
Enabling sustainable service delivery by means of effective demand management in a local municipality

by

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ABSTRACT

Over the past months, newspapers and news bulletins are riddled by service delivery protests - to the extent that the President of the country acknowledges these protests. Many reasons were offered for the protests, but the main reason is cited as dissatisfaction with the level of basic services delivered by the municipalities. Questions were asked to obtain possible solutions to the problem. These challenges motivated the researcher to undertake a study to investigate the possible cause of poor delivery of service by municipalities to the communities. A possibility was to study and recommend a possible solution that would ensure that service is delivered on time, at the right price, at the right location and that quantity and quality meet the needs of the community. The system suitable to address this concern is demand management, the first element of the supply chain management system. The purpose of demand management is to ensure that the resources required to fulfil the needs identified during the strategic plan of the municipality, are delivered at the correct time, price and place, and that quantity and quality will satisfy the needs of the users.

The research was conducted by means of a literature study and an empirical study. The literature study entails a literature discussion on three variables identified as crucial in achieving the objectives of the study, namely sustainability, demand management and change management. These variables form the basis of the evaluation of the factors which ensure that effectively used demand management results in sustainable service delivery. Delivering sustainable service will ensure that the service is delivered on time, at the right price, at the right location, and quality that meets the needs of the users. These variables were empirically tested in practise by means of a measurement instrument and subsequently evaluated.

Based on the evaluation of the empirical study, the demographical data were analysed and concluded on. The reliability and internal consistence of the measurement instrument were determined by means of Cronbach Alpha coefficient. The results of the reliability test revealed that only change management's Cronbach Alpha coefficient was less than the cut-off value of 0.7. Despite the results of change management's Cronbach Alpha coefficient, the reliability of the other latent variables was found to be reliable and internally consistent.

The variables were analysed and concluded upon by means of a descriptive statistical analysis, using frequency on the questionnaire responds. The arithmetic mean and standard deviation per construct was also calculated, using SPSS (Statistical Package for the Social Sciences).

The relationship between the variables was also evaluated through determining the effect size and correlation of coefficient being calculated. Practical recommendations were suggested to address the weaknesses found during the evaluation of the questionnaires, in order to improve future continuity of both municipalities used as unit of measure. Recommendations of future research needed, were also made.

Key terms: Service delivery, municipality, demand management, sustainable service delivery, needs of users, municipal management, effect size, Cronbach alpha.

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CHAPTER 1: NATURE AND SCOPE OF THE STUDY

1.1 INTRODUCTION

The concept of Supply chain management (SCM) is well understood in the manufacturing sector. The concept of SCM has not been applied within the government sector, however, various challenges drove the need for government to apply the principles of supply chain management to modernize the management of the public sector, to make it more people friendly and sensitive to meeting the needs of the community it serves. Hence, the Cabinet adopted a supply chain management policy to replace outdated procurement and provisioning practices across government, with an SCM function that will be an integral part of financial management and will conform to international best practices, in September 2003. Supply chain management is a management philosophy aimed at integrating a network of upstream linkages (source of supply), internal linkage outside the organisation and downstream linkages (distribution and ultimate customers) in performing specific processes and activities that will ultimately create and optimise value for the customer in the form of products and services which are specifically aimed at satisfying customer demands (Hugo, Badenhorst-Weis and Van Rooyen, 2002:29). A municipality's objective should always be focused on performance and results as far as service delivery are concerned; as such, the institution as a whole and the activities needed to run it properly should be taken into account. The basic objective of any municipality should be to operate effectively and efficiently. Although other factors are needed, the realisation of such effectiveness and efficiency is enabled by supply chain management. A key goal of supply chain management is to provide for the smooth functioning of operational activities by way of a sufficient and uninterrupted flow of goods and services to the municipality. This SCM key goal is achievable through the application of an effective system of demand management which will ensure that the resources required supporting the strategic and operational commitments are delivered at the correct time, at the right price and at the right location, and that the quantity and quality satisfy the needs of the end-user.

1.2 PROBLEM STATEMENT AND OPPORTUNITIES UNDER INVESTIGATION

Over the past months, South Africa woke up to increased service delivery protests which were marred by violence. According to local newspapers as well as news bulletins appearing on national television, communities took to the street demanding a wide range of services. “Now I understand the service delivery protests, says Zuma”. These were the words of our president as published in the Sunday Times newspaper dated the 15 May 2011. The president further elaborated by saying that he has seen the coldface of service delivery and that the report from the officials sometimes may not give the same feeling that you get when you come into contact with the real conditions people live in. The president’s words were a result of a wave of protest actions experienced across most provinces. Many reasons are offered for these protests, but the main reason is cited as dissatisfaction with service delivery of basic municipal services. These recent escalations of public protests concerning service delivery are an indictment on municipalities’ ability to provide services that meet citizens’ expectations. The results of dissatisfaction manifested itself through mass actions, toy-toying and vandalising of public places by the community. In a number of places the police had to use force to stabilise the situation and restore order through applying actions such as arrest for looting, public violence and other various actions. Notwithstanding the legitimate concerns of the residents, some of the demands fell outside the legislative mandate of the sphere of local government. The question to be asked is: “What strategy is in place to ensure that service is delivered on time, at the right price, at the right location, and that quality and quantity meet the needs of the community”? While for many municipalities, the nagging question about delivering sustainable service remains “What is it going to take to get ahead in providing good service and to stay ahead of our constitutional mandate as local government”. The answers to the above questions are found in the effective usage of supply chain management through application of demand management. Demand management will ensure that the resources required to fulfil the needs identified in the strategic plan of the municipality are delivered at the correct time, price and place and that quantity and quality will satisfy those needs.

The objective of this research is to highlight the importance of effectively using demand management, one of the elements of supply chain management, in enabling sustainable service delivery that will meet the needs of the people. Local government, in particular local municipalities’ sustainable service delivery, supply chain and demand management, will be defined and discussed. The research specifically focuses on the local government sector, particularly on Emfuleni Local Municipality and Metsimaholo Local Municipalities.

1.3 THE OBJECTIVES OF THE STUDY

1.3.1 Primary objective

The primary objective of this research is to reflect that effective use of demand management enables sustainable service delivery in a local municipality.

1.3.2 Secondary objectives

To achieve the primary goal, the research will focus on, but not necessarily be limited to, the following specific objectives:

- To evaluate the factors that ensure long term sustainability of service delivery;
- To determine whether sustainable service delivery is the key to long term performance of the municipality;
- To assess and evaluate the tools that prove that effective demand management is crucial to sustainable service delivery;
- To assess the extent to which effective demand management system is applied in a local municipality;
- To evaluate whether demand management enhances/enables service delivery;
- To evaluate the importance of change management principles in achieving the benefits associated with implementation of demand management.

1.4 RESEARCH METHOD

This research consists of two phases, namely a literature review and an empirical study.

1.4.1 Phase 1: Literature review

The literature study will form the theoretical basis of the study. Supply chain management has been identified and researched in many industries including manufacturing, healthcare, information technology and the retail sector. However, limited information is available about the study of demand management as an element of SCM towards enabling service delivery in local government. The National Treasury of South Africa has recognised supply chain management (SCM) as one of the key financial management reform focus areas. The emphasis falls on staying ahead of the constitutional mandate, as the local government's sphere rests on how well the entire supply chain management performs in terms of service delivery. Due to the limitation mentioned above, the sources that will be consulted to access literature needed in the study include:

- National treasury prescripts;
- Textbooks;
- Journals;
- Internet; and
- Local newspapers.

1.4.2 Phase 2: Empirical study

The empirical study consists of the research design, participants, measuring instruments, and statistical analysis.

1.4.2.1 Research Design

The aim is to reflect the importance of effectively using demand management, an element of supply chain management, as a tool to enable sustainable service delivery. This section will discuss the research design developed to explore the aim of this study. Firstly, a justification for the research design and a description of the research setting will be provided. Secondly, the data collection method including measures and the research instruments employed will be discussed. Finally, the procedure employed for the analysis of data collected using the various research instruments will be provided.

A research design is a plan, structure and strategy of investigation so conceived as to obtain answers to research questions or problems (Kerlinger, 1986:279). Its purpose is to provide the most valid, accurate answers as possible to research questions (McMillan & Schumacher, 1993:31). The research can be classified as descriptive and explorative. Descriptive research is the research primarily concerned with describing the nature or conditions and agreement in details of the present situations (Landman, 1988:59), while explorative research is defined as the research into an area that has not been studied and in which a researcher wants to develop initial ideas and more focused research questions (Neuman, 2000:510). In this study, only exploratory research will be used because a problem about which little is known, will be investigated. The two possible methods to be used in exploratory research are that of studying secondary sources of information and surveying of individuals who are likely to have opinions on the subject under investigation. Due to the exploratory nature of this study, hypotheses will not be formulated. The study's emphasis will be on using demand management, an element of supply chain management, as a tool to enable service delivery in local government from the view point of the employees, rather than on the confirmation of prior research.

The specific design that will be used in this study is quantitative technique, using distribution of questionnaires. In order to ensure consistency and quality of the data collected, research instruments such as survey questionnaires will be designed. A quantitative design technique is most suited to address the problem identified because of the belief that there is an objective reality that can be measured.

1.4.2.2 Units of Analysis

Whilst it would be acceptable to analyse the data at various scales, the Emfuleni Local Municipality and Metsimaholo Local Municipality will be the units of analysis. The selection of these municipalities was based on the level of responsibilities they have in providing service to the community, and furthermore the differentiation in the size of the local municipalities (i.e. high and medium capacity municipalities).

1.4.2.3 Participants

A convenience sample from the municipality will be used in which the profile of the participants will reflect the general demographics of the municipality in terms of gender and age. However, an effort will also be made to ensure a good mix of race within the municipality concerned. The following key stakeholders of the municipality's concern will be targeted.

- Stakeholders to be provided with the questionnaire:
 - The mayor and all of his/her committee members;
 - The speaker of the council;
 - The municipal manager and all of the senior manager's team;
 - All the managers;
 - All assistant managers;
 - Supply chain practitioners.

1.4.2.4 Measuring Instrument

The constructs will be measured with the Likert response scale. The Likert Scale is a measure of attitudes and is designed to allow respondents to indicate how strongly they agree or disagree with carefully constructed statements that range from strongly agree to strongly disagree towards attitudinal objects. The instrument will consist of 45 potential items and it will be scored on a rating scale of 1 to 4. The typical item is an "integrated development plan, a source which supply chain uses to plan and execute infrastructure projects aiming at service delivery". A score of 1 indicates a strongly agree level of construct, while 4 indicates a strongly disagree level of construct. The measuring instrument to be applied has been widely used in research, thereby providing reliability found to be adequate in the circumstance to a certain extent. Reliability refers to the extent to which test scores are accurate, consistent or stable (Struwig & Stead, 2001:130). Thus, an instrument is reliable to the extent that independent administrations of it or a comparable instrument consistently yield similar results (De Vos et al., 2001:85). The reliability will be determined through the use of test-confirmation method. The reliability of test scores is related to its validity in that if test scores are not reliable, its scores are not valid either. Validity of a measuring instrument scores refers to the extent to which the instrument measures what it is intended to measure. The validity of scores in this study will be established through face validity and content validity respectively. Face validity refers to whether the items of the test appear to measure what the test purports to measure. If this is not the case, the participants may question the purpose of completing the questionnaire. Content validity refers to the extent to which the items reflect the theoretical content domain of the construct being measured. The test will comprise of items that reflect important aspects of the construct being measured. The content validity of a test is determined by expert judgement in

which the item domain of the test is compared with detailed description of the domain of the construct. The knowledge and experience of the researcher on the subject matter will judge the content validity of the test items.

1.4.2.5 Statistical Analysis

The research will analyse two variables at the same time at ordinal level of measurement. Therefore, the descriptive statistic technique will be used. The purpose of these statistics is to provide overall, coherent and straightforward picture of a large amount of data (Struwig & Stead, 2001:158). There are numerous descriptive statistics, but this study shall refer to measure of central tendency and dispersion, skewness and kurtoise. The measure of central tendency includes the mode, median and mean, while measure of dispersion indicates the degree to which the cores are spread out and it includes ranges, standard deviation and variance. The skewness refers to the degree of deviation from symmetry while kurtoise refers to how flat or peaked the distribution is.

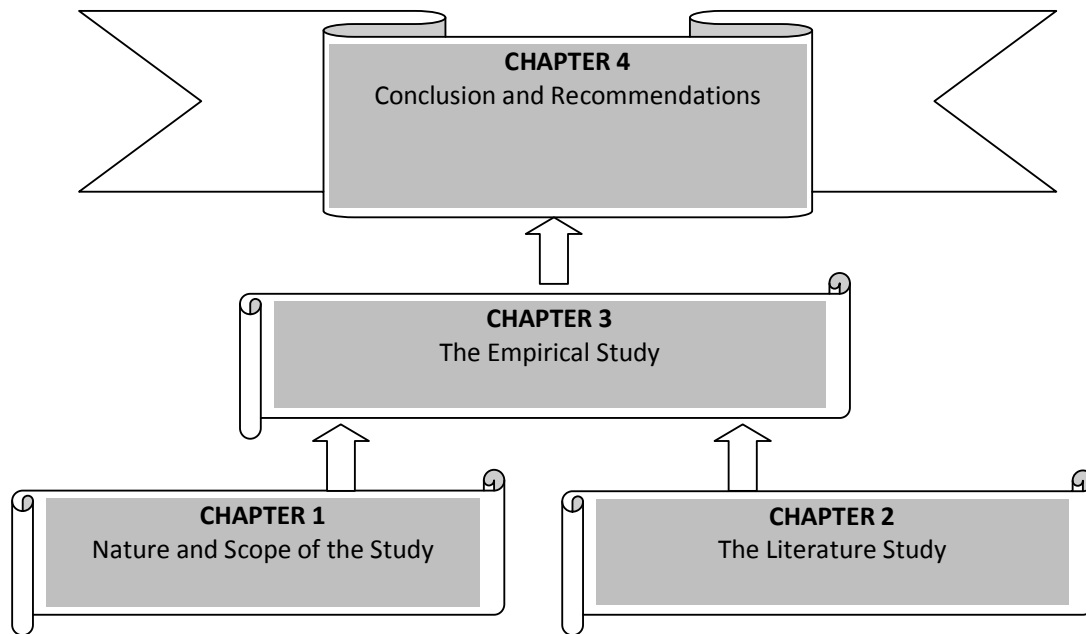
1.5 LIMITATIONS/ANTICIPATED PROBLEMS

- Unavailability of participants due to preparation of financial year end;
- Unavailability of participants due to municipal strike; and
- Willingness of the participants to complete the questionnaire.

1.6 CHAPTER DELINEATION

Figure 1.1 provides an overview of the interrelationship between the various sections of the study. The chapter descriptions define the dissertation as follows below:

Figure 1.1: Layout of the study



Chapter 1: Nature and scope of the study

The problem area of the study will be discussed. The primary research objective together with the secondary objectives and the research method will be introduced. The limitations on the research will be described. Introduction, problem statement, the objectives of the study, research methodology and limitations of the study will be the sub-topics of this chapter.

Chapter 2: The Literature Study

The nature of the local government will be introduced as background of this study. Sustainable service delivery in the context of local government will be discussed while demand management as the first and most important element of supply chain management will be defined through this chapter. The importance of demand management towards sustainable service delivery will be highlighted. The importance of managing change during a demand management program is discussed, with a view to address communication and resistance that might prevail during the implementation of demand management. Supply chain demand management, in particular, comes from the picture of how effective local government can be in delivering sustainable service if projects are executed effectively and efficiently to meet the needs of the communities.

Chapter 3: The empirical Study

Research based on the questionnaire is conducted to demonstrate and prove the literature study. Quantitative method is used to analyse the survey results. The objective of the study is to expose the importance of demand management as the leading element of supply chain management and to provide the framework of the effective demand management. The empirical study is the important supplement of the theory.

Chapter 4: Conclusion and Recommendations

The dissertation is summarised with the emphasis on the results obtained and the contribution made by the results of the research. Some recommendations provided are on how to achieve sustainable service delivery through the application of demand management in local government. Suggestions for further research are also outlined.

1.7 SUMMARY

In this chapter, the problem from which the study evolved has been stated, as well as the main objective the study aims to achieve, namely to demonstrate the importance of demand management in delivering sustainable service to the communities. In addition to this, secondary objectives of the study have been defined. Furthermore the method of research has been described. The chapter has been concluded with a layout to follow. The proposed chapter delineation will be used as a guide to the dissertation.

CHAPTER 2: LITERATURE STUDY

2.1 INTRODUCTION

The Republic of South Africa is a constitutional democracy with a three tier system of government, namely: national, provincial and local government, all with legislative and executive authority in their own sphere and are defined in the South African Constitution as “distinctive, interdependent and interrelated.”

The focus area of this study is on the role of demand management in bringing about sustainability in local government. Du Toit and Van der Waldt (1998: 233) define local government as an institute established by law for the residents of a particular area, exercising authority in the demarcated area, autonomous with power and authority to provide services and amenities to residents in its area of jurisdiction to maintain and promote their well-being. Section 152 of the Constitution of the Republic of South Africa, 1996 provides for six objectives of local government; however, this study focuses on one of the objectives namely, section 152(1) (b) which states “to ensure the provision of services to the communities in a sustainable manner”. Municipal Systems Act, 2000, section 73 (1) (a)–(c) requires that a municipality must “give priority to the basic needs of the local community; promote the development of the local community; and finally ensure that all members of the local community have access to at least the minimum level of basic municipal services”. The White Paper on the Transformation of the Public Service (WPTPS), published on 24 November 1995, sets out eight transformation priorities, amongst which Transforming Service Delivery is the key. This is because a transformed South African public service and will be judged by one criterion above all: its effectiveness in delivering services which meet the basic needs of all South African citizens. Improving service delivery is therefore, the ultimate goal of the public service transformation programme.

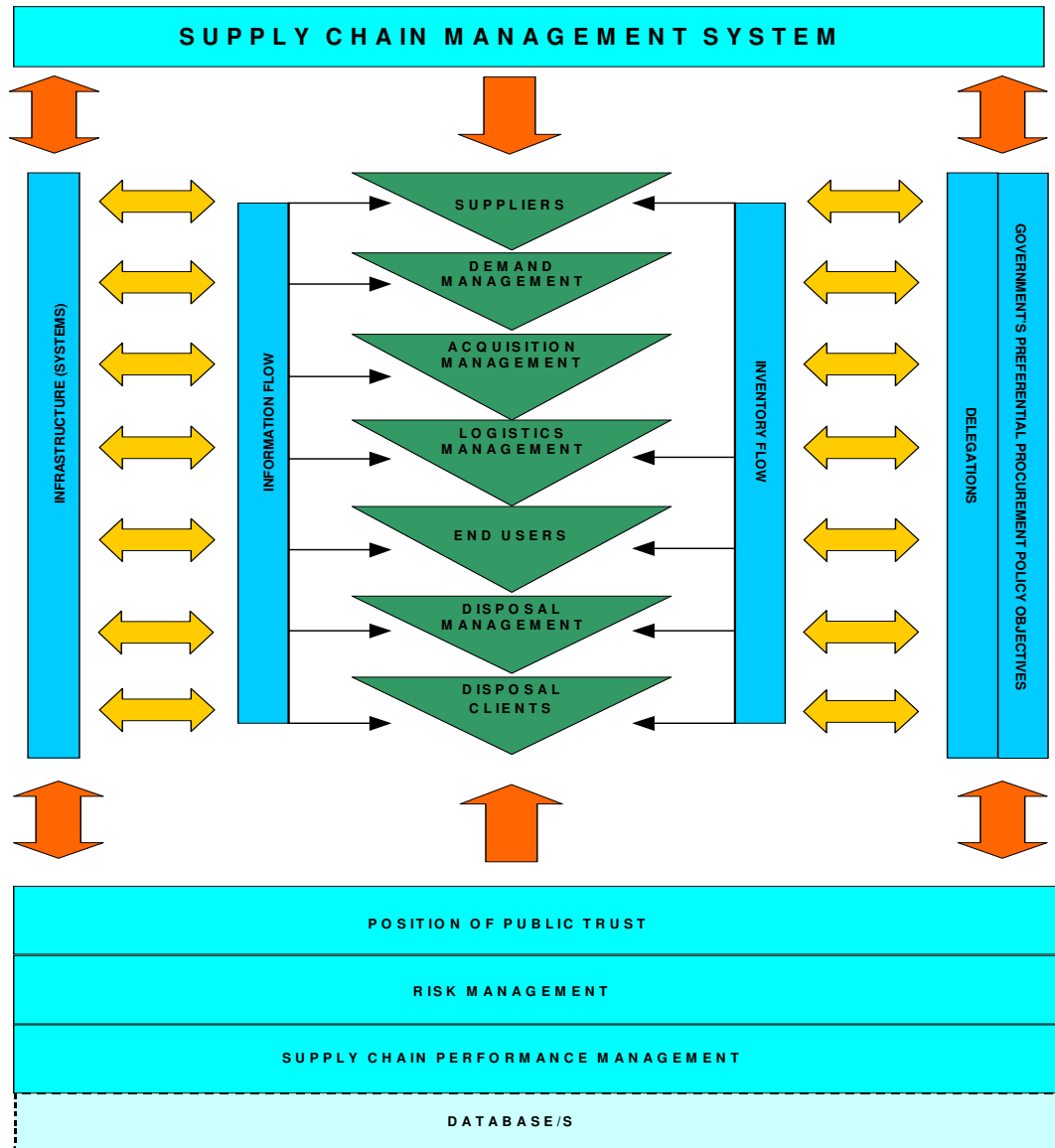
The effective delivery of municipal services is crucial in creating cities that work, since households and businesses depend on the provision of these municipal services. Providing poor levels of service can undermine quality of life and erode trust in local government. Therefore; the provision of services to the citizen must be basic to the mission of all municipalities within the local government so as to achieve the Constitutional mandate. These provisions of service delivery must encapsulate eight principles of **Batho Pele Principles** as cited in WPTPS, namely: consultation, service standards, access, courtesy, information, openness and transparency, redress and finally value for money. WPTPS defines service delivery as a dynamic process from which a completely new relationship is developed between the public service and its individual clients.

In order to implement a service delivery programme successfully, public service managers require new management tools. Although other tools are needed, the realisation of such effectiveness and efficiency is enabled through the application of demand management processes, since service delivery is about the implementation and making sure that services reach those people and places they are intended for.

A key goal of demand management is to provide for the smooth functioning of operational activities by way of a sufficient and uninterrupted flow of goods and services to the municipality for the benefit of the community. This key goal is achievable through the application of an effective system which will ensure that the resources supporting the strategic and operational commitments are delivered at the correct time, at the right price and at the right location, and that the quantity and quality satisfy the needs of the communities. The latter section is also the definition of demand management.

The adoption of an integrated supply chain management function on 23 September 2003, provided for the elements of supply chain management as illustrated in figure 2.1. As mentioned above, the mini dissertation focuses on demand management (DM) which is the beginning of supply chain. This phase brings the supply chain practitioner closer to the end-users, to ensure that value for money is achieved. It further implies, among others, that during the development of the municipality's integrated development planning (IDP), or any part thereof, the functions to be executed are determined. The demand requirement for goods, works and/or services are therefore specifically budgeted and programmed for within the municipality's integrated development planning (IDP).

**Figure 2.1:
Elements of Supply Chain Management**



Source: Emfuleni Local Municipality (2006: 40)

Furthermore, each municipality is required in terms of section 23 of the Municipal Systems Act, to undertake a developmentally- oriented planning so as to strive to achieve the objectives of local government as set out in section 152 of the Constitution and to give effects to its developmental duties as required by section 153 of the Constitution.

2.2 LEGISLATIVE ENVIRONMENT

Supply chain management is guided by the principles of co-operative governance and intergovernmental relations as stipulated in the Constitution, enshrining the autonomy of each sphere whilst regulating the relationship between those spheres. The following legislation plays a pivotal role to ensure that the activities within the supply chain management practices, particularly in Local Government, are undertaken in a manner which is fair:

- The Constitution of the Republic of South Africa, Act No 108 of 1996:- section 217(1) thereof, requires that “When the organs of state contract for goods and service, it must do so in accordance with a system which is fair, equitable, transparent, competitive and cost- effective”.
- The Municipal Finance management Act, Act No 56 of 2003:- sets out the responsibilities of the accounting officer and highlights a number of aspects impacting on supply chain management, in particular, section 115 which requires that the accounting officer must implement the supply chain management policy of the municipality and take all reasonable steps to ensure that proper mechanisms and separation of duties in the supply chain management system are in place to minimise the likelihood of fraud, corruption, favouritism and unfair and irregular practices. Section 119 of the said Act, stipulates that the officials involved in the implementation of supply chain management must meet the prescribed competency level.
- The Municipal Finance Management Act: Supply chain management regulations require that supply chain management must provide for the effective systems of:
 - **Demand management;**
 - Acquisition management;
 - Logistics management;
 - Disposal management;
 - Risk management; and
 - Performance management
- Local Government: Municipal Systems Act, Act No 32 of 2000:- its purpose is to provide for the core principles, mechanisms and processes that are necessary to enable municipalities to move progressively towards the social and economic upliftment of local communities, and to ensure universal access to essential services that are affordable to all.
- The Preferential Procurement Policy Framework Act, No 5 of 2000 and its regulations provide that economic transformation must be promoted through preferential procurement in order to promote the meaningful participation of communities in the

economic stream of South Africa, which in turn will ensure that community members take ownership of service delivery within their area.

There are, however, additional legislations which also have an impact on the fairness and transparency of the supply chain, but do not have a direct bearing on the topic of demand management in this study.

2.3 SUSTAINABLE SERVICE DELIVERY

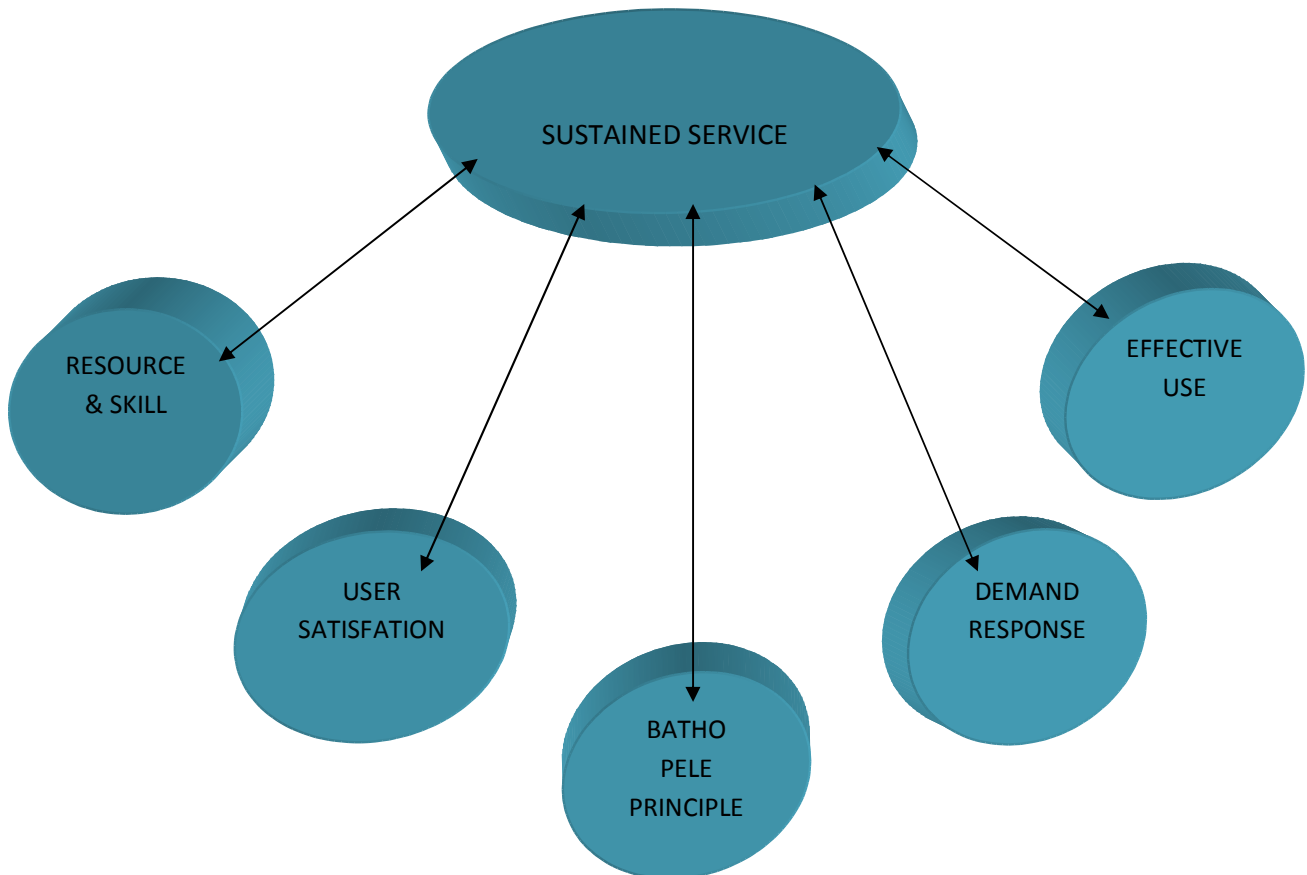
The word “sustainability” is on everybody’s lips within the municipality environment as well as within the government departments. Sustainability is achieved when a possible competitive advantage resists erosion by competition (Porter, 1985: 20). However, such sustainability has to be evaluated through self-evaluation methodology to enable the community, staff and managers to assess how well services are sustained. The development of methodologies for participation is part of “putting people first” (Cernea, 1991: 7). The methodologies of putting people first are here referred to as Batho Pele Principles, an approach creating a framework for the delivery of public service, which treats citizens more like customers and enable the citizen to hold public servants to account for the service they receive (Ballies, 2008:22).

A number of studies have explored the conditions under which a business’s competitive advantage is sustainable. There are four essential requirements for a resource/skill to be a source of sustainable competitive advantage namely, (a) it must be valuable, (b) it must be rare among a firm’s current and potential competitors, (c) it must be imperfectly imitable, and (d) there must not be any strategically equivalent substitutes for this resource/skill (Barney and Tyler, 1991).

Firm resources and skills are considered valuable when they aid a firm in formulating and implementing strategies that improve its efficiency and/or effectiveness. Municipalities need the right staff, skill sets, and practices to make service delivery more sustainable and demand-responsive. The more that demand-responsive approaches are used from the beginning in interactions with communities, the more the community has the opportunity to influence the service delivery process, and the more it helps to build community ownership and the capacity to manage the services effectively. Promoting co-operation and mutual understanding at and between all stakeholder levels, from the users up to municipality management, can contribute to sustainability. In context sustained service delivery can be defined as the continued and dependable delivery of enough service of an acceptable quality to all households. In conclusion, to deliver a service which will be sustainable, it is critical to up-skill and empowers employees to

ensure a workforce that will be able to meet the goals of the organisation. Sustained services delivery is a key to sustain superior long term performance. Resources and skills, user satisfaction, batho pele, demand responsive and effective use, are generally viewed as the distinguishing characteristics of sustained service (see figure 2.2).

Figure 2.2:
Correlation: Characteristics associated with Sustained Service



Source: Figure developed by the author

2.4 DEMAND MANAGEMENT (DM)

2.4.1 Why Manage Demand?

Demand management has been found to be a key performance indicator that enables supply chain professionals to begin a meaningful dialogue with their department heads to understand why the utilisation of any commodity they are buying, is increasing or decreasing beyond normally acceptable, justifiable limits (Yoki, 2010:18). Today, successful demand management

requires a multi-channel, multilevel approach that exploits every link in the supply chain, which for most enterprises, represent a complex group of constraints. It is one approach to ensure that the business's needs are appropriately met and that resources are not being applied unnecessarily. It is therefore, not about reducing contract volume, but it is about ensuring, amongst other considerations, that contract volumes are appropriate for meeting the needs and objectives of the organisation. It can either be a relatively "simple" approach against a specific requirement or may involve adopting a strategic approach. A demand management approach also introduces discipline in terms of demand forecasting and assurance that the correct action has been taken to meet the needs of the organisation. The former can ensure that more robust "commitment" can be made to suppliers during the selection and award stage of the activity. However, the success of a demand management approach will depend on a number of key factors, amongst others are seniors' buy-in and support, process visibility (monitor and intervene), and ability to measure outcomes (source).

Ideally, the demand management regime should be part of the source plan for the category. Furthermore, consideration of community expectation and demand, whether they are related to promoting or decreasing the expectation or demand, should be matched with consideration of supply wherever the public sector plans to provide services. Neither the public sector nor government should rely on supply side policies alone. Focusing on supply side alone is not sustainable in the long term, as the demand, amongst other things, will always outstrip supply (NSW Treasury, 2004:2). Hence the question of ensuring that the resources of the community are distributed *equitably* among the whole range of government services is also pertinent.

There is a need for the municipalities to take a corporate approach in managing procurement issues, with the emphasis upon examining whole-life costs and setting longer term objectives to secure overall best value for money. Five tools of supply chain management that will prove that implementing effective supply chain management is an advantage for organisations that provide service, are highlighted (Cook et al, 2001: 15). Three of the five, namely: the making and retaining of relationships, the use of forecast to increase effectiveness and cost management as a strategic weapon, play a pivotal role in showing that an effective demand management is crucial to the sustainable service delivery.

- **Relationships:** The most important contribution to sustained service delivery, is building strong relationships with the suppliers and customers/communities. The organisation can benefit in numerous ways from loyal customers, including increased payments of rates and taxes. However, for the relationship to be successful and long term, the customer (community) must benefit. Table 2.1 shows some of these benefits.

Table 2.1
Customer Benefits of a Long Term Relationship

<p style="text-align: center;"><u>Social Benefits</u></p> <ul style="list-style-type: none"> • Personal friendship with providers • Personal recognition 	<p style="text-align: center;"><u>Psychological Benefits</u></p> <ul style="list-style-type: none"> • Feeling of security • Reduce anxiety • Trust and confidences
<p style="text-align: center;"><u>Economical Benefits</u></p> <ul style="list-style-type: none"> • Discount or price breaks • Quicker services • Time saved in looking for new provider. 	<p style="text-align: center;"><u>Customerisation Benefits</u></p> <ul style="list-style-type: none"> • Preferential treatment • Additional consideration or service • Less hassles

Source: Adapted: Cook et al, 2001:16

- Forecasting: Every organisation can effectively use customer data to synchronise its demand management processes with needs. This can be done through customer forecasts, which are deemed as a necessary element of managing demand. Effective forecasting provides vendors with more accurate data, improves efficiency in operation, reduces inventories and enhances customer services (Kiely, 1998/1999). In general, forecasting help organisations service their customers more efficiently, without the constant fear of protest. However, if demand management uses erroneous forecast, the result will be felt throughout the entire system.
- Cost Management: Cost management is an important strategic weapon for any organisation. External purchases of products and services account for more than fifty percent (50%) of total costs (Degrave and Roodhooft, 1999:5). Without sacrificing quality, service must create a reliable, cost-effective demand management process to be competitive in the community. Demand management is a proven mechanism to take cost out of the organisation without further reducing its capacity to execute (Kearney, 2003:1). Demand management addresses the underlying drivers of external spending, aligns this spending to business needs and eliminates unnecessary consumption. According to Kearney, although many companies use demand management to target their indirect spending categories, leading companies are now applying demand management to complex categories of spends. Kearney, further pointed out that demand management is becoming the tactic of choice across a wide range of companies and industries, (i.e. telecom, financial institutions and manufacturing).

2.4.2 What is Demand Management? (DM)

Demand management is defined as “The active intervention in the market to influence the demand for service and the assets generated and/or used in supplying these services to best match available resources to real needs and ensuring the services provided are delivered with the best value for money” (NSW Treasury, 2004:3). Demand management is also called strategic spend management or consumption management and involves all activities associated with managing the volume of an organisation’s external purchases (Kearney, 2003:2). Through demand management, organisations gain a better understanding of the rationale behind their purchases since the objective is to ensure that the resources required to fulfil the needs identified in the strategic plan of the institution are delivered at the correct time, price and place and that the quantity and quality will satisfy those needs. Unlike traditional sourcing efforts, it targets the quantity of products purchased from suppliers, not just the price paid. As part of this element of SCM, a total needs assessment should be undertaken. This analysis should be included as part of the strategic planning process of the institution and hence will incorporate the future needs.

Demand management reaches beyond strategic sourcing. Where strategic sourcing provides a well defined method for supplier management, effectively controlling the price paid for the goods and services demand management goes a step further, attacking the other elements of the cost equation: consumption. Demand management handles quantity; enabling organisations to reduce and even eliminate entire areas of spend. As part of the strategic plan of the institution, resources required for the fulfilment of its obligations should be clearly analysed. This includes a detailed analysis of the goods, works and services required, such as how much can be accomplished, how fast and with which materials and equipment. However, successful demand management requires organisations to clearly understand that their corporate role is not to provide ever more services, but to provide (NSW Treasury, 2004:3):

- Effective service outcomes to meet identified community needs;
- Assess if this need is changing; and
- To respond appropriately and within the available resources.

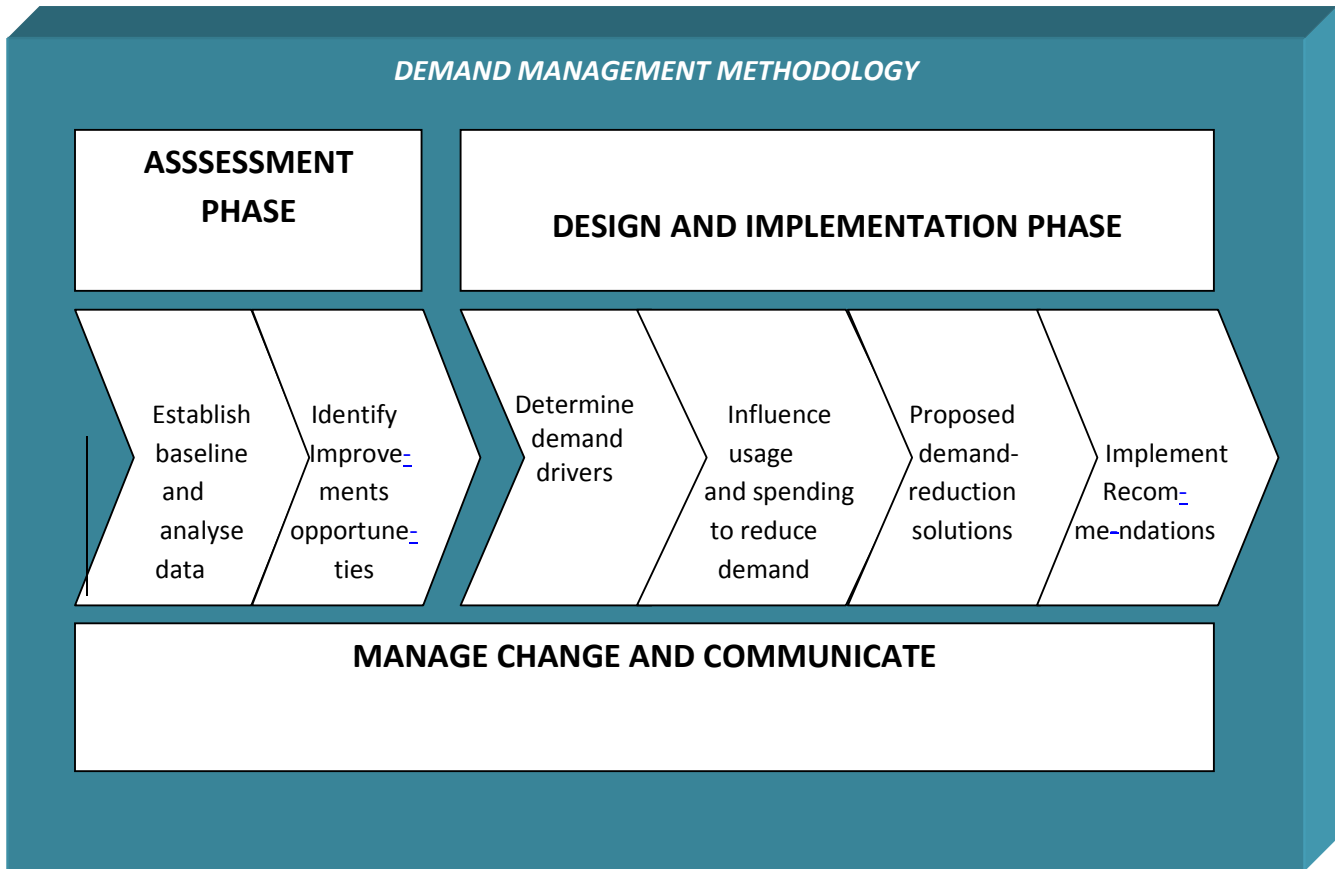
This requires that organisations develop a close working relationship with their clients, based on thorough knowledge of their characteristics, needs and expectations. Demand management is not intended to reduce the scope or standard of services to offset management deficiencies elsewhere - it aligns the demand for services with the available resources to ensure that

genuine needs are met and community benefits are maximised. Some organisations are already applying demand management in its various forms with considerable success; hence it has the potential to become a key element of reform in the resource planning and management process, encouraging organisations to jointly plan service delivery (NSW Treasury, 2004:3).

2.4.3 Demand Management Process

The demand management process is an approach to managing external spends through the targeting of the rationale, quantity and specification of purchases rather than the price. Typically, it involves aligning business requirements with products or services procured. It is applicable to all commodities where internal demand and consumption can be influenced to reduce costs and it requires strong buy-in and implementation by stakeholders. When it comes to implementing a demand management program, the most successful programs are those that result in end-to-end organisational change, leading to a structural shift in how an organisation acquires goods and services. Kearney's demand management approach is based on a structured, well defined six step methodology that is rooted in fact-based analysis (Figure 2.3).

Figure 2.3: Demand management methodology



Source: Kearney (2003:5)

Step 1: Assess the organisation

The first phase of a demand management program is to perform a high-level assessment of all spending categories. This assessment focuses primarily, but not solely, on obtaining data from internal and external sources to gain an improved understanding of the company's buying process and usage. By understanding how the organisation spends money across categories, managers will be able to set priorities and to measure the potential impact of demand management on the entire organisation. According to Kearney, the best means of collecting data is to organise it along three dimensions, namely: spending groups, supplier and business groups. As information is gathered, a robust spend profile emerges. For example, from data in the spending groups, the company begins to understand how much it pays out in each category and to identify its top spend areas. Larger categories can be broken down into subcategories. In the supplier dimension, the organisation's total spend with individual firm is determined, thus allowing for insight into which suppliers are being used and the level of compliance to preferred suppliers deals. Finally, by categorising information by business group, an organisation can

identify its total spending by line of business. Together these dimensions offer new insight into an organisation's spending patterns.

There is far more to the assessment phase than simple data collection. However, at its best, the assessment is the initial phase during which managers obtain a high level of understanding of their organisation's situation. It is also the point at which organisational support for a demand management initiative begins to take shape. It is only when this foundation is firmly in place that it is time to move to the next step.

Step 2: Identify improvement opportunities

Armed with an organisational assessment, the next step is to identify improvement opportunities. These are the spend categories in which costs can be reduced or demand can be eliminated. Kearney talks about three elements to this identification process, namely: review current practices, understand the opportunities and prioritise the categories. Each identification process is further discussed here after:

- *Review current practices*:- a prerequisite for analysing demand is to gain thorough understanding of current practices. Information on current initiatives, buying practices as well as existing policies and controls provide valuable insight into how an organisation is managing its spending in a given category. A good way to gather critical information on current practices is to interview key employees from all areas of the business.
- *Understand the opportunities*:- Once the information is collected it is analysed to determine what impact a demand management program might have on the organisation as a whole. In this scoping exercise, the organisation compares internal processes, policies, buying practices and external benchmarks. The comparison is used to estimate potential savings for each spending category and to determine the potential savings for the overall demand management initiative. Bear in mind that in the scoping phase the saving estimates is just that estimates. They are assumptions based on experiences from other organisations, external benchmarks and a solid understanding of current practices and potential areas of opportunity.
- *Prioritize categories*:- Demand management programs are usually performed in waves, i.e. beginning with categories that will provide the largest impact for the time invested. The first set of categories should have a significant chance of success because strong planning here will pave the way for success in future categories. Although the more categories undertaking, the higher the potential savings, most organisations will be limited (by a lack of available resources) in the number of categories they can take on at

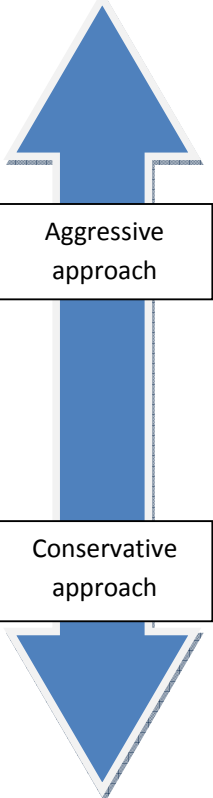
one time (Kearney, 2003:7). While aggressively eliminating demand can be extremely effective in reducing cost, it can lead to bigger problems down the road. To avoid problems, first determine the areas that will be mostly affecting the demand management initiative, and balance the political and management implications of certain decisions with the different needs of the employees. Most cost-saving initiatives follows the “80/20” principle in which the organisation focuses primarily on opportunities in the largest element of a category, however, with demand management, the opposite principle often applies where the best cost-saving opportunities reside in the many smaller suppliers or in subcategories.

Step 3: Determine what drives demand:- This step requires a thorough analysis of the organisation’s “demand drivers” to figure out exactly what drives consumption within the organisation. Demand drivers are the underlying factors that influence the quantity and specification of purchase, for example, the demand drivers behind a computer purchase might include the predetermined replacement cycle or the hiring of new employees, therefore the hiring of new employee is a demand driver. Understanding these demand drivers can be a complex task, particularly because they will vary across the organisation. Different business groups may have different requirements or business practices, which lead to different drivers or level of demand. Identifying the true demand drivers for a category will require some investigation skills. At each level we ask “why?” until the ultimate reason for expenditure is uncovered. By gaining a thorough understanding of the root causes of an expense, the organisation will be better equipped to identify ways to reduce demand.

Step 4: Influence usage and spending:- The fourth step is to determine the best way to influence usage and spending and thereby reduce demand. This is typically achieved using two tools, namely demand reduction levers and benchmarks.

- *Demand reduction levers:* According to Kearney there are seven key demand reduction levers, which are proven methods to reduce or eliminate spend on goods and services. These demand reduction levers range from the conservative to the aggressive. The most conservative lever is to increase cost awareness amongst employee; the most aggressive is to eliminate demand altogether. While aggressive levers will significantly affect cost levels, conservative levers can usually be applied more quickly and in more sensitive areas. When reviewing the seven demand reduction levers, consider all of the alternatives. Although the levers will vary in their aggressiveness and ease of implementation, at least one demand reduction lever can be applied to any category or potential opportunity. Figure 2.4 explains the requirement of technology peripherals.

Figure 2.4
Methods to reduce demand

Approach	Demand Reduction Levers	Technology Example
 <p align="center">Aggressive approach</p> <p align="center">Conservative approach</p>	<ol style="list-style-type: none"> 1. Eliminate demand 2. Reduce quantity 3. Simplify specification 4. Reduce frequency 5. Encourage substitution 6. Impose tighter process and tracking 7. Increase cost awareness and tighten policies. 	<ul style="list-style-type: none"> • Eliminate purchase of non-essential PC peripherals. • Reduce purchase of network servers through consolidation. • Create distinct user tiers with hard & software guidelines. • Eliminate automatic purchase of monitor with each PC. • Shift users who are not mobile from laptop to desktop. • Elevate the approval of level required for technology purchase. • Raise awareness of maintenance costs within the business units.

Source: Kearney, 2003:11

- *Benchmarks:-* One of the most effective tools to reduce demand is benchmarking. Benchmarking an organisation's performance against others can help determine appropriate types of purchases and control policies. Internal benchmarking can help raise the bar within the organisation

Step 5: Propose demand reduction solution:- During this stage the demand management team proposes its recommendations. However, each recommendation should be based on a sound facts base and solid, supportable analysis. The reason for this is that when recommendation is based on sufficient data, it allows for more reliable analysis and provides transparency into the value of each recommendation. In other words, the right data gives decision-makers the information they need to make the best decision. According to Kearney, one key to a successful demand management program is to offer alternatives, meaning decision-makers should be presented with a range of options, representing the many different approaches that can be used to remedy any given situation. For example, to restrict costly last-minute purchase of PC peripherals, the decision-maker should be able to choose from a fairly conservative solution of issuing notices to employees to a more aggressive solution of requiring executive approval for the purchase of the PC peripheral. The solution of choice will depend on the underlying fact base of savings estimates, knowledge of potential areas where resistance may occur and the estimated time it will take to implement the option. Furthermore every demand management recommendation should take into account the possible effect on customers. Customer considerations are important to all organisations, and can often be analysed in a comprehensive methodology, much like any other category of business risk.

Due to the significant changes that must take place, both top-down and bottom-up support is crucial to a successful demand management program. By involving the business groups throughout the process, it is more likely that the demand management team will achieve broader buy-in for its recommendations and encounter less resistance further into the implementation.

Step 6: Implement demand reduction:- Demand management is won or lost in the implementation. A successful implementation requires continuous monitoring to ensure change is embedded throughout the organisation. It calls for upfront planning to force the organisation to fully analyse the feasibility of recommendations and constant supervision to keep actual results in line with the identified opportunities. It must be born in mind that savings from demand management are not real until budgets have been reduced to reflect the savings. The most successful demand management programs feature the following characteristics:

- *Strong partnership:* effective partnering allows the demand management team to integrate with diverse business units and help them meet their cost-reduction objectives. The level of partnership will vary depending on the category, or even by the recommendation, but should be based on accurate, regular reporting and tracking of key information.

-
- *Performance measures:* Performance measures are a crucial part of the implementation. Effective measures result in two ways – track performance and provide detail feedback to resolve problems quickly and build on success more efficiently. The insight provided by performance measures must also reach the highest levels of the organisation. High level oversight will ensure that the recommendations are adopted as planned and that business units are progressing on track.
 - *Solid infrastructure:* Top companies build a robust infrastructure to support their demand management initiatives. They create compliance mechanism tools and process to control usage both internally and externally and assign clear ownership and responsibility. For example, to increase compliance in the office supplies category, companies work with their vendors to ensure that only approved items are in the corporate catalogue and restrict purchase of unapproved items.
 - *No cost creep:* Finally even demand management can be taken down by cost creep. Close monitoring of usage and zero-based budgeting will ensure that costs are contained throughout the implementation.

Monitoring can be achieved with the afore-mentioned compliance structure by developing organisational responsibilities, operating processes and controls, governance structure and using detailed metrics. For example, the metrics defining the usage of the cellphone can include amongst others, the number of employees eligible for cellphones, the number of phones with low usage, and the ration of minutes used during the week versus the weekends. All these are avenues for cost creep and therefore opportunities to target additional savings.

2.5 CHANGE MANAGEMENT

Change management is the [application of] set of tools, processes, skills and principles for managing the people side of change to achieve the required outcomes of a change project or initiative. The goal of which is to apply a systematic approach to help the individuals impacted by "the change" to be successful by building support, addressing resistance and developing the required knowledge and ability to implement the change (managing the 'people' side of the change). The challenge of managing change is in communicating the new program in a way that builds excitement across the broader organisation. In conveying the program (demand management) to the entire organisation, choosing the words carefully and working from a well-thought-out communication strategy is crucial. Instilling the culture of demand management will require ongoing dialogue and few key strategies, namely:

- *Explain why*: the key declaration in every communiqué should answer the implicit “why”. This will lead to employees accepting new policies if they understand the reasons for them. If the changes seem arbitrary or unwise, employees will resist them. Resistance to change is common and predicting employee behaviour is difficult. Senior managers who share the “why” behind decisions will have far fewer frustrated employees.
- *Communicate alternatives*: by making affected users aware of substitutes for restricted or prohibited activity, an organisation can lessen the perception that a policy is excessively restrictive.
- *Be inclusive*: success depends on everyone being on board the demand management bandwagon and avoid class distinction. One has to ensure that the policies extend to all employees, regardless of class.
- *Keep the lines of communication open*: long after the demand management procedure is announced, communication must go on and on and on. Continuous and frequent communication will help to embed a change and keeps employees involved over the long term. A good practice is continuous reporting of successes. This not only reinforces the value of the program, but also helps the employees grasp the bigger picture, perhaps seeing that even the smallest wins can have a significant impact on the larger organisation, while those who are behind in meeting their targets or less successful, will feel the pressure to catch up.

The planned change model is to see managing change as a matter of moving from one state to another. Diagnosis is generally acknowledged as essential; goals are set and achieved at

various levels and in various areas or functions. Ends and means are discussed and related to one another.

2.6 SUMMARY

In this chapter, South African government structure is discussed, local government as one of the tiers of government, is defined. Furthermore legislations impacting on the demand management as an element of supply chain are also briefly discussed. The phenomenon sustainability is discussed with specific reference to service delivery in local government. The demand management process was introduced and discussed. The chapter conclude with the relevancy of managing chance during the implementation of demand management.

CHAPTER 3: EMPIRICAL STUDY

3.1 INTRODUCTION

Supply chain management, in particular demand management, is a spanning activity (Bowersox et al, 1999). The study was based on a case study conducted in Emfuleni Local Municipality and Metsimaholo Local Municipality. These municipalities were chosen based on proximity and available resources. Attaining information from the different functional managers as well as from the politicians who are directly involved with the day-to-day running of the municipality, helps paint a macro-picture of how demand management may effectively enables sustainable service delivery in local government. In order to achieve this picture and extract “a more robust and generalisable set of findings,” a two way approach was used. This approach included an extensive literature review and cross-functional survey questionnaire. The questionnaire was a preferred measurement tool since it is cheap, anonymous, easy to quantify and analyse.

3.2 METHODOLOGY

The purpose of the survey was to capture how functional managers and politicians view the importance of demand management in enabling sustainable service delivery. The research approach used in this study is quantitative research which is descriptive in nature. The non-probability method of sampling is used in this study, which means that the results of the findings will not be generalised, since the purposive sampling technique is also applied. Purposive sampling is applied because only people entrusted with the responsibility to implement and execute the strategic plan of the municipality were regarded as appropriate. Therefore, three groups of managers, senior supply chain practitioners and mayoral committee members were identified as relevant respondents. As a result of purposive sampling, 120 eligible respondents were identified from the two local municipalities under study in the following split, 70 questionnaires were distributed to Emfuleni Local Municipality while 50 questionnaires were distributed to Metsimaholo Local Municipality. Furthermore each unit of study’s questionnaires were further split as detailed in table 3.1.

Table: 3.1: Questionnaires distribution split

Capacity/Position	Emfuleni	Mestimaholo	Total	% of Total
Mayoral Committee members	10	8	18	15%
Senior Managers	10	7	17	14%
Managers	25	20	45	38%
Assistant Managers	15	10	25	21%
SCM Practitioners	10	5	15	12%
Total	70	50	120	100%

Based on the literature, a six page research instrument comprised closed ended questions was developed. These closed questions were measured using Likert scale. The Likert scale was chosen because it measured the opinions under investigation with strongly agree (1) to strongly disagree (4) response scales. Furthermore, the scales simplified the scoring procedure by using whole numbers (i.e. 1, 2, 3, and 4) for each variable in the questionnaire. A Likert scale was also regarded as appropriate in this study as it widely used in survey research (Neumann, 2006). The research instrument covers the demographic profiles of the respondents and structure in such a way that is split into sections. These sections are structured in such a way that they address the objectives of the study. This research instrument was initially reviewed by the North-West University Statistical Services department in order to assess their relevancy in achieving the objective of the research. Their feedback was used to modify the research instrument.

Primary and secondary data collection methods were implemented. Secondary data were based on the existing literature and legislations impacting on demand management as one of the first elements of the supply chain management, while primary data were collected through a self-administered questionnaire.

Convenient sampling was used. Data were collected using a survey, through which hand delivering of questionnaires to the respondents was preferred. In this case the respondents and the researcher come into contact with each other. The questionnaires were physically distributed to the respondents with a request to return it after completion to the office of the chief financial officer in the case of Emfuleni Local Municipality and to the office of the municipal manager in the case of Metsimaholo Local Municipality. The distribution was carried out in such a way that five packs marked with the position occupied by the level responsibility were developed. The first pack was marked for the mayoral committee members, the second was for

the senior managers, the third pack for managers, the fourth pack for the assistant managers, and the fifth pack, being the last, was marked for supply chain practitioners. Each questionnaire was hand delivered to the relevant respondent depending on the position or capacity.

3.3 RESPONSES TO THE SURVEY

The purposive sampling technique was used to identify the respondents in this study. A total of 98 out of 120 questionnaires issued were received back. After scrutinizing the returned questionnaires, 5 (five) questionnaires split into 2 (two) from Emfuleni Local Municipality and 3 (three) from Metsimaholo Local Municipality, were removed due to being incomplete. These 93 questionnaires (52 – Emfuleni Local Municipality and 41 – Metsimaholo Local Municipality) were then submitted for analysis. The end result was that from the 120 questionnaires distributed, a total of 93 respondents completed the questionnaire, this represent a final response rate of 78%.

3.4 RESULTS OF THE DEMOGRAPHIC DATA

The questionnaire is divided into four sub-sections, namely: gender, race, age, qualifications and finally position held.

3.4.1 Gender of the respondents

- **Purpose of the question:** Purpose of the question (i) in Section A of the questionnaire was to determine and differentiate the number of males and female respondents.
- **Results obtained:** Table 3.2 represents the combined gender of participants from both municipalities.

Table 3.2: Gender distribution of participants

<u>Gender</u>	<u>Frequency (N)</u>	<u>Percentage</u>
Males	62	67%
Females	31	33%
Total	93	100%

- **Analysis of results:** The above table indicates the ratio of males (67 percent) to that of females (33 percent). This further indicates that majority of people at strategic positions in both municipalities are males.

3.4.2 Race of respondents

- **Purpose of the question:** Purpose of the question (ii) in Section A of the questionnaire was to determine and differentiate race of the respondents.
- **Results obtained:** Table 3.3 represents the combined race of participants from both municipalities.

Table 3.3: Race distribution of participants

Race	Frequency (N)	Percentage
Black	74	81%
Indian	1	1%
White	16	18%
Total	91	100%

- **Analysis of results:** The above table indicates the ratio of blacks (81 percent) to that of Indians (1 percent) and Whites (18 percent). This further indicates that the majority of people at strategic positions in both municipalities are blacks, followed by whites.

3.4.3 Age of respondents

- **Purpose of the question:** Purpose of the question (iii) in Section A of the questionnaire was to determine the age group classifications of the respondents and for the purpose of this study it is predefined in four age groups as per table 3.4 below.
- **Results obtained:** Table 3.4 represents the combined age group classification of all participants from both municipalities.

Table 3.4: Age groups of participants

Age (Years)	Frequency (N)	Percentage
35 and less	10	11%
36 – 45	36	40%
46 - 55	33	36%
56 and over	12	13%
Total	91	100%

- **Analysis of results:** The above table indicates that 11 percent of all participants were 35 years of age and below. This indicates the extent of youth participation in the strategic position of the municipalities. The two middle groups combined add up to 76 percent and it represent the matured group that will provide strategic direction to the municipality until retirement. The last group is almost that of retired participants, retained due to experience accounts for 12 percent.

3.4.4 Highest Qualification attained

- **Purpose of the question:** Purpose of the question (iv) in Section A of the questionnaire, was to determine the highest qualification attained by each respondent. Formal qualifications have a impact on the way strategic people think and make business decisions.
- **Results obtained:** Table 3.5 represents the combined highest qualification attained by respondents from both municipalities.

Table 3.5: Highest qualification attained by the participants

Qualifications	Frequency (N)	Percentage
Certificate	10	11%
Diploma	35	38%
Degree	36	39%
Post graduate	12	12%
Total	93	100%

- **Analysis of results:** The highest qualifications attained by the respondents in this study indicate that 11 percent are certificated, 38 percent have diplomas, 39% have degrees and 12% have post graduate degrees.

3.4.5 Position held

- **Purpose of the question:** Purpose of the question (v) in Section A of the questionnaire was to determine the percentage of participants occupying influential position in each municipality.
- **Results obtained:** Table 3.6 represents the position occupied by each respondent within both municipalities.

Table 3.6: The position held by the participants

Position occupied	Frequency (N)	Percentage
Mayoral Committee Member	12	12%
Senior Manager	15	16%
Manager	31	33%
Assistant Manager	21	23%
Supply Chain Practitioner	14	15%
Total	93	100%

- **Analysis of results:** The table above indicates that 12% of the mayoral committee members responded to the questionnaires, 16% senior managers, 33% managers, 23% assistant managers and 15% supply chain practitioners. The bulk of these responses come from the managers and their assistants, since they are the ones entrusted with the operations of the municipalities.

3.5 STATISTICAL ANALYSIS

The statistical analysis was carried out with the help of the Statistical Packages for the Social Studies (SPSS) Release 8 for Windows program. SPSS is one of the mostly used and comprehensive statistical programs in the social sciences. The great advantage of using the package is that it will enable the scoring and analyse quantitative data very quickly and in many different ways (Bryman *et al.*, 1999:16). Cronbach's alpha coefficient was used to assess the reliability of the measuring instrument. Accordingly descriptive statistics which gives the researcher the opportunity to organise data in a more meaningful way was also used (Burns *et al.*, 1998). The arithmetic mean and the standard deviations carry out the description and comparison of the results. The arithmetic mean is the best measure of central tendency and it is used to indicate the mean (average) score of the study population on the questionnaire. Arithmetic mean is easy to understand and to interpret, which heightens its appeal. However its chief limitation is that it may be unduly be affected by very high or very low values which can respectively increase or decrease its magnitude (Bryman *et al.*, 1998:82). Standard deviation

indicates the distance of all individual scores for the arithmetic mean (i.e. measure of dispersion). The higher the standard deviation, the greater the distance is on average, from the arithmetic mean.

Practical significance (effect size) in combination with statistical significance (p-value) was also used to know whether a relationship between the variables are practical significant and to consider whether the results are statistically significant, respectively.

The Spearman Rank Order Correlation coefficient (ρ) is a non-parametric measure of the strength and direction of association that exists between two variables measured on at least an ordinal scale (Bryman & Cramer, 1999:186). It is based on the premise that there is a monotonic relationship between the variables. A monotonic relationship is a relationship that does one of the following: (1) as the value of one variable increases so does the value of the other variable or (2) as the value of one variable increases the other variable value decreases. The relationship can either be positive or negative. A positive relationship is assumed when a decline in the measurement of one variable also leads to the decline of the other. With a negative relationship a decline in the measurement of one variable would lead to an increase in the other (Fergusson, 1981).

3.6 RELIABILITY OF THE MEASURING INSTRUMENT

The reliability of a measure refers to its consistency. However, for the purpose of this study, Cronbach's alpha (α) was used to determine the internal consistency of the instrument. According to Field (2005:666) an instrument that produces different scores every time it is used on the same person under the same conditions has a low reliability. The Cronbach alpha coefficient is based on the average correlation of variable within a test (SAS Institute, Inc.2005:295). The larger the Cronbach alpha coefficient, the more reliable is the scale. If Cronbach alpha coefficient is larger than 0.7, it could be interpreted a reliable and internally consistent (SAS Institute, Inc.2005).

The Cronbach alpha coefficient were calculate using SPSS program in order to establish the internal consistency between the items of the questionnaires - refer to table 3.7.

Table 3.7: Cronbach alpha coefficient of constructs

CONSTRUCT	CRONBACH (α)	MEAN
Sustainable Service Delivery	0.7	1.6
Demand Management	0.8	2.0
Change Management	0.6	1.7

The Cronbach alpha coefficient of sustainable service delivery is exactly equal to the cut-off point of 0.7, which imply that the questionnaires used in this study to measure the latent variables have acceptable reliability and are internally consistent, while that of demand management is above the cut-off point which then also imply that the questions used to measure the construct are more reliable and are internally consistent. The Cronbach alpha coefficient of change management is less than the cut-off point of 0.7; however, its arithmetic means is 1.7. This implies that despite the unacceptable reliability of the questionnaire, there was relatively high agreement with the statements concerned with the perceived role played by change management in any intervention. Similarly, arithmetic means associated with sustainable service delivery and demand management were 1.6 and 2.0 respectively, which also reflect relatively high agreement with the questionnaires posed for those variables.

3.7 DESCRIPTIVE ANALYSIS

3.7.1 Discussion on frequency of the responses

3.7.1.1 Sustainable Service Delivery Construct

Table 3.8: Frequency table for sustainable service delivery

Statement	Strongly Agree		Agree		Disagree		Strongly Disagree	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
1	62	66.7%	30	32.3%	1	1.1%	0	0.0%
2	73	78.5%	20	21.5%	0	0.0%	0	0.0%
3	52	55.9%	41	44.1%	0	0.0%	0	0.0%
4	40	43.0%	46	49.5%	6	6.5%	1	1.1%
5	49	52.7%	41	44.1%	3	3.2%	0	0.0%
6	37	39.8%	49	52.7%	6	6.5%	0	1.1%
7	59	63.4%	34	36.6%	0	0.0%	0	0.0%
8	20	21.7%	58	63.0%	13	14.1%	1	1.1%
9	47	50.5%	39	41.9%	6	6.5%	1	1.1%
10	27	29.0%	57	61.3%	9	9.7%	0	0.0%

Table 3.8 indicates the responses to ten statements raised to corroborate the importance of sustainability in attaining superior long term performance by the municipality. The results show the frequency of responses and the corresponding percentages. An examination shows that 100% of the respondents believe that sustained service is a key to long term performance of municipalities, and for this to be achieved, skill (84.7%), empowerment of staff (92.5%), user satisfaction (92.4%) demand responsiveness (90.3%) and batho pele principle (92.5%) have to be distinguishing factors within the system. However, 96.8% of the respondents indicated that continued delivery of quality service to all households and not just some, will lead to sustainable service delivery. They also indicated that service delivery is about making sure that service reach those people intended for (100%). Furthermore they indicated that communities protest

because of dissatisfaction with the level of basic service delivered (98.9%), which in turn is viewed as basic to the mission of all municipalities (100%). All of the responses for this variance have a mean and standard deviation less than the basic mean and standard deviation established in table 3.2 above.

3.7.1.2 Demand Management Construct

Table 3.9: Frequency table for demand management

Statement	Strongly Agree		Agree		Disagree		Strongly Disagree	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
16	24	25.8%	64	68.8%	5	5.4%	0	0.0%
17	51	54.8%	41	44.1%	1	1.1%	0	0.0%
18	5	5.4%	15	16.3%	48	52.2%	24	26.1%
19	2	2.2%	6	6.5%	45	46.4%	40	43.0%
20	1	1.1%	1	1.1%	51	54.8%	40	43.0%
21	1	1.1%	3	3.2%	31	33.3%	58	62.4%
22	21	22.6%	59	63.4%	12	12.9%	1	1.1%
23	18	19.4%	59	63.4%	15	16.1%	1	1.1%
24	60	64.5%	31	33.3%	2	2.2%	0	0.0%
25	53	57.0%	38	4.09%	2	2.2%	0	0.0%

Table 3.9 indicates the responses to the statements raised to corroborate the fact that effective usage of demand management enables sustainable service delivery. The results show the frequency of responses and the corresponding percentages. The table indicates that the majority of the questions were frequently agreed with, except the statement questioning the existence of effective system of demand management within the municipalities currently. *The responses in this regard indicate that municipalities do not have effective systems of demand management in place that will enable service delivery.*

3.7.1.3 Change Management Construct

Table 3.10: Frequency table for change management

Statement	Strongly Agree		Agree		Disagree		Strongly Disagree	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
1	35	38.0%	54	58.7%	3	3.3%	0	0.0%
2	32	34.8%	55	59.8%	4	4.3%	1	1.1%
3	70	76.1%	19	20.7%	3	3.3%	0	0.0%
4	20	21.7%	57	62.0%	14	15.2%	1	1.1%
5	73	79.3%	17	18.5%	2	2.2%	0	0.0%
6	25	27.1%	41	44.6%	26	28.3%	0	0.0%
7	34	37.0%	50	54.3%	8	8.7%	0	0.0%
8	70	76.1%	21	22.8%	0	1.1%	0	0.0%
9	20	21.7%	35	38.0%	30	32.6%	7	7.6%
10	16	17.4%	55	59.8%	19	20.7%	2	2.2%

Table 3.10 indicates the responses to the statements raised to corroborate the fact that change management as a construct plays a pivotal role in the implementation of a demand management system, which will then lead to sustainable service delivery. The results show the frequency of responses and the corresponding percentages. The table indicates that the majority of the responded agree to the statements raised that they support the fact that change management as an intervention will lead to the successful implementation of demand management when properly applied, collectively.

3.7.2 Discussion on arithmetic mean and standard deviation

The Likert scale type questionnaire used to capture participants responses in this study represent agreement with the statement when the score is low, meaning closer to one (1). When the number is relatively high, it represents disagreement with the statement made in question. Thus, a lower number representing agreement with the statement suggests that the statement is perceived to be true by the respondents. Likewise, a high number representing disagreement with the statement is perceived to be false. Likert scale indicators used for the purpose of this study are as follows:

- 1 = Strongly agree
- 2 = Agree
- 3 = Disagree
- 5 = Strongly disagree.

Table 3.11 below represents the average mean (\bar{X}) and the standard deviation (s) of each of the three constructs, however, the more detailed results of the means and standard deviations of each question per the construct is included as appendix (**Appendix A**)

Table 3.11: Average arithmetic mean and standard deviation of the constructs

CONSTRUCT	ARITHMETIC MEAN	STANDARD DEVIATION
Sustainable Service delivery	1.55	0.565
Demand Management	1.95	0.602
Change Management	1.71	0.617

Table 3.12 indicates that the average mean score of all the constructs vary somewhere between strongly agree to agree. Since the means of all the constructs are low, implies that the statement is relatively perceived as true by the respondents. When further analysing each construct in detail, it is found that the mean of the sustainable service delivery construct ranges from the lowest of 1.27 (standard deviation: 0.494) to the highest mean of 2.04 (standard deviation: 0.550). Likewise, that of demand management range from the lowest of 1.27 (standard deviation: 0.494) to the highest of 3.57 (standard deviation: 0.615). This indicates that some of the statements resulted into the responses that are perceived as disagreeing, particularly, statements related to the questions of existence of the effective systems of demand management posed to the respondents. In a nutshell, respondents disputed the fact that their

respective municipality do not have an effective system in place that will ensure sustainable service delivery. Finally, the mean of change management construct ranges from as low as 1.23 (standard deviation: 0.471) to the highest of 2.26 (standard deviation: 0.888). This implies that the statements relating to change management as a whole were perceived as true by the respondents.

3.8 RELATIONSHIP BETWEEN THE CONSTRUCTS

3.8.1 Practical significance (effect size) in combination with statistical significance (p-value)

In order to determine whether the effect of the relationship between the three constructs is important or meaningful, the size of the effect should be measured. Effect sizes are useful because they provide an objective measure of the importance of an effect (Field, 2005:32). According to Ellis and Steyn (2003:54), Cohen (1998) gives the following guideline values for the interpretation of the effect size:

- Small effect: $d = 0.2$
- Medium effect: $d = 0.5$
- Large effect: $d = 0.8$

Consider the data where $d \geq 0.8$ shows practical significance. Since it is the result of a difference having a large effect. The practical significance of the results is not only important when the results of population data are reported, but also to comment on the practical significance of statistical significant results in the case of random samples from a population (Ellis and Steyn, 2003:55).

Furthermore, a statistical significant test with a small p-value (i.e. smaller than 0.05) is considered as sufficient evidence that the results are statistically significant. Statistical significance does not necessarily imply that the result is important in practice as these tests have a tendency to yield small p-value as the sizes of the data sets increase (Ellis & Steyn, 2003:51).

Table 3.12: Effect size and p-value

Construct	N	Mean	Std Deviation	p value	Effect size
Sustainable Service Delivery				0.229	0.23
- Metsimaholo	41	1.60	0.267		
- Emfuleni	52	1.52	0.309		
Demand Management				0.025	0.41
- Metsimaholo	41	2.02	0.205		
- Emfuleni	52	1.90	0.272		
Change Management				0.018	0.50
- Metsimaholo	40	1.80	0.304		
- Emfuleni	52	1.65	0.292		

Table 3.12 presents the results of the practical significant and statistical significant between the three constructs of sustainable service delivery, demand management and change management. The practical significant differences of sustainable service delivery (0.23) and demand management (0.41) are more than 0.2 but less than 0.5, which simply imply that there is no practical significant, since it is the result of a difference having a small to medium effect. Similarly, change management has a practical significant of 0.5, which also implies that there is no practical significant since it is the result of a difference having a medium effect. In short, there is no practical significant difference between sustainable service delivery, demand management and change management since none of the constructs have a d-value more than 0.8 ($d \geq 0.8$).

It is evident from table 3.13 above, that the sustainable service delivery p-value is larger than 0.05, while that of demand management (0.025) and change management (0.018) are less than a p-value of 0.05. This means that both p-values of demand management and change management are considered as sufficient evidence that the result is statistically significant; similarly, the result of sustainable service delivery is considered not statistically significant.

3.8.2 Correlation between the constructs

Table 3.13: Spearmans' Order Rank Correlation coefficient

	Sustainable Service Delivery	Demand Management	Change Management
Sustainable Service Delivery			
Correlation Coefficient	1.000	0.547	0.345
Sig. (2-tailed)		0.000	0.001
N	93	93	92
Demand Management			
Correlation Coefficient	0.547	1.000	0.419
Sig. (2-tailed)	0.000		0.000
N	93	93	92
Change Management			
Correlation Coefficient	0.345	0.419	1.000
Sig. (2-tailed)	0.001	0.000	
N	92	92	92

Table 3.13 presents the results in a matrix so that the correlations are replicated. This table represent Spearmans' Order Rank Correlation, its significant value and the sample size that the calculation was based on. All of the correlations reported in table 3.14 are large and they are statistically significant at the level of 0.01. Thus; there is a tendency for demand management together with change management to enable sustainable service delivery.

3.9 SUMMARY

In this chapter, the results of the empirical study were reported and discussed. The purpose of and the responses to the survey were clarified and discussed. The demographic data of the survey instrument was analysed and interpreted. The statistical analysis was achieved through the help of Statistical Packages for the Social Studies (SPSS), and Cronbach alpha coefficient was reported and discussed in order to assess the reliability of the survey instrument. Descriptive statistics were also presented and discussed to indicate the level of agreement or disagreement by the respondents to the survey questionnaire. Lastly, the relationship between the constructs, namely, sustainable service delivery, demand management and change

management were presented and discussed with the help of practical significance (effect size), statistical significance ($p = \text{value}$) and Spearmans' Rank Order Correlation coefficient.

The objective set for this chapter, namely that of discussing the results of the survey and to be able to draw conclusions from it has been achieved, according to the researcher.

In **chapter 4** conclusions, limitations regarding this study, recommendations and possible future research on the study will be made.

CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS

4.1 INTRODUCTION

In this chapter, conclusion and recommendations on the effective usage of demand management will be presented, based on the factors that ensures sustainable service delivery as evaluated during the literature review study (**chapter 2**) and the empirical study (chapter 3).

Evaluation will be done to determine if the primary and secondary objectives, as identified in **Chapter 1**, were realised. Recommendations for future research will be made and will be concluded with the summary of the study.

4.2 CONCLUSIONS ON THE EMPIRICAL STUDY

The empirical study was undertaken using two local municipalities, namely Emfuleni Local Municipality located at Vanderbijlpark in Gauteng Province and Metsimaholo Local Municipality located at Sasolburg in the Free State Province. Based on the literature presented in chapter 2 and the results of the empirical study presented in chapter 3, it is now possible to draw conclusions on the effective usage of demand management in enabling sustainable service delivery in a local municipality. The conclusions are drawn based only on the most significant findings as analysed in chapter 3.

4.2.1 Conclusion flowing from the demographical data analysis

A total of 93 (52: Emfuleni Local Municipality and 41: Metsimaholo Local Municipality) people entrusted with the responsibility to implement and execute strategic plans of the municipality participated in the research. Demographical factors such as gender, race, age, qualifications attained by participants and the position or capacity held by each participant in the municipality, were analysed. The important conclusions on the demographical analysis will be discussed below.

Males from both municipalities account for 67% of people in strategic positions while females only account for the difference. It is clear that males dominate strategic positions in both municipalities. It can be concluded that females are overlooked as possible role players in strategic positions and that they should be considered if the municipality want to comply with the balancing of employment equity as required by the Department of labour.

Blacks from both municipalities account for 81% of people in strategic positions, the balance of the percentage in made by whites (18%) and Indians (1%). It is clear that blacks dominate strategic positions in both municipalities. This can be attributable to the political party ruling in

that municipality. It can be concluded that other races are overlooked as possible role players in strategic positions and should be considered when employment equity plans are developed.

The strategic position of both municipalities is occupied by people who are between 35 years of age and 55 years of age, while the lower and the higher level of the ages is occupied respectively by the youth and the people who are close to retiring,. It is clear that youth are overlooked as possible role players in strategic positions by both municipalities. In conclusion, municipalities should start to involve more youth in senior positions if they intend to address the threat of succession; however, these young people should have relevant qualifications and be mentored by qualified and experienced people.

The level of formal education may have an impact on the way decisions are made, and also in management of the municipality. The analysis indicate that 51% of the participants from both municipalities have university and post graduate degrees, while certificates and diplomas account for 49%. It is clear that almost 50% of the participants are in the better position to ensure that municipalities are built on a solid platform of expertise, skills and knowledge. In conclusion, municipalities should ensure that more of their employees are encouraged to better their qualifications, rather than employing people who enter with high qualifications. This will result in up-skilled and empowered employees who will in the long run become the key to sustained, superior, long term performance of the municipality.

In terms of the analysis, it is clear that the lesser the percentage of participants occupying senior positions, the more the percentage of participants occupying the junior position becomes. This means that more people are needed at an operational level than at a more senior strategic level. In conclusion, municipalities must ensure that those junior managers are empowered and delegated with more responsibilities so that they can make decisions that will not hamper service delivery.

4.2.2 Conclusion flowing reliability of the measuring instrument

Reliability of a measure refers to its consistency. For the purpose of the study, Cronbach alpha coefficients of the constructs were calculated in order to establish the internal consistency between the items of the questionnaire. Cronbach alpha coefficient is based on the average correlation of variables within a test (SA Institute, Inc., 2005:295). The larger the Cronbach alpha coefficient, the more reliable is the scale. If Cronbach alpha coefficient is larger than 0.7, it could be interpreted as reliable and internally consistent (SAS Institute, 2005). The Cronbach alpha coefficient of both sustainable service delivery and demand management are recoded as 0.7 and 0.8 respectively. The one is exactly the same as the cut-off value, while the other is more that the cut-off value. This suggests that the questionnaires used in this study to measure

both constructs, have acceptable reliability and is internally consistent. However, Cronbach alpha coefficient relating to change management as one of the constructs is less than the cut-off value, which simply implies that the questionnaire used is not acceptable as reliable and internally consistent. However, the removal of any question except question 9 of section D would result in a lower Cronbach's alpha, therefore, one does not want to remove these questions. Removal of question 9 would lead to a small improvement in Cronbach's alpha and we can also see that the **Corrected Item-Total Correlation** value was low (0.141) for this item (**Appendix B.2**). This led us to consider that we should remove this item in order to achieve a Cronbach alpha of 0.668, which can be rounded off as 0.7.

4.2.3 Conclusion flowing from the analysis of constructs

During the literature review in **Chapter 2**, it was clearly highlighted that various constructs have an influence in delivering service that is acceptable to the communities. The highlighted construct are sustainability, demand management and change management. Overall, the score on all the constructs were within the strongly agree (1) to agree (2) on a scale of 4 point Likert scale classified as follows:

- Strongly agree = 1
- Agree = 2
- Disagree = 3
- Strongly disagree = 4

These results indicated that strategic people at both municipalities have a positive perception of the factors contributing to sustainability, demand management and change management in enabling delivery of service in a local municipality.

The mean of all constructs have been calculated as being 2 and below, while the standard deviations are close to +1 (**table 3.11**). This implies that all the constructs have an important role to play in enabling service delivery.

4.2.4 Conclusion flowing from the effect size analysis.

The purpose of effect size analysis was to determine meaningfulness of the effect of relationship between the three constructs in as far as the practical significance ($d \geq 0.8$) and statistical significance ($p\text{-value} \leq 0.05$). From **table 3.12**, it was clear that most (except for sustainability – factor 0.229) variables had a $p\text{-value} > 0.05$, which implies that the differences in means are statistically significant. Furthermore, table 3.13 indicates that all of the variance are

practical significant because they all have effect sizes ranging between small effect of $d = 0.20$ to medium effect of 0.50 . This implies that the effect of the difference range from a small effect to a medium effect of the practical significant. Generally, it is concluded that there are not many differences between the results of the constructs highlighted.

4.2.5 Conclusion flowing from the relationship between the constructs.

Table 3.13 clearly indicates that the relationship of all the variables is closer to $+1$, which means a stronger relationship. However, the relationship between demand management and sustainable service delivery is much stronger than the relationship between sustainable service delivery and change management, while that of demand management to change management is better compared to the latter. To conclude - there is a strong relation between the variable, which means that there is a tendency for demand management if when used effectively and implemented through change management principle will lead to enabled sustainable service delivery.

4.3 RECOMMENDATIONS

The primary objective of the study is to formulate recommendations that will enable sustainable service delivery by means of effectively using demand management.

The recommendations below are based on the analyses that were done and conclusions that were drawn from the information gathered from the literature review and empirical study. The recommendations are as follows:

Sustainable service delivery

- During the literature review, five distinguishing characteristics (**figure 2.2**), which are not applied by both municipalities as performance indicators to ensure that sustained service is achieved, were identified.

Recommendation: Both municipalities that took part in the study, should build in the characteristics of sustained services as highlighted in this study as part of the performance indicators on their annual performance plans and report on them on a regular basis.

Demand management

- Management of relationships, in particular, where the customers and suppliers were found to be the most important tools of effective demand management as per the

literature review, while the results of the empirical study revealed it as crucial in enabling sustainable service delivery.

Recommendation: Management of relationship should be reflected on the broad annual performance plan of the municipality in order to achieve demand management systems which are effective.

- Forecasting is deemed as a necessary element of managing demand, whereby its benefits are highlighted as (1) providing vendors with more accurate data, (2) improves efficiency in operations, (3) reduce inventories and (4) enhances customer services (Kierly, 1998/1999). It is proved to be crucial during the empirical review in achieving sustained services.

Recommendation: Municipalities should consider this factor in forecasting their budgetary process and the integrated development process as a tool which will provide information on the analysis of the market and needs of the municipality.

- The analysis of the results of the study revealed that in both municipalities, effective demand management that can be achieved through the application of Kearney's six step demand management approach, does not exist. Participants react on the existence of the demand management system in their respective municipalities, negatively to all questions.

Recommendation: Municipalities should develop and implement effective demand management systems that are based on the approach highlighted by Kearly (**figure 3.3.**). These will have the benefits of being (i) abler to set priorities and to measure the potential impact of demand management on the entire organisation, (2) reducing costs or eliminating demand, (3) more able to identify ways to reduce costs or demand, (4) providing an effective procurement system, and (5) better management of resources.

Change management

- The results of empirical study have revealed that change management principles are scarcely applied in any operational intervention by both municipalities.

Recommendation: Municipalities should start applying the principles of change management in order to eliminate resistance by the users against the system to be implemented. Furthermore, they should develop a communication strategy that will built excitement across the broader organisation.

4.4 CRITICAL EVALUATION OF THE STUDY

The measurement of the success of this study is based upon the achievement of the primary and secondary objectives, as indicated in **Section 1.3** of this study.

4.4.1 Primary objective.

The primary objective of this research was to reflect that by effectively using demand management, sustainable service delivery is enabled in a local municipality. The achievement of this objective was depended upon the realisation of the secondary objectives.

4.4.2 Secondary objectives

As indicated in **paragraph 1.3.2**, the secondary objectives have to be met first so as to achieve the primary objective. The following secondary objectives were formulated and achieved:

- To evaluate the factors that ensures long term sustainability of service delivery: This objective has been achieved through empirical study. This is indicated by the strongly agreed to agreed responses on the application of Batho Pele principle, importance of skill, satisfaction of users with the services and the demand responsiveness of the service delivered by the participants.
- To determine whether sustainable service delivery is key to long term performance of the municipality: The response to this objective add up to 100% of all the participants who agreed that sustained service delivery is a key to superior long term performance of the municipality. This implies that the objective was achieved.
- To assess and evaluate the tools that prove that effective demand management is crucial to sustainable service delivery: According to the literature study, the following tools, namely, relationship, forecasting and cost management were highlighted. The results of the empirical study indicated that relationship and forecasting plays a crucial role in enabling sustainable service delivery. Therefore this objective was also achieved.
- To assess the extent to which an effective demand management system is applied in a local municipality: The results of the empirical study has indicated that respondents disagree to the fact that their respective municipality's demand management system provide for high-quality information flow that supports decision making for service delivery, and that their organisational demand management processes are well defined. Furthermore, they do not use performance that rewards behaviour which on their turn, improves demand management performance. Finally, their respective municipality has not developed demand management to a core competency. These findings indicate that

demand management systems are not applied the way it should be for the benefit of achieving sustainable service delivery.

- To evaluate whether demand management enhances/enables service delivery: As to this objective, the results of empirical study indicated that 82.8% respondents agreed that demand management, if applied effectively, will enhance or enable service delivery. Hence the objective is achieved.
- To evaluate the importance of the change management principle in achieving the benefits associated with implementation of demand management: The results of the empirical objective also indicated that 77.2% of the respondents agreed on this objective. This implies that the objective as stated above was achieved.

The conclusion can thus be made that all of the secondary objectives were achieved. Therefore, based on the realisation of the secondary objectives, it can be concluded that the primary objective of this study was achieved.

4.5 FUTURE RESEARCH

There is limited research done on demand management as an element of supply chain management, in particular within the local municipalities. The following are some of the recommendations for future research studies:

- The study highlighted three tools which lead to effective demand management and further indicated that they can improve operational efficiency. Future study could focus on how exactly these tool, effective demand management can benefit the organisation.
- Five distinguishing characteristics of sustained service delivery were also highlighted in this study, but not much investigation has been done on them. Future study could focus on investigating them further to ensure their applicability in practise.
- Kearly developed a six step demand management approach which can provide certain benefits if applied effectively. Future studies can focus in details on the benefits to be derived when those demand management approach is adopted.

4.6 SUMMARY

In this chapter, conclusions and recommendations were drawn based on the effective usage of demand management in enabling sustainable service delivery, as indicated during the literature review in **Chapter 2** and the empirical study that was conducted in **Chapter 3**.

A survey questionnaire has been administered to strategic people entrusted with the responsibility of implementing the strategic plan of the two municipalities namely, Emfuleni Local Municipality and Metsimaholo Local Municipality.

The total number of strategic officials who participated in the study came to 93, from which 52 were from Emfuleni Local municipality and 41 from Metsimaholo Local Municipality. The demographic factors were analysed and conclusions were drawn based on the statistics. It is explained in **paragraph 3.4** of this study.

The statistical analysis approach was discussed in **paragraph 3.5**. The reliability and internal consistency of the questionnaire was analysed by means of Cronbach alpha coefficient and the conclusion was presented in **paragraph 4.2.2**.

The data relating to the constructs, namely sustainability, demand management and change management were analysed in **paragraph 3.7** and the conclusion was presented in **paragraph 4.2.3**. The relationship between the construct was discussed through effect size and correlation of coefficient and the conclusions were presented in **paragraph 4.2.4 and 4.2.5** respectively.

The literature review and the results of the empirical study were analysed and used as a basis to generate recommendations as reflected by paragraph 4.3. Furthermore, the realisation of the study objectives were tested against the outcomes achieved in the study. The primary objective was achieved subsequently to the achievement of the secondary objectives as depicted in **paragraph 4.1** of this study.

Recommendations for future research on the study of demand management, were made finally. These recommendations include how the tools of effective demand management can benefit the organisation, to further pursue the distinguishing characteristics of sustained services and to further explore the six steps of the demand management approach as cited in the study.

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APPENDIX A: Descriptive Statistics

Statement	N	Minimum	Maximum	Mean	Std. Deviation
Sustainable Service Delivery					
QBN1	93	1	3	1.34	.500
QBN2	93	1	2	1.22	.413
QBN3	93	1	2	1.44	.499
QBN4	93	1	4	1.66	.651
QBN5	93	1	3	1.51	.564
QBN6	93	1	4	1.69	.642
QBN7	93	1	2	1.37	.484
QBN8	92	1	4	1.95	.635
QBN9	93	1	4	1.58	.665
QBN10	93	1	3	1.81	.595
Average				1.55	.565
Demand Management					
QCN1	93	1	2	1.53	.502
QCN2	93	1	4	2.00	.626
QCN3	93	1	3	1.81	.664
QCN4	93	1	3	1.94	.734
QCN5	93	1	3	1.38	.588
QCN6	93	1	3	2.04	.550
QCN7	93	1	3	1.56	.598
QCN8	92	1	3	1.55	.562
QCN9	92	1	3	1.27	.494
QCN10	93	1	3	1.40	.592
QCN11	92	1	3	1.41	.558
QCN12	92	1	4	2.29	.704
QCN13	92	1	3	1.62	.590
QCN14	93	1	4	1.70	.639
QCN15	93	1	3	2.04	.569
QCN16	93	1	3	1.80	.523
QCN17	93	1	3	1.46	.523
QCN18	92	1	4	2.99	.805
QCN19	93	1	4	3.32	.694
QCN20	93	1	4	3.40	.574
QCN21	93	1	4	3.57	.615
QCN22	93	1	4	1.92	.630
QCN23	93	1	4	1.99	.634
QCN24	93	1	3	1.38	.530
QCN25	93	1	3	1.45	.542
Average				1.95	.602

Statement	N	Minimum	Maximum	Mean	Std. Deviation
Demand Management					
QDN1	92	1	3	1.65	.543
QDN2	92	1	4	1.72	.599
QDN3	92	1	3	1.27	.516
QDN4	92	1	4	1.96	.645
QDN5	92	1	3	1.23	.471
QDN6	92	1	3	2.01	.749
QDN7	92	1	3	1.72	.617
QDN8	92	1	3	1.25	.460
QDN9	92	1	4	2.26	.888
QDN10	92	1	4	2.08	.683
Average				1.71	.617

APPENDIX B: Reliability Item – Total Statistics

B.1: Results of Reliability Item – Total Statistics for Sustainable Service Delivery Construct

Statement	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
QBN1	14.18	7.691	.233	.531	.684
QBN2	14.32	7.976	.191	.483	.688
QBN3	14.09	7.795	.194	.184	.690
QBN4	13.87	7.038	.322	.191	.672
QBN5	14.02	7.230	.340	.193	.667
QBN6	13.84	6.556	.488	.405	.636
QBN7	14.15	7.471	.330	.269	.669
QBN8	13.58	6.730	.439	.313	.647
QBN9	13.93	6.611	.446	.324	.645
QBN10	13.72	6.820	.450	.341	.646

B.2: Results of Reliability Item – Total Statistics for Change Management Construct

Statement	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
QDN1	15.49	7.901	.364	.402	.602
QDN2	15.42	8.071	.258	.439	.622
QDN3	15.87	8.159	.300	.410	.615
QDN4	15.18	7.976	.252	.184	.624
QDN5	15.91	7.597	.574	.470	.571
QDN6	15.13	7.323	.352	.260	.602
QDN7	15.42	7.412	.451	.363	.581
QDN8	15.89	8.230	.329	.179	.612
QDN9	14.88	7.821	.141	.105	.668
QDN10	15.07	7.952	.231	.118	.630

B.3: Results of Reliability Item – Total Statistics for Demand Management Construct

Statement	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
QCN1	47.33	37.258	.316	.	.792
QCN2	46.84	36.043	.400	.	.788
QCN3	47.04	36.043	.369	.	.790
QCN4	46.90	36.788	.239	.	.797
QCN5	47.49	35.668	.488	.	.784
QCN6	46.80	36.948	.331	.	.792
QCN7	47.30	36.639	.336	.	.791
QCN8	47.31	36.262	.423	.	.787
QCN9	47.60	36.872	.396	.	.789
QCN10	47.48	37.735	.188	.	.798
QCN11	47.46	36.610	.375	.	.790
QCN12	46.56	35.081	.459	.	.784
QCN13	47.24	36.434	.372	.	.790
QCN14	47.16	35.054	.522	.	.781
QCN15	46.80	36.319	.410	.	.788
QCN16	47.04	38.358	.129	.	.800
QCN17	47.40	37.119	.323	.	.792
QCN18	45.84	36.335	.257	.	.797
QCN19	45.53	36.476	.294	.	.794
QCN20	45.46	36.386	.393	.	.789
QCN21	45.29	37.826	.163	.	.800
QCN22	46.92	36.387	.349	.	.791
QCN23	46.86	37.698	.173	.	.799
QCN24	47.48	37.106	.318	.	.792
QCN25	47.40	37.142	.304	.	.793

APPENDIX C: Survey Questionnaire

Enabling Sustainable Service Delivery by means of effective
Demand Management in a Local Municipality

SURVEY QUESTIONNAIRE

Date Submitted: _____

Date Collected: _____

Municipality: Name of the municipality

GENERAL INSTRUCTIONS

1. Virtually all the questions may be answered by making a cross in the relevant block.
2. Use the following key: **1** = Strongly agree; **2** = Agree; **3** = Disagree; 4 = Strongly disagree.
3. **You must select the number which best describes your honest opinion about the statement.** For example, should you be asked the extent to which you agree with the statement?

“Demand management determine the optimum method to satisfy the community needs”

and you feel that you agree, you will mark the number 2 (**2 = Agree**) as in the example:

1	Demand management determine the optimum method to satisfy the community needs.	1	2 X	4	5
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4. It is essential you indicate your choice clearly with a pen.
5. It is also important that you complete all the questions in the relevant sections.
6. There are no right or wrong answers.
7. Take note that participation in this survey remains anonymous. No form of Identification needs to be provided

Note the statements are grouped into the following sections, namely:

- (i) Section A: Demographic information
- (ii) Section B: Sustainable service delivery;
- (iii) Section C: Demand Management
- (iv) Section D: Change Management

Abbreviations

SA = Strongly Agree	A = Agree	D = Disagree	SD = Strongly Disagree
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SECTION A: DEMOGRAPHIC INFORMATION

Please indicate your response to the following questions by marking question through (i) to (v), where possible, by means of an X.

(i) Gender

Male	1
Female	2

(ii) Race

Black	1
Colored	2
Indian	3
White	4
Other (Specify) _____	5

(iii) Age

What is your age? _____

(iv) Highest Qualifications attained

Grade 2	1
Certificate	2
Diploma	3
Degree	4
Post graduate	5

(v) Position/Capacity

Mayoral Committee Member	1
Senior Manager	2
Manager	3
Assistant Manager	4
Supply Chain Practitioner	5

SECTION B: SUSTAINABLE SERVICE DELIVERY

The questionnaire consists of 12 statements. Please indicate to what extent does you agree or disagree with each statement. Mark the applicable block with a cross (X).

	STATEMENT	SA	A	D	SD
1	Communities protest because of dissatisfaction with the delivery of basic services.	1	2	3	4
2	The provision of service to the citizen is basic to the mission of all municipalities.	1	2	3	4
3	Service delivery is about the making sure that services reach those people intended for.	1	2	3	4
4	Application of Batho Pele principle provides sustainable service to the communities.	1	2	3	4
5	Continued delivery of quality service to all households leads to sustainable service delivery.	1	2	3	4
6	Empowerment of employees leads to sustained services.	1	2	3	4
7	Sustained service delivery is a key to superior long term performance of the municipality.	1	2	3	4
8	A Skill is a distinguishing characteristic of sustainable service.	1	2	3	4
9	User satisfaction is a distinguishing characteristic of sustainable service.	1	2	3	4
10	Demand responsiveness is a distinguishing characteristic of sustainable service.	1	2	3	4

SECTION C: DEMAND MANAGEMENT

The questionnaire consists of 25 statements. Please indicate to what extent does you agree or disagree with each statement. Mark the applicable block with a cross (X).

	STATEMENT	SA	A	D	SD
1	Demand management ensures that the resources required are delivered to those intended for.	1	2	3	4
2	The key goal of demand management is to provide for the smooth functioning of operational activities.	1	2	3	4
3	Demand management provide uninterrupted flow of services for the benefit of the community	1	2	3	4
4	The success of demand management depends on seniors' buy-in.	1	2	3	4
5	The success of demand management depends on process visibility.	1	2	3	4
6	The success of demand management depends on ability to measure outcomes.	1	2	3	4
7	Managing relationships ensures that demand management is crucial in enabling sustainable service delivery.	1	2	3	4
8	The use of forecast ensures that demand management is crucial in enabling sustainable service deliver.	1	2	3	4
9	Demand management addresses the drivers of external spending by eliminating unnecessary consumption.	1	2	3	4
10	Demand management aligns the demand for services with the available resources.	1	2	3	4

	STATEMENT	SA	A	D	SD
11	A high-level assessment of spending categories is crucial in achieving effective demand management.	1	2	3	4
12	Aggressive elimination of demand can be extremely effective in reducing costs.	1	2	3	4
13	The demand drivers are the underlying factors that influence the quantity required.	1	2	3	4
14	Benchmarking is one of the most effective tools to reduce demand.	1	2	3	4
15	Demand management recommendations based on sufficient data allows for reliable analysis.	1	2	3	4
16	A successful implementation of demand management requires continuous monitoring.	1	2	3	4
17	By understanding how the organisation spends money across categories, managers are better able to set priorities to measure the potential impact of demand management on the entire organisation.	1	2	3	4
18	Our demand management system provides for high-quality information flow that supports decision making for service delivery.	1	2	3	4
19	Our municipality's demand management processes are well defined.	1	2	3	4
20	We use performance measurements that reward behaviour that improves demand management performance.	1	2	3	4
21	Our municipality has developed demand management to a core competency level.	1	2	3	4
22	The main benefit of demand management is to enhance sustainability.	1	2	3	4
23	Demand management enhance service delivery.	1	2	3	4
24	Demand management provide for better management of resources.	1	2	3	4
25	Demand management processes provide for effective procurement systems.	1	2	3	4

SECTION D: CHANGE MANAGEMENT

The questionnaire consists of 10 statements. Please indicate to what extent does you agree or disagree with each statement. Mark the applicable block with a cross (X).

	STATEMENT	SA	A	D	SD
1	Change management is the application of tools for managing the people side of change.	1	2	3	4
2	The goal of change management is to manage the 'people' side of the change).	1	2	3	4
3	The challenge of managing change is in communicating the new system in a way that builds excitement across the broader organisation.	1	2	3	4
4	End-to-end organisational change results in successful implementation of new processes.	1	2	3	4
5	Explaining the why's of the new system will lead to employees accepting it if they understand the reason for it.	1	2	3	4
6	By making affected users aware of the alternatives can lessen the perception that a new system is excessively restrictive.	1	2	3	4
7	Success of any new system depends on everyone being kept abreast with the developments.	1	2	3	4
8	Continuous communication is important in keeping employees involved over the long term.	1	2	3	4
9	Change is scarcely applied in any operations intervention.	1	2	3	4
10	Change management practices are important in achieving the benefits associated with implementation of demand management.	1	2	3	4

APPENDIX D: Request for permission

To: The Municipal Manager
Cc: The Mayor & the Speaker

REQUEST FOR PERMISSION TO CONDUCT RESEARCH

I hereby request a permission to use **Name of the local municipality** as a case study for my research as mentioned below. I am currently studying at North West University, Potchefstroom campus, pursuing final year of Masters Degree in Business Administration.

I started with my studies in 2007, whilst I was employed at Emfuleni Local Municipality, as a manager: supply chain management; hence I have chosen this topic for my research.

My research topic is:

Enabling sustainable service delivery by means of effective demand management in a local municipality.

The purpose of the research is to study how demand management can effectively be applied to address the problems of service delivery in a manner which is sustainable in order to fulfill the needs identified in the strategic plan of the municipality.

As research methodology I will employ and utilize empirical research through a structured questionnaire to gather and acquire information. My target population is all the directors, managers, assistant managers and SCM practitioners within your institution. However, you will be informed in advance of the people to be given the questionnaires.

The information obtained will form part of my mini-dissertation to be submitted in partial fulfilment of the requirements for the Masters Degree in Business Administration.

On approval of the research documentation, a copy will be given to your institution as a token of appreciation.

I trust that my request will receive a favourable response.

With regards

2011
Gabriel Tsietsi Banda AGA (SA)

XXXXXXXXX

Date

APPENDIX E: Respond to the request for permission – Emfuleni

11/11/15 10:13AM HP LASERJET FAX 016 931 9932 p.03

Emfuleni Local Municipality



MEMORANDUM

OFFICE OF THE CFO

To: Sam Shabalala
Municipal Manager

From: Mr. A. LAMBAT
Chief Financial Officer
25 July 2011

☎ (016) 950-5429
☎ (086) 518 3929
charnel@emfuleni.gov.za

File Nr.
Ref: Gabriel Banda

Dear Sam,

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

Mr. Banda was apparently an employee of ELM and he is partnering with PWC on the GRAP 17 project. He also recently attended the interview for the Manager: Assets (IPAM). I don't have a problem with his research project provided:-

- It does not give him unrestricted access to the department and personnel.
- The interviews he seeks must be properly coordinated and managed. He must work through my office in this regard.
- I have reservations about his request for any documentation that he might use. This must be requested for via my office and information will only be released subject to my approval.
- I do not want a situation where the person has carte blanche in the Supply Chain Department.
- I am not aware of any other reasons that may preclude him from using ELM for his research.

Regards

A Lambat
Chief Financial Officer

Approved

28/7/11

Serving with passion and commitment

APPENDIX F: Respond to the request for permission - Metsimaholo

11/11/15 10:13AM HP LASERJET FAX 016 931 9932 p.02



METSIMAHOLO

LOCAL MUNICIPALITY
PLAASLIKE MUNISIPALITEIT
LEKGOTLA LA MOTSE

60, Sandringham, 1947
Tel: (018) 973 8313
Fax: (018) 976 5205

Reference no.:
Verwysingsnr.:
Bosnpl:

Enquiries:
Navraag: Mr. T Mosuoane
Pattisiso:

3 October 2011

Mr. Gabriel Tsietsi Banda
35 Olifants River
S.E. 4
Vanderbijlpark
1911

Sir,

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH


We refer to the above matter.

We advise that your request to conduct research in pursuit of your Master of Business Administration degree studies is approved. You may, at your earliest convenience, proceed with arranging meetings with all the relevant officials who may assist with the research.

Lastly, we wish to express our best wishes for success on your studies.

We trust this is in order.

Regards,


X.W. MSWELI
MUNICIPAL MANAGER