the same study be repeated with a larger group and by doing a case study first independently for the municipalities. A comparison study is also suggested because results will reveal which municipality complies better as required by the National Treasury.

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APPENDIX A: QUESTIONNAIRE

QUESTIONNAIRE

AN EXPLORATION OF SUPPLY CHAIN MANAGEMENT PRACTICES IN THE WEST RAND DISTRICT MUNICIPALITIES

LETTER OF INFORMED CONSENT

**Department of Business Management
College of Economic and Management Sciences
University of South Africa
P.O Box 392 UNISA
Email: tmaleka@prasa.com
0798043092
23/11/2015**

Dear Sir/Madam,

REQUEST FOR CONSENT TO CONDUCT RESEARCH

I am a Master Student, in the department of Business Management, University of South Africa (UNISA) pursuing research to study supply chain management practices in the West Rand District Municipality.

The purpose of the research is to determine the extent to which the West Rand District Municipalities implement SCM practices.

This letter is a request to gather data required from your municipality. Your signature to this letter will signify your consent to:-

- (i) Conduct an interview with you; and
- (ii) Completion of the questionnaire.

You have been selected for this process because you demonstrate the profile required for this research in that you are a supply chain actor within your municipality. If you give your consent, I will conduct an interview with you at a time and place that is convenient to you and the interview will be recorded on a tape recorder as well as on hand. The interview will last approximately 30 minutes. The collected data will be treated with the strictest confidence and I undertake to guarantee your anonymity in the research. The collected data will be assessed only by the researcher will be kept for a maximum of three years. You may request verification of the interview, by calling the telephone numbers above. Please note that participation in this interview is voluntary. However, your information will contribute to the greater understanding of supply chain management practices in South African municipalities. Participants can withdraw from the study at any time even after they participated". (See attached consent form)

Your cooperation is greatly appreciated

Yours faithfully

T Maleka (Researcher)

INTERVIEWEE

(Mark x and complete below)

CONSENT TO CONDUCT RESEARCH	GRANTED	NOT GRANTED

I, _____ hereby agree to the above.

Signed on this _____ day of _____ (month) _____ (year)

Signature: _____

OUTLINE OF THE QUESTIONNAIRE

This questionnaire is made up of two sections:

Section (A) - Organisational characteristics

Section (B) – Current supply chain management practices

Please tick (x) your answer and please provide comment on how your municipality is implements supply chain management practices.

Note:

- (i) A five point likert scale is used. The end points of the questions are (1) “strongly disagree” to (5) “strongly agree”, and (1) “no extent to (5) to a very great extent”.
- (ii) Open ended questions are included that will allow you to explain or justify the responses of the closed ended questions.
- (iii) I will gladly provide clarifications and explanations to ease understanding of the questions where and when necessary.

SECTION A: ORGANISATIONAL CHARACTERISTICS

Questions 1 to 3 require you to tick (x) the relevant square(s) and comment where applicable. It relates to questions about the organisational characteristics of your municipality.

1 Please indicate the name of your Municipality.

RANFONTEIN		MERAFONG		MOGALE CITY		WESTRAND-DISTRICT	
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2 What is your job title?

Chief Financial Officer		Supply chain manager		Supply Chain Practitioner	
Others Please specify: -----					

3 What is the length of your service at the municipality?

Less than 1 years		2 to 5 years		5 to 10 years		Above 10 years	
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SECTION B: CURRENT SUPPLY CHAIN MANAGEMENT PRACTICES

Questions B to B10 relate to current supply chain management practices in your municipality. This section of the questionnaire is sub-divided into the various elements of supply chain management. (Demand, acquisition, logistics, disposal, risk and performance management).

B1 DEMAND MANAGEMENT

- 4 Please indicate the extent to which your municipality implements the following statement relating to demand management:-

Where 1 = no extent; 2 = slight extent, 3 = moderate extent, 4 = large extent and 5 = very large extent.					
Our specifications for bid documents are always correct	1	2	3	4	5
All our purchases were budgeted for	1	2	3	4	5
We always analyse the market before sending out bids	1	2	3	4	5
We have procurement plans in place by different departments	1	2	3	4	5
We effectively utilised our bid register	1	2	3	4	5
We procure based on IDP	1	2	3	4	5
We conduct spent analysis of previous years	1	2	3	4	5
Our suppliers always adhere to delivery dates	1	2	3	4	5
User departments always submit PPs in time	1	2	3	4	5
	1	2	3	4	5

Provide justification for the responses in relation to the statements on demand management above

[illegible]

B1 ACQUISITION MANAGEMENT

5 Please indicate the extent to which your municipality implements the following statement relating to acquisition management:-

Where 1 = no extent; 2 = slight extent, 3 = moderate extent, 4 = large extent and 5 = very large extent.					
We have an effective sourcing strategies	1	2	3	4	5
Supplier database updated annually	1	2	3	4	5
All verbal quotes followed up with written quotes	1	2	3	4	5
All suppliers in database have sign vendor forms	1	2	3	4	5
We have appropriate control of SCM data	1	2	3	4	5
Adequate control in place to prevent splitting of orders	1	2	3	4	5
There is favouritism for suppliers selection for written quotations	1	2	3	4	5
We use competitive bidding for amount exceeding R200 000	1	2	3	4	5
Bid document always indicate 80/20 or 90/10 preference point	1	2	3	4	5
SCM powers and duties are verbally delegated	1	2	3	4	5
We sometimes consider late bids	1	2	3	4	5
Bid committee members do not understand their functions	1	2	3	4	5

Provide justification for the responses in relation to the statements on acquisition management above

[illegible]

B1 LOGISTICS MANAGEMENT

- 6 Please indicate the extent to which your municipality implements the following statement relating to Logistics management:-

Where 1 = no extent; 2 = slight extent, 3 = moderate extent, 4 = large extent and 5 = very large extent.					
We have an effective warehouse management	1	2	3	4	5
All stock items are distributed from warehouse	1	2	3	4	5
Transport management have updated log books	1	2	3	4	5
Stock levels are replenished monthly	1	2	3	4	5
Orders are placed once a month	1	2	3	4	5
We have appropriate procedure manuals	1	2	3	4	5
Adequate control in place to prevent theft of stock	1	2	3	4	5
End-user and SCM officials identify stock during deliveries	1	2	3	4	5

Provide justification for the responses in relation to the statements on logistics management above

B1 DISPOSAL MANAGEMENT

7 Please indicate the extent to which your municipality implements the following statement relating to Disposal management:-

Where 1 = no extent; 2 = slight extent, 3 = moderate extent, 4 = large extent and 5 = very large extent.					
Effective assets register available for managing of assets	1	2	3	4	5
Proper controls available for immovable assets	1	2	3	4	5
Effective database available for unserviceable items	1	2	3	4	5
Availability of asset disposal policy	1	2	3	4	5
Adequate processes are implemented in disposing explosives	1	2	3	4	5

Provide justification for the responses in relation to the statements on Disposal management above

Case No.	Case Name	Case Type	Case Status	Case Date	Case Location	Case Description	Case Details	Case Notes	Case Comments	Case Actions
1	John Doe	Medical	Open	2023-01-01	New York	John Doe, 45, male, reported chest pain and shortness of breath.	John Doe, 45, male, reported chest pain and shortness of breath.	John Doe, 45, male, reported chest pain and shortness of breath.	John Doe, 45, male, reported chest pain and shortness of breath.	John Doe, 45, male, reported chest pain and shortness of breath.
2	Jane Smith	Medical	Open	2023-01-02	California	Jane Smith, 32, female, reported severe headache and dizziness.	Jane Smith, 32, female, reported severe headache and dizziness.	Jane Smith, 32, female, reported severe headache and dizziness.	Jane Smith, 32, female, reported severe headache and dizziness.	Jane Smith, 32, female, reported severe headache and dizziness.
3	Michael Brown	Medical	Open	2023-01-03	Texas	Michael Brown, 58, male, reported abdominal pain and nausea.	Michael Brown, 58, male, reported abdominal pain and nausea.	Michael Brown, 58, male, reported abdominal pain and nausea.	Michael Brown, 58, male, reported abdominal pain and nausea.	Michael Brown, 58, male, reported abdominal pain and nausea.
4	Sarah Johnson	Medical	Open	2023-01-04	Florida	Sarah Johnson, 28, female, reported joint pain and swelling.	Sarah Johnson, 28, female, reported joint pain and swelling.	Sarah Johnson, 28, female, reported joint pain and swelling.	Sarah Johnson, 28, female, reported joint pain and swelling.	Sarah Johnson, 28, female, reported joint pain and swelling.
5	David Wilson	Medical	Open	2023-01-05	Illinois	David Wilson, 65, male, reported fatigue and weakness.	David Wilson, 65, male, reported fatigue and weakness.	David Wilson, 65, male, reported fatigue and weakness.	David Wilson, 65, male, reported fatigue and weakness.	David Wilson, 65, male, reported fatigue and weakness.
6	Emily Davis	Medical	Open	2023-01-06	Ohio	Emily Davis, 38, female, reported skin rash and itching.	Emily Davis, 38, female, reported skin rash and itching.	Emily Davis, 38, female, reported skin rash and itching.	Emily Davis, 38, female, reported skin rash and itching.	Emily Davis, 38, female, reported skin rash and itching.
7	Robert Miller	Medical	Open	2023-01-07	Georgia	Robert Miller, 72, male, reported memory loss and confusion.	Robert Miller, 72, male, reported memory loss and confusion.	Robert Miller, 72, male, reported memory loss and confusion.	Robert Miller, 72, male, reported memory loss and confusion.	Robert Miller, 72, male, reported memory loss and confusion.
8	Lisa Anderson	Medical	Open	2023-01-08	Arizona	Lisa Anderson, 41, female, reported back pain and stiffness.	Lisa Anderson, 41, female, reported back pain and stiffness.	Lisa Anderson, 41, female, reported back pain and stiffness.	Lisa Anderson, 41, female, reported back pain and stiffness.	Lisa Anderson, 41, female, reported back pain and stiffness.
9	Christopher Lee	Medical	Open	2023-01-09	Colorado	Christopher Lee, 53, male, reported vision changes and blurriness.	Christopher Lee, 53, male, reported vision changes and blurriness.	Christopher Lee, 53, male, reported vision changes and blurriness.	Christopher Lee, 53, male, reported vision changes and blurriness.	Christopher Lee, 53, male, reported vision changes and blurriness.
10	Amanda White	Medical	Open	2023-01-10	Washington	Amanda White, 35, female, reported heart palpitations and anxiety.	Amanda White, 35, female, reported heart palpitations and anxiety.	Amanda White, 35, female, reported heart palpitations and anxiety.	Amanda White, 35, female, reported heart palpitations and anxiety.	Amanda White, 35, female, reported heart palpitations and anxiety.
11	Kevin Black	Medical	Open	2023-01-11	Oregon	Kevin Black, 60, male, reported urinary frequency and urgency.	Kevin Black, 60, male, reported urinary frequency and urgency.	Kevin Black, 60, male, reported urinary frequency and urgency.	Kevin Black, 60, male, reported urinary frequency and urgency.	Kevin Black, 60, male, reported urinary frequency and urgency.
12	Nicole Green	Medical	Open	2023-01-12	Idaho	Nicole Green, 29, female, reported hair loss and thinning.	Nicole Green, 29, female, reported hair loss and thinning.	Nicole Green, 29, female, reported hair loss and thinning.	Nicole Green, 29, female, reported hair loss and thinning.	Nicole Green, 29, female, reported hair loss and thinning.
13	Brandon Hall	Medical	Open	2023-01-13	Montana	Brandon Hall, 48, male, reported constipation and bloating.	Brandon Hall, 48, male, reported constipation and bloating.	Brandon Hall, 48, male, reported constipation and bloating.	Brandon Hall, 48, male, reported constipation and bloating.	Brandon Hall, 48, male, reported constipation and bloating.
14	Stephanie King	Medical	Open	2023-01-14	Wyoming	Stephanie King, 37, female, reported dry skin and itching.	Stephanie King, 37, female, reported dry skin and itching.	Stephanie King, 37, female, reported dry skin and itching.	Stephanie King, 37, female, reported dry skin and itching.	Stephanie King, 37, female, reported dry skin and itching.
15	Gregory Scott	Medical	Open	2023-01-15	Utah	Gregory Scott, 62, male, reported joint stiffness and pain.	Gregory Scott, 62, male, reported joint stiffness and pain.	Gregory Scott, 62, male, reported joint stiffness and pain.	Gregory Scott, 62, male, reported joint stiffness and pain.	Gregory Scott, 62, male, reported joint stiffness and pain.
16	Michelle Adams	Medical	Open	2023-01-16	Nebraska	Michelle Adams, 33, female, reported hair loss and thinning.	Michelle Adams, 33, female, reported hair loss and thinning.	Michelle Adams, 33, female, reported hair loss and thinning.	Michelle Adams, 33, female, reported hair loss and thinning.	Michelle Adams, 33, female, reported hair loss and thinning.
17	Timothy Baker	Medical	Open	2023-01-17	Missouri	Timothy Baker, 55, male, reported urinary frequency and urgency.	Timothy Baker, 55, male, reported urinary frequency and urgency.	Timothy Baker, 55, male, reported urinary frequency and urgency.	Timothy Baker, 55, male, reported urinary frequency and urgency.	Timothy Baker, 55, male, reported urinary frequency and urgency.
18	Angela Carter	Medical	Open	2023-01-18	Arkansas	Angela Carter, 42, female, reported skin rash and itching.	Angela Carter, 42, female, reported skin rash and itching.	Angela Carter, 42, female, reported skin rash and itching.	Angela Carter, 42, female, reported skin rash and itching.	Angela Carter, 42, female, reported skin rash and itching.
19	Jonathan Evans	Medical	Open	2023-01-19	Mississippi	Jonathan Evans, 68, male, reported memory loss and confusion.	Jonathan Evans, 68, male, reported memory loss and confusion.	Jonathan Evans, 68, male, reported memory loss and confusion.	Jonathan Evans, 68, male, reported memory loss and confusion.	Jonathan Evans, 68, male, reported memory loss and confusion.
20	Christina Harris	Medical	Open	2023-01-20	Alabama	Christina Harris, 36, female, reported heart palpitations and anxiety.	Christina Harris, 36, female, reported heart palpitations and anxiety.	Christina Harris, 36, female, reported heart palpitations and anxiety.	Christina Harris, 36, female, reported heart palpitations and anxiety.	Christina Harris, 36, female, reported heart palpitations and anxiety.
21	Benjamin Clark	Medical	Open	2023-01-21	South Carolina	Benjamin Clark, 57, male, reported urinary frequency and urgency.	Benjamin Clark, 57, male, reported urinary frequency and urgency.	Benjamin Clark, 57, male, reported urinary frequency and urgency.	Benjamin Clark, 57, male, reported urinary frequency and urgency.	Benjamin Clark, 57, male, reported urinary frequency and urgency.
22	Victoria Lewis	Medical	Open	2023-01-22	Louisiana	Victoria Lewis, 31, female, reported hair loss and thinning.	Victoria Lewis, 31, female, reported hair loss and thinning.	Victoria Lewis, 31, female, reported hair loss and thinning.	Victoria Lewis, 31, female, reported hair loss and thinning.	Victoria Lewis, 31, female, reported hair loss and thinning.
23	Christopher King	Medical	Open	2023-01-23	South Dakota	Christopher King, 63, male, reported joint stiffness and pain.	Christopher King, 63, male, reported joint stiffness and pain.	Christopher King, 63, male, reported joint stiffness and pain.	Christopher King, 63, male, reported joint stiffness and pain.	Christopher King, 63, male, reported joint stiffness and pain.
24	Elizabeth Hall	Medical	Open	2023-01-24	North Dakota	Elizabeth Hall, 39, female, reported skin rash and itching.	Elizabeth Hall, 39, female, reported skin rash and itching.	Elizabeth Hall, 39, female, reported skin rash and itching.	Elizabeth Hall, 39, female, reported skin rash and itching.	Elizabeth Hall, 39, female, reported skin rash and itching.
25	Matthew Miller	Medical	Open	2023-01-25	Minnesota	Matthew Miller, 59, male, reported urinary frequency and urgency.	Matthew Miller, 59, male, reported urinary frequency and urgency.	Matthew Miller, 59, male, reported urinary frequency and urgency.	Matthew Miller, 59, male, reported urinary frequency and urgency.	Matthew Miller, 59, male, reported urinary frequency and urgency.
26	Olivia Wilson	Medical	Open	2023-01-26	Wisconsin	Olivia Wilson, 34, female, reported hair loss and thinning.	Olivia Wilson, 34, female, reported hair loss and thinning.	Olivia Wilson, 34, female, reported hair loss and thinning.	Olivia Wilson, 34, female, reported hair loss and thinning.	Olivia Wilson, 34, female, reported hair loss and thinning.
27	Joshua Moore	Medical	Open	2023-01-27	Michigan	Joshua Moore, 61, male, reported joint stiffness and pain.				

B1 RISK MANAGEMENT

- 8 Please indicate the extent to which your municipality implements the following statement relating to Risk management:-

Where 1 = no extent; 2 = slight extent, 3 = moderate extent, 4 = large extent and 5 = very large extent.					
Effective risk management policy	1	2	3	4	5
Risk management evaluate SCM processes	1	2	3	4	5
Bid documents are legally sound	1	2	3	4	5
Contracts are vetted before tender process	1	2	3	4	5
Availability of staff development programmes	1	2	3	4	5

Provide justification for the responses in relation to the statements on Risk management above

B1 SUPPLY CHAIN PERFORMANCE

- 9 Please indicate the extent to which your municipality implements the following statement relating to Supply chain performance:-

Where 1 = no extent; 2 = slight extent, 3 = moderate extent, 4 = large extent and 5 = very large extent.					
Effectively review achievement of goals	1	2	3	4	5
Proper procedure manuals for generated savings	1	2	3	4	5
Effective policies to monitor compliance	1	2	3	4	5
SCM objectives are aligned with Government policies	1	2	3	4	5
Adequate controls to review SCM performance	1	2	3	4	5

Provide justification for the responses in relation to the statements on Supply chain performance above



B1 SUPPLY CHAIN CHALLENGES

- 10 Please indicate the extent to which your municipality implements the following statement relating to Supply chain challenges:-

Where 1 = no extent; 2 = slight extent, 3 = moderate extent, 4 = large extent and 5 = very large extent.					
We do not always comply with SCM policies and regulations	1	2	3	4	5
Unauthorized disclosure of confidential information	1	2	3	4	5
We face inadequate accountability and control mechanism	1	2	3	4	5
Lack of links on interdepartmental database	1	2	3	4	5
We lack of proper infrastructure	1	2	3	4	5
We lack transparency within our SCM system	1	2	3	4	5
We are challenged with poor planning	1	2	3	4	5
Broad- based black economic empowerment is ineffective	1	2	3	4	5
SCM officials are sometimes corrupt	1	2	3	4	5
We are sometimes challenged with cases of SCM fraud by officials	1	2	3	4	5
We lack an effective SCM monitoring system	1	2	3	4	5
Conflict of interest	1	2	3	4	5
Lack of SCM skilled personnel	1	2	3	4	5
Lack of adequate capacity	1	2	3	4	5
Proper training of our SCM staff is required	1	2	3	4	5

Provide justification for the responses in relation to the statements on Supply chain challenges above.

APPENDIX B: ETHICAL CLEARANCE CERTIFICATE

 UNISA university of south africa	
DEPARTMENT OF BUSINESS MANAGEMENT RESEARCH ETHICS REVIEW COMMITTEE	
26 January 2016	
Dear Mr Thabisho Maleka	Ref #: 2015_CEMS_BM_047 Mr Thabisho Maleka Student #: 39061547
Decision: Ethics Approval	
<p>Name: Mr Thabisho Maleka – Principal Researcher (tmaleka@prasa.com_0798043092) Proposal: An exploration of Supply Chain Management practices in West-Rand District Municipalities Supervisor: Prof Marcus Ambe (Staff #: 90156463) Qualification: Postgraduate degree</p> <p>Thank you for the application for research ethics clearance by the Department of Business Management Research Ethics Review Committee for the above mentioned research. Final approval is granted for the duration of the project from the date of issue.</p> <div style="border: 1px solid black; padding: 10px;"><p><i>For full approval: The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Department of Business Management on 26 January 2016.</i></p><p><i>The proposed research may now commence with the proviso that:</i></p><ol style="list-style-type: none"><i>1) The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.</i><i>2) Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Department of Business Management Ethics Review Committee. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.</i><i>3) The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.</i></div>	
Kind regards,	
 Prof Watson Lauzani Chairperson of the sub-unit RERC Department of Business Management wladzani@unisa.ac.za	 Prof Thomas Mogaile Executive Dean College of Economic and Management Sciences
 Open Public	
<p>University of South Africa Pretorius Street, Muckleneck Ridge, City of Tshwane PO Box 392 UNISA 0003 South Africa Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150 www.unisa.ac.za</p>	

APPENDIX C: PERMISSION TO CONDUCT RESEARCH



**WEST RAND
DISTRICT MUNICIPALITY**



OFFICE OF THE CHIEF FINANCIAL OFFICER

Attention Mr T Maleka

<p>LETTER OF PERMISSION TO CONDUCT A STUDY RESEARCH AT WEST RAND DISTRICT MUNICIPALITY</p>

The above matter refers.

This letter hereby permits you to conduct the study research at the West Rand District Municipality as requested.

Hoping the above is in order.

Regards,

A handwritten signature in black ink, appearing to read 'Romeo Mohaudi', written over a circular stamp.

**ROMEO MOHAUDI
CHIEF FINANCIAL OFFICER**

Date: 10/6/15

Private Bag X033, RANDFONTEIN 1760
Cnr 6th & Park Street, RANDFONTEIN
Tel: (011) 411-5000/412-2701 Fax: (011) 412-3663
Email: admin@wrdm.gov.za Website: www.wrdm.gov.za


APPENDIX D: DECLARATIONS BY TRANSCRIBER AND STATISTICIAN

Transcription Confidentiality Agreement

I, Sindisiwe Ngongoma, hereby declare that I understand and agree to the following conditions with regards to the transcription of the audio recordings.

1. I understand that the audio recordings are received for the purpose of transcribing records of interviews held with the participants in **AN EXPLORATION OF SUPPLY CHAIN MANAGEMENT PRACTICES IN THE WEST-RAND DISTRICT MUNICIPALITIES**.
2. I acknowledge that the research project is/are conducted by Thabiso Maleka of the Department of Department of Business Management, University of South Africa.
3. I understand that the identity of the participants and any individuals/ organisations/ institutions discussed as well as the content of the interviews are confidential and may not be revealed.
4. I undertake to treat all audio recordings as confidential content to which only I will have access. I will keep the audio recordings and any copied material securely.
5. I will return all copies back to the researcher on completion of the transcription.

Full Name of Transcriber: Sindi Ngongoma

Signature of Transcriber:  Date: 30/11/2015

Full Name of Primary Researcher: Thabiso Maleka

Signature of Primary Researcher:  Date: 30/11/2015



University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

Confidentiality Agreement Template: Statistician

This is to certify that I, Andries Masenge, the statistician of the research project
**AN EXPLORATION OF SUPPLY CHAIN MANAGEMENT PRACTICES IN THE WEST-RAND
DISTRICT MUNICIPALITIES**

agree to the responsibilities of the statistical analysis of the data obtained from participants
(and additional tasks the researcher(s) may require in my capacity as statistician).

I acknowledge that the research project is/are conducted by Thabisho Maleka
of the Department of Business Management, University of South Africa.

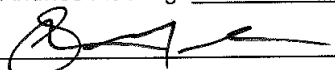
I understand that any information (written, verbal or any other form) obtained during the
performance of my duties must remain confidential and in line with the UNISA Policy on
Research Ethics.

This includes all information about participants, their employees/their employers/their
organisation, as well as any other information.


I understand that any unauthorised release or carelessness in the handling of this confidential
information is considered a breach of the duty to maintain confidentiality.

I further understand that any breach of the duty to maintain confidentiality could be grounds for
immediate dismissal and/or possible liability in any legal action arising from such breach.

Full Name of Statistician: Andries Masenge _____

Signature of Statistician:  Date: 30/11/2015

Full Name of Primary Researcher: Thabisho Maleka

Signature of Primary Researcher:  Date: 30/11/2015



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APPENDIX E: DECLARATION OF PROFESSIONAL EDIT



Dear Mr Maleka

This letter is to record that I have completed a language edit of your dissertation entitled, "AN EXPLORATION OF SUPPLY CHAIN MANAGEMENT PRACTICES IN THE WEST RAND DISTRICT MUNICIPALITIES".

The edit that I carried out included the following:

- Spelling
- Grammar
- Vocabulary
- Punctuation
- Pronoun matches
- Word usage
- Sentence structure
- Correct acronyms (matching your supplied list)
- Formatting
- Captions and labels for figures and tables
- Spot checking of ten in-text references
- Generation of Table of Contents, Lists of Figures and Tables

The edit that I carried out excluded the following:

- Content
- Correctness or truth of information (unless obvious)
- Correctness/spelling of specific technical terms and words (unless obvious)
- Correctness/spelling of unfamiliar names and proper nouns (unless obvious)
- Correctness of specific formulae or symbols, or illustrations.

Yours sincerely

Retha Burger

3 March 2016