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CHALLENGES IN THE PROCUREMENT PROCESS OF HOUSING INFRASTRUCTURE PROJECTS: CASE STUDY OF THE EASTERN CAPE DEPARTMENT OF HUMAN SETTLEMENTS



by

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A treatise submitted in partial fulfilment of the requirements for the Master of Science in Building: Project Management in Construction in the Faculty of Engineering and the Built Environment at the University of the Witwatersrand.

OCTOBER 2018

Declaration

I, Vuyolwethu Fezekile Guma, hereby declare that this is my own work and that it has not been previously submitted to another university or any other institution of higher learning.

Where the work of others has been used, it has been acknowledged.

_____

Vuyolwethu Fezekile Guma

Abstract

This study reports on a quantitative descriptive design that investigates the challenges in the procurement process of housing infrastructure projects in the Eastern Cape Department of Human Settlements. The study compares two procurement strategies utilised in the department with regards to infrastructure related projects. Pretested questionnaires were distributed to 57 participants who were purposely selected consisting of Structural Engineers, Project Managers, Quantity Surveyors and officials working in Finance and Supply Chain Management. Findings of this study revealed that 1) there is a shortage of skills and that most organisations do not implement career programs in the supply chain management and the construction industry. 2) Both management and employees were aware of the procurement challenges in housing infrastructure projects 3) the turn-key procurement method compares favourably to the traditional methods, as the later has less budget variation, thorough planning since the contractors involvement during the initial stages of planning is evident. 4) a lack of clear communication between the department supply chain management and its supplier amongst a host of other factors because they are less supervised/ monitored and that resulted for wasting of time, no productivity, and poor performance. The cause of these problem stems from the lack of an appropriate procurement strategy for projects.

Dedication

All thanks go to the Almighty Father for making it all possible and for being the vital hand that guided and kept me going even at times when I wanted to give up. You gave me the strength of mind, motivation and perseverance.

I express much gratitude to all the research participants for their openness in communicating and expressing their personal opinions and experiences in support of this research.

My appreciation to the academic and non-academic staff of the School of Construction Economics & Management at the University of the Witwatersrand

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To those behind the scenes: I am heavily indebted to the various experts who shaped this research report by offering their time and knowledge to develop this study, my work supervisor. Mr. M.J. Mbambanisi, thank you for allowing me time off at work to attend school, to Dr and Mrs Makaba for allowing me to their home for the duration of the study – I will forever be indebted. ssMy friend Mr. K.K. Mangxaba and work colleague Ms. Liziwe Mabandla, I thank you so much for the continuous support and encouragement. Sister Pendulwa – I owe you much for your role in critiquing the work and making constructive criticism – Ndiyabulela Mamthi – you made my workload lighter.

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List of Abbreviations

CIDB	Construction Industry Development Board
SOPs	Standard Operating Procedures
ECDHS	Eastern Cape Department of Human Settlements
SCM	Supply Chain Management
NHBRC	National Home Builders Registration Council
JCT	Joint Contracts Tribunal
RDP	Reconstruction and Development Programme
PDP	Provincial Development Plan
NMDG	Nations Millennium Development Goals
SIPDM	Standard for Infrastructure Procurement and Delivery Management
RDP	Reconstruction and Development Programme
GEAR	Growth Employment and Redistribution
ASGI-SA	Accelerated and Shared Growth Initiative – South Africa
ISO	International Standards Organisation
PFMA	Public Finance Management Act
PPPFA	Preferential Procurement Policy Framework Act
PPP	Public Private Partnership
LDCs	less Developed Countries
WEF	World Economic Forum
HSDG	Human Settlements Development Grant
FLISP	Finance linked individual subsidy programme

Definition of Terms

Infrastructure: The Oxford Dictionary of Economics (2009) defines infrastructure as; *"The capital equipment used to produce publicly available services, including transport and telecommunications, and gas, electricity and water supplies. These provide the essential background for other economic activities in modern economies; the fact that they are not available or reliable is a characteristic of less developed countries (LDCs) and handicaps their development. Infrastructure services are generally either provided or regulated by the state." (*Infrastructure Development in South Africa and Gauteng, n.d*)*

The Economist's online dictionary*, Economics A-Z* (2012), describes infrastructure as "The economic arteries and veins". The World Economic Forum (WEF) backs this definition of infrastructure as it argues that extensive and efficient infrastructure is critical for ensuring the effective functioning of an economy. Infrastructure is also known in economic terms as gross fixed capital equipment or formation (Infrastructure Development in South Africa and Gauteng, n.d).

Procurement:(ISO 10845-1, 2010) defines procurement as the process which creates, manages and fulfils contracts relating to the provision of goods, services and engineering and construction works or disposals or any other combination thereof (Watermeyer, 2011). The Joint Contracts Tribunal (JCT) defines procurement as a term which describes the activities undertaken by the employer or client who is seeking to bring about the construction or refurbishment of a building.

Challenges: Something that requires a lot of skill, energy and determination to deal with or achieve (Macmillan Dictionary com, 2016).

Procurement Challenges: It is important to note that Supply Chain Management (SCM) is an integral part of procurement in the South African public sector. Therefore, it a tool that is used for the management of public procurement practices. However, despite the employment of SCM as a strategic tool, public procurement in South Africa still faces enormous predicaments (Ambe and Badenhorst-Weiss, n.d).

These entail:

- a lack of proper knowledge, skills and capacity.

- Non-compliance with SCM policy and regulations.
- Inadequate planning and the linking of demand to the budget.
- Accountability, fraud and corruption.
- Inadequate monitoring and evaluation of SCM.
- Too much decentralisation of the procurement system.
- Ineffectiveness of the Black Economic Empowerment (BEE) policy

CHAPTER 1

1.1 Introduction

There is evidence that the Eastern Cape Department of Human Settlements is struggling to develop practical ideas to transform its supply chain management process to improve the operation of the department in its quest to render habitable human settlements to those in need of it. The Eastern Cape Department of Human Settlements (ECDHS) has a mass of multiple contracting forms and procurement strategies compiled by various built environment professionals who have varying opinions on how housing infrastructure projects should be conceptualised and implemented. Amidst these challenges of varying opinions amongst the professionals, there is evidence that environment and rules of engagement keep on changing. Consequently, this is a big problem considering that the department has an essential constitutional obligation to fulfil.

South Africa is currently bogged down by a plethora of legislation, policy and frameworks in the Built Environment. The existence of numerous policies and legislation has created a situation where Human Settlements officials now find it difficult to implement projects effectively. From the experiences of professionals who have been working on numerous housing infrastructure projects, it has been discovered that there is indeed a lack of understanding and skills shortage that is needed to implement projects from the inception stage successfully.

Section 26 of the Constitution of the Republic of South Africa, 1996, enshrines the inalienable right to housing, as follows:

“(1) Everyone has the right to have access to adequate housing (Bill of Rights – Justice Home, n.d).

(2) The state must take reasonable legislative and other measures within its available resources, to achieve the progressive realisation of this right (Bill of Rights – Justice Home, n.d)

In apartheid, South Africa regime public procurement was used to protect the interests of the minority of large, white-owned enterprises. The apartheid regime discriminated against small, medium and black-owned businesses. Tender procedures were formulated in such a way that favoured large firms which were detrimental to the success of "small emerging firms" (Williams, 2012: 71). At the demise of apartheid, it was agreed that public procurement would be utilised to achieve two goals. The first was to promote good governance. The second was to address certain socio-economic objectives. These two goals were to be achieved through the democratisation of the economy, providing employment and business opportunities for those previously excluded from the system. Those excluded from the system included the marginalised and disadvantaged individuals and communities who are commonly referred to as "target groups". Of course, the ultimately powerful interests of the white minority made countless attempts to undermine the non-white owned enterprises in South African procurement.

Following the first South African democratic election of 1994, the Government adopted the Reconstruction and Development Programme (RDP). The RDP is a comprehensive socio-economic policy instrument which aims specifically at eradicating the profoundly entrenched racial inequality of the apartheid regime.

The principles of South Africa's current housing policy stems from the 1994 Housing White Paper. The fundamental policy and development principles introduced by the Housing White Paper remain relevant and guide all development in respect of housing policy and implementation.

On the other hand, the Breaking New Ground (BNG) policy framework unequivocally states that "future housing delivery must create more 'sustainable human settlements". BNG (2004) intended to serve as a comprehensive administrative strategy of the government while ensuring the acceleration of public housing position.

Many projects end up with a wide gap between achieved and expected outcomes. The gap between the expected outcomes and achievement puts value for money of a project at risk (Laryea and Watermeyer, 2014).

Therefore, the challenge in addressing the occurrence of the gap between the achievement and expected outcomes lies in the pace, scale, and quality of delivery of

the project. This should be improved by applying various measures. The measures include expanding the delivery capacity and the utilisation of socially-acceptable alternative technologies. These measures also prove useful in assisting with the mitigation of other restraining factors such as social infrastructure, shortage of material and inaccessibility of construction sites.

Another challenge lies in the fact that the procurement of works is generally regulated and implemented alongside the procurement of goods. The processes involved, however, are very different. The procurement of works involves very long pre-bid and post-bid stages that transverse several technical areas. These include project preparation (pre-bid) and contract management (post-bid), both of which are within the body of knowledge of built environment professionals. A strong case may be made for dealing with the two areas of procurement separately. At the very least it is essential to recognise that different skill sets are needed for procuring construction services to those needed for procuring goods, and that expertise is needed in both. Procurement officials may also not be aware of social or economic development needs. Procurement is often still seen as an administrative function in which compliance with regulations is the most valued performance criterion (Harland et al., 2004). It is for this reason that it may be appropriate for governments to develop and disseminate guidelines on how to incorporate local content policies into procurement decisions (Wells and Hawkins, 2010).

The main advantages of using a management approach to procurement are that the client deals with only one firm. This enables improved coordination and collaboration between designers and constructors, the potential for time savings for the overall project as design and construction activities are overlapped. Under a design and manage form, the contractor assumes risk and responsibility for the integration of the design with construction.

Works packages can be let competitively at prices that are current. They can ensure improved constructability through constructor input into the design. They also ensure that the roles, risks, and responsibilities of all the parties involved are clear. They also accommodate flexibility which allows for changes in design. The main disadvantages of using a management approach to procurement are price certainty not achieved until the final works package has been let, informed and a proactive client is required (Miller,

2009). Poor price certainty, close time and information control required, client must provide a good quality brief to the design team as the design will not be complete until resources have been committed to the project (Construction management and management contracting) and the client loses direct control of design quality which is influenced by the constructors (design and manage) (Miller, 2009).

Corruption is a significant stumbling block in much of the developing world (Olken, 2007. In many instances there are acts of corruption about tax, adding to the cost of providing public services and conducting business. Often, though, the efficiency costs of corruption can be worse. Indeed, it has been suggested that corruption may be a significant cause of the low growth rates of many developing countries (Mauro, 1995). Despite the importance of the problem, the inherent difficulty of directly measuring corrupt activity has meant that there is relatively little evidence, and therefore relatively little consensus, on how to best reduce corruption. One approach to reducing corruption, dating back at least to Becker and Stigler (1974), suggests that the right combination of monitoring corruption and administering punishment can help to control corruption. In practice, however, the very individuals tasked with monitoring and enforcing punishments may themselves become perpetrators of corruption. In such cases, increasing the probability that a low-level official is monitored by a higher-level official could result only in a transfer of corruption between the officials, rather than a reduction of corruption. Whether corruption can be controlled by increasing top-down monitoring in such an environment is both an important empirical question.

An alternative approach to reducing corruption, which has gained popularity in recent years, is to increase grass-roots participation by community members in local-level monitoring. Community participation is now regarded in much of the development community as the key to reduced corruption and improved public service delivery. For example, the entire 2004 World Development Report is devoted to the idea of “putting poor people at the center of service provision. The strategy of putting poor people at the center of service provision enables them to monitor and discipline service providers. This strategy also creates an ideal situation where their voices are heard when it comes to policymaking. This strategy also strengthens incentives for service providers to serve the poor” (World Bank, 2004). The idea behind the grass-roots approach is that community members being the people who benefit from a successful program, may obtain better incentives to monitor corruption than disinterested central

government bureaucrats (Stiglitz, 2002). This community involvement in monitoring corruption has potential drawbacks, for example, monitoring public projects is a public good, so there may be a severe free-rider problem (Olken, 2007). The study will also attempt to complement the findings by comparing the efficiency of two procurement strategies being utilised by the department to procure infrastructure-related projects, namely turn-key strategy and the traditional strategy. The Turn-key is the method whereby the main contractor will be directly appointed by the department and is expected to appoint his own team of professional. They submit a proposal to the client. In the case of the traditional method, the department appoints an engineering consultant to do pre-planning and planning studies. At a later stage, the department then appoints a contractor to do the actual construction. In essence, separate contracts are provided for all the parties.

1.2 Background of the Study

Infrastructure projects are not implemented successfully since the procurement strategies are not correctly aligned with the project objectives. According, to the World Bank (2009), the procurement of infrastructure projects poses challenges that are not found in other areas of public procurement. The primary reason for this is that infrastructures are highly complex and customised. Therefore, it requires not only economic but also political, social and environmental considerations from a long-term perspective (World Bank, 2002). International evidence indicates that cost overruns occur in approximately 73% of infrastructure projects (Dahdal, 2010). In Pakistan the demand for infrastructure is massive. However, the resources in Pakistan are not enough to meet this demand (Noor et al., 2012).

To enable economic growth and to unblock the potential of Africa, Africa's regional infrastructure will have to be significantly improved (De la Harpe, 2015). This will happen mainly through investment in infrastructure by the individual states and regional economic communities themselves, assisted by the private sector and foreign aid (World Bank, 2009). The World Bank's study further notes that until recently many countries in Africa did not or do not have well developed public procurement regimes

(World Bank, 2009). This is a significant obstacle to achieving the generally accepted goals of public procurement such as transparency, competition, value for money, fairness, cost-effectiveness and integrity. How to use the limited public resources wisely remains a significant challenge for governments especially under the current fiscal pressure (Estache and Limi, 2011).

It is therefore imperative that the Department procures resources within acceptable public governance principles, regulatory frameworks, and prescripts.

Fay and Morrison (2007) state that coverage and quality have improved for most of the infrastructure services in the region, and that but there are still gaps and ground has been lost relative to competitors. Efficient growth over the past decades has been steady if uneven within and across sectors and countries (Fay, and Morrison 2007). Coverage lags behind in rural areas and among the rural and urban poor. The poor tend to suffer more when there is low service quality. Growth has not kept up with other middle-income country competitors such as China and other East Asian "miracle" economies.

Inadequate infrastructure undermines the region's growth and competitiveness and hampers the fight against poverty, exclusion and inequality. In Colombia, for example, Infrastructure services represent a considerable share of the production costs, i.e. 16 percent. Although similar estimates are not available for the entire region, it is clear that better infrastructure would have huge impacts on competitiveness and growth. Infrastructure is essential in helping the poor improve their health, quality of life, and ability to engage in productive economic activities.

Research on the public procurement systems of Nigeria and South Africa revealed that while attention is devoted to legal reform and the creation of new institutions, insufficient attention (especially concerning Nigeria) is devoted to the capacity building of public procurement officials to acquaint them with the procurement regulation (Adetola & Ogunsanmi, 2006). Logically, a delay in the implementation of the construction of infrastructure causes cost overruns for such a project (Adetola & Ogunsanmi, 2006). Allen (2001) found that when an infrastructure project is procured through public finance, cost projections tend to underestimate the project risks. Budgets for significant projects have sometimes been prone to optimism bias as a result. Concerning Public-Private Partnership (PPP) procured projects, the cost

overruns were mainly due to inflation increases and public sector procurers changing the project scope (Allen, 2001).

Singh (2009) further substantiates that project overruns are caused by many factors, some of which include changes in project scope, changes in the economic environment, political factors and poorly written contracts, among other things. In the case of South Africa, very little is said of empirical studies that have been conducted to determine procurement challenges in housing infrastructure projects. (Baloyi and Bekker (2011) in their study about the financing of the 2010 World Cup stadia in South Africa built using a public finance approach revealed that no widespread problems were highlighted.

Promulgation of the Intergovernmental Relations (IGR) Framework Act 13 of 2005 seeks to provide a framework, systems and approaches supporting IGR among the three spheres of government in the provision of public services. However, for issues of human settlements and housing, the question of IGR remains an ongoing concern where both formal and informal (intergovernmental relations) structures have not been fully implemented to resolve this conceptual issue (Department of Provincial and Local Government, 2007). The National Planning Committee's Diagnostic Overview (2011) reveals that "it is vital for public servants to have the skills and motivation they need to do their jobs. However, there exists a shortage of staff and specialist skills in many aspects of the public service." The sporadic sustained service delivery protests countrywide are an indication of this observation. Furthermore, it is the municipalities that are most affected because skilled personnel such as engineers and environmental officers are very scarce. The scarcity of these skilled professionals causes delays in the implementation of housing and water infrastructures.

This study aims to investigate the procurement challenges associated with infrastructure (capital) projects, to uncover potential best practice and to make recommendations on how those challenges can be overcome based on the findings. The lessons learned from such studies provide a sound foundation for the development of theory and the implementation of innovative best practices. Such best practice guidelines should eventually lead to standard operating procedures (SOPs) for infrastructure development in the Eastern Cape Department of Human Settlements.

1.3 Problem Statement

It is argued that housing infrastructure projects appear to be embedded with procurement challenges thus, making them ineffective regarding timeous delivery as per the expected outputs (Miller, 2009). The Audit Report for the Eastern Cape Department of Human Settlements (ECDHS) supports the claims of untimely delivery of housing projects (31 March 2017). It was found that the ECDHS's risk management strategy was not effectively implemented as the department did not align its risk assessment to its service delivery mandate. The department entered into contracts with values more than its medium-term budget as a result, which affected the departments' financial sustainability.

The researcher has observed this concern since he is one of the employees in the sector. |A significant number of other employees interviewed at the department also share this view. This is also manifested in the statement in the above literature where it states that "procurement of infrastructure projects poses challenges that are not found in other areas of public procurement. The primary reason for this is that the infrastructure is highly complex and customised. Infrastructure, therefore, it requires not only economic but also political, social and environmental considerations from a long-term perspective" (World Bank, 2009).

The Eastern Cape Department of Human Settlements is amongst other departments that still use the conventional procurement method (Status Quo and Feasibility Study Phase, Preliminary Engineering Design Phase, Detailed Design Phase & Tender Phase) and strategies in construction-related projects. Besides the substantial sum of money invested by the South African (SA) government in general and the Eastern Cape (EC) government, there have been challenges in utilising the available resource.

To supplement the findings of the research, the study also seeks to determine the best procurement method to be utilised by the department regarding the procurement of infrastructure related projects.

1.4 The aim of the Study

The study seeks to investigate challenges of Procurement Process of Housing Infrastructure projects using Eastern Cape Department of Human Settlements (Joe Gqabi, Nelson Mandela Metropolitan, Amathole, Buffalo City Metropolitan, Alfred Ndzo, OR Tambo, Sarah Baartman and Chris Hani regions), South Africa with an aim to ensure that adequate and effective procurement process is achieved.

1.5 Specific Objectives

The specific objectives of the study are to:

i. To determine the factors affecting housing infrastructure projects.
ii. To determine the causes of the challenges in the procurement process of housing infrastructure projects.
iii. To understand the challenges in the procurement process for housing infrastructure projects.
iv. Determine the best procurement strategy the department can utilise with regards to procurement of infrastructure related projects.

1.6 Research Questions

1.6.1 Main Question

This research seeks to answer the following primary research question: What are the procurement challenges in housing infrastructure projects?

1.6.2 Sub-Research Questions

This study sought to answer the following sub-research questions:

i. What are the challenges in the procurement process of Housing Infrastructure Projects?
ii. What are the factors affecting Housing Infrastructure Projects?
iii. What are the common causes of the challenges in the procurement process of Housing Infrastructure Projects?

1.7 Brief Overview of the Research Methodology

The methodology of a research study is considered as an essential element. The methodology determines the method of research. Research methodology is useful to establish the structure of research such as the strategy, approach, research philosophy, and components of the methodology. This chapter aims to give and clarify the components of a research methodology in the procurement process of housing infrastructure projects as well as justification for the use of the methodology of choice selected.

1.8 Scope of the Research

This study's sample population was limited to the employees of Eastern Cape Department of Human Settlements even though the challenges are applicable provincially and can be generalised. The conceptual framework of the study only focuses on the procurement challenges in housing infrastructure projects. The respondents of the study were limited to officials who are working within the Project Management and Quality Assurance Directorate of the Eastern Cape Department of Human Settlements.

1.9 Structure of the Research Report

Chapter One - Introduction: This chapter introduces the study and deals with the background of the challenges in the procurement process for infrastructure projects in the Eastern Cape Department of Human Settlements.

Chapter Two - Literature Review: The context, detailed works organised by themes and theory base study is presented in this chapter.

Chapter Three - Research Methodology: This chapter covers the research design, data collection, data collection procedure, population and sampling, research Paradigm, research approach, data analysis, and research ethics.

Chapter Four - Data Analysis: A critical assessment of the researcher's work, statement of the research question and demonstration of precision, thoroughness, and contribution to the existing body of knowledge is presented in this chapter along with discussions about the implications of the research findings for existing knowledge, and the study's research questions.

Chapter Five - Summary, Conclusion, and Recommendations: This chapter provides the conclusion to this study which covers the summary of the thesis argument and the main results. Recommendations for follow-up actions and further research will also are presented in this chapter.

1.10. Summary

This chapter covers the background of the study, setting the scene for other chapters to follow. Chapter 1 draws the reader attention to the problem statement, objectives, hypotheses of the study and the study's significance. The significance of the study has been included to ascertain whether the study would be useful in producing effective procurement practices with regards to infrastructure development. The chapter closes with a brief explanation of the data sources to be used in undertaking the study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The following headings shall generate discussions. The first is an overview of the ECDHS department procurement strategy. The second heading is the construction industry development board act 38 of 2000 (CIDB). The third is the national home builder's registration council (NHBRC), the fourth. National treasury regulations, March 2005, the constitution of the Republic of South Africa act 108 of 1996, the construction industry development board act 38 of 2000 (CIDB) and lastly the typical procurement procedure used in the procurement of housing infrastructure projects.

The opportunities for significant private infrastructure provision in the early post-conflict period are likely to be limited by the opportunities available to investors. Infrastructure construction is time-consuming and costly especially in instances where state capacities are low. In such cases, governments have little ability to absorb or allocate funds. Potential infrastructure users may have limited resources to pay for the provision of services. Private investors are therefore likely to be wary of investing too soon before the conflict is fully resolved. Thus, a significant investment by private organisations is expected to be appropriate only after a period of stability, or where appropriate guarantees that offset the risks can be made. However, some private organisation's may assume the responsibilities of filling essential gaps where the entry cost are relatively low, and returns are rapid, such as the provision of telecommunications immediately after a conflict. The use of guarantee instruments and increased fund provision by donors can aid in the higher uptake of private/public partnerships (MacDonald, 2005).

An understanding of public procurement, its essence and purpose provide the best justification for public access to procurement information. The term public procurement means an acquisition of works, supplies and services by public bodies using publicly sourced finances, whether under a formal contract or otherwise. Public procurement involves the purchasing, hiring or obtaining by any contractual means, publicly needed goods, construction works and services by the public sector. It also includes instances

in which public funds are mobilised to procure jobs, goods and services even if the government does not get involved directly.

Public procurement is also the acquisition of goods and or services at the best possible cost of ownership, in the right quantity and quality, at the right time, in the right place, for the direct benefit or use of government, corporation or individuals, generally via a contract. This definition though incomplete, reveals substantive issues that are subject to public procurement. To determine the best possible total cost, right time, or quantity or right place, we will need a comparison, perhaps between most or all available options. If the different goods, services or works can be provided by different people or entities, to compete to offer them, the different people or entities need to know that there exists the opportunity to compete. Moreover, they will need to know the precise need to be addressed and perhaps the standards that need be metfulfilling. Fulfilling these needs and adhering to these standards would require transparent information exchange amongst the stakeholders.

Challenges and public procurement information

Procurement has become an integral part of corporate performance. There are, however, various challenges when it comes to establishing and managing global sourcing offices.

The challenges specifically lie in the processes and the creation of a linkage between the global sourcing offices and the headquarters. How the global sourcing offices collaborate with other non-procurement functions is also another challenge (Christina Bauer, October 2011). One of the primary responsibilities of public sectors is to improve their procurement of information systems. Sound public procurement policies and practices are essential to good governance. The Procurement Management Information system is a tool for receiving, storing, sharing and disseminating procurement information as required by the public procurement legislation in most of the developing countries in Africa (SM UROMI: 2014).

The Eastern Cape Department of Human Settlements has had a very turbulent human settlements delivery record for the development of low-cost housing over the past eighteen years. A National Government intervention succeeded in transforming the

status of delivery of cheap accommodation in the Province to more acceptable levels. The low-cost housing delivery problem worsened when the Department succeeded in separating from Local Government almost years ago. The department then had to establish its structure, populate the organogram, develop policies, systems and procedures and formulate its strategic plans and operational plans.

The Department also experienced a range of problems related to the delivery process. The following key factors affecting expenditure were identified as practical realities that exist in the service delivery environment:

- Poor planning (by Departmental and municipal officials).
- Approval of projects that are not ready.
- Land issues – land under claims and lack of suitable prime land.
- Lack of services infrastructure to support the housing projects.
- Lack of capacity of the emerging contractors.
- Slow take off of the established contractor construction Programme.
- NHBRC slow start on the rectification Programme.
- EIA long turn-around time.
- The lean pool of established contractors attracted to low-cost housing resulting in re-tendering.
- The inability of bidders to produce NHBRC certificates.
- Material Supplies – shortage and price escalation.
- Conditional budget increases and disproportionate increase in the operational budget.

The Department had to redefine processes to ensure effectiveness. The department also had to introduce a service delivery model, project methodology and implementation vehicle turnkey programme.

2.2 Definition of Low-Cost Housing

The term low-cost housing can have a different meaning for various people. For example, in the context of a developed country such as the United States of America

(USA), housing is considered affordable for a low or moderate-income earner if that household can acquire use of that housing unit (owned or rented) for an amount up to 30% of its household income (Miles et al., 2000). In developing countries, low-income groups are generally unable to access the housing market through mortgage institutions. The informal sector of the economy usually produces low-cost housing for the low-income population through unstructured procurement systems. In developing countries, low-cost housing schemes are influenced by the characteristics of the construction environment.

2.3 Housing Service Delivery International and National Perspective

The election of the new national government in November 2007 saw Australian housing policy is undergoing a significant reform under the leadership of the first dedicated national housing Minister. This reform began in 1996. In 2009 a new intergovernmental agreement to frame future housing policy and drive significant reform in social housing was initiated. The Australian Government also embarked on a variety of considerable housing initiatives that include: offering subsidies to private investors in new affordable rental housing; subsidising costs of residential development where savings are passed to homebuyers; and national partnership agreements which incorporate targets aimed at improving housing in remote indigenous communities and to significantly reduce homelessness. The Australian housing policy allows for investments in additional social housing and provides cash assistance to first home buyers. The investments and provision of cash assistance have featured strongly in economic stimulus packages that have been designed to offset domestic impacts of the global financial crisis. An increase of over 220% in national government expenditure on housing over the period of 2008/09 to 2011/12 indicates a monumental change in Australia's affordable housing provision strategy (Milligan and Pinnergar, 2010).

Non-collaborative working environments and adversarial business relationship culture are the reasons that construction procurement processes suffer from poor working practices and experiences (Laryea, 2010; Organ et al., 2012a, 2012b).

2.5 Project Management, Organisation and Procurement Systems

Cleland and King (1983) define the project management process of its subsystems. These entail organisation, control, information, cultural, planning, and human subsystems within the framework of the organisation, culture, techniques, and methodology. These subsystems make provision for the framework within which to identify the essential minimum set of tasks necessary for clients to create the necessary conditions that allow for a successful construction project.

According to the systems theory's perspective, all the subsystems are interdependent, interrelated, and at the same time subject to the external influence of the environment (Walker, 1985). In the management of projects, the organisation's subsystem establishes the pattern of interrelationships, authority, and responsibility between contributors (who are usually independent firms) to achieve the client's objective. The organisation structure forms the basis on which another subsystems can function correctly. These determine to a greater degree the effectiveness of the entire process.

Walker (1985) identified that the major components of the organisation structure of the projects as the client/project team integrative mechanism, the organisation of the design team and the integration of the construction team into the process. The organisation of the design team may be the traditional/conventional, nonexecutive project management or executive project management, while the method of appointment of the contractor may be a selective competitive tender, two-stage competitive tender, competitive-serial tender, negotiated tender, management contract, separate trade contracts, or design and build.

Bennett (1985), in a review of organisation theory, applied to construction projects that have matching organisational structures; these, in turn, lead to procurement systems. These entail standard constructions comprise of simple buildings, primary housing, and those that use programmed organisation through design and build, turnkey, and package deal systems. Further to the above, there are traditional constructions made up of a variety of buildings based on established methods of technology resources and techniques. These use professional organisations through a separate trades approach or the general contractors' approach, namely, traditional/conventional

approach or the contracting/construction management approach. Innovative construction includes developments that use problem-solving organisations are idealised, and in practice, there are many modifications and hybrid versions of the procurement systems. This line of argument consistent with Walker (1985).

A study of procurement systems and project organisations undertook by Oladapo (1991) established that 12 organisational arrangements based on design, develop, build and the traditional approach methods were found to be feasible in the Nigerian construction environment. Eight of the systems were linked with the foreign-managed construction firms and could be used unsuccessfully for medium to large size projects. The performance of these systems, however, was closely related to the design input and managerial control excised by the contractor in overcoming the management deficiencies of client and design team. Four of the systems, which are the variants of the traditional approach, were associated with indigenous construction firms and could also be used successfully for small to medium-sized buildings.

These possibilities form the basis for alternative arrangements for project organisations and the selection of an appropriate organisational arrangement for the project organisations. The selection of a proper organisational arrangement relies on the extent of the definition of the client's requirements/objectives, allocation of project management responsibilities between members of the organization, the simplicity/complexity of the project in terms of the size, technology of construction and components, and the simplicity or complexity of the environment (Walker, 1985).

The elements of practice involve the participation of community interests in the design and implementation of the project, the use of local materials and labour intensive methods, the use of appropriate technology, flexible management and local conflict resolution amongst other things. These elements provide a basis for sustainable economic growth and development of the community through employment creation and active promotion of small micro-enterprises.

In a study of French building procurement Birrell (1996) present three major approaches: (a) Equipment/Grand project, (b) Complex/Large and (c) Simple/Small. Each of the afore-mentioned serves a different segment of the building market as (a)

is for large, prestigious government-backed projects, (b) is for complex and large commercial projects and (c) is for simple small projects usually with local or vernacular constituents.

The salient feature of the simple/small approach is that the product is simple and small and is generally used in small town or rural or semi-rural location. The success of the approach however, depends on the effective and efficient management of resources given the characteristics of the construction environment and local market participants. One local construction professional for example, a Cost management professional/Quantity Surveyor, Cost Engineer or Architect is recommended as the Project Manager for the procurement processes

2.7 Legislative Framework Guiding Housing Service Delivery and Procurement

The National and Provincial Treasury Departments have developed legislative frameworks and policies that are intended to enhance the capability of all departments. These legal frameworks are applicable across all spheres to ensure transparent, fair and equitable supply chain processes and procedures. These frameworks are supplemented by department-specific policies and procedures (Housing Sector Specific Policy) as and where required, ensuring optimal service delivery and achievement of both National and Provincial objectives in this complex and regularly contested environment.

2.7.1 The roles of different spheres of government

(a) Roles and Responsibilities of the National Government sphere:

According to the Housing Act 107 of 1997, the following are roles and responsibilities of the National Department of human settlements:

- Determining national policy, including national norms and standards, in respect of housing development;

- ❖ Setting broad national housing delivery goals and facilitate the setting of provincial and, where appropriate, local government housing delivery goals in support thereof;
- ❖ Monitoring of the performance of the national government and, in co-operation with every MEC, the performance of provincial and local governments against housing delivery goals and budgetary goals;
- ❖ Assisting provinces to develop the administrative capacity required for the useful exercise of their powers and performance of their duties in respect of housing development;
- ❖ Supporting and strengthening the ability of municipalities to manage their affairs, to exercise their powers and perform their tasks in respect of housing development;
- ❖ Evaluating the performance of the housing sector against set goals and equitableness and effectiveness requirements and take any steps reasonably necessary to create an environment conducive to enabling provincial and local governments, the private sector, communities and individuals to achieve their respective goals in respect of housing development; and promote the effective functioning of the housing market.

(b) Roles and Responsibilities of the Provincial Government sphere:

According to the Housing Act 107 of 1997, the following are roles and responsibilities of the Provincial Department of human settlements:

- ❖ Determining provincial policy in respect of housing development;
- ❖ Promote the adoption of provincial legislation to ensure effective housing delivery;
- ❖ Taking all reasonable and necessary steps to support and strengthen the capacity of municipalities to effectively exercise their powers and perform their duties in respect of housing development;
- ❖ Co-coordinating housing development in the province;
- ❖ Taking all reasonable and necessary steps to support municipalities in the exercise of their powers and the performance of their duties in respect of housing development;

- ❖ When a municipality cannot or does not perform a task imposed by this Act, intervene by taking any appropriate steps under section 139 of the Constitution to ensure the performance of such duty; and
- ❖ Preparing and maintaining a multi-year plan in respect of the execution in the province of every national housing programme and every provincial housing programme, which is consistent with national housing policy;
- ❖ Administering every national housing programme and every provincial housing programme which is consistent with national housing policy.

(c) Roles and Responsibilities of the Local Government sphere:

According to the Housing Act 107 of 1997, these are the following are roles and responsibilities of municipalities:

- ❖ Every municipality shall, as part of the municipality's process of integrated development planning, take all reasonable and necessary steps within the framework of national and provincial housing legislation and policy to ensure that-
    - The inhabitants of its area of jurisdiction have access to adequate housing on a progressive basis;
    - Conditions not conducive to the health and safety of the inhabitants of its area of jurisdiction are prevented or removed;
    - Services in respect of water, sanitation, electricity, roads, stormwater drainage and transport are provided in a manner which is economically efficient;
    - Set housing delivery goals in respect of its area of jurisdiction;
    - Identify and designate land for housing development etc.

(d) The table below also highlights some of the roles and responsibilities of the three spheres.

Table 1: The Roles and Responsibilities of the Three Spheres of Government

National **National Minister**	**Provincial** **Member of Executive Council**	**Municipality** **Mayor**
Determine national policy, norms and standards	Determine provincial policy	Gather housing needs
Publish a National Housing Code	Adopt provincial housing legislation	Set housing delivery goals as part of its integrated development planning
Set delivery goals and assist provinces with their goal setting	Administer national and provincial housing programmes	Identify land for housing
Support provinces and municipalities	Prepare and maintain a multi-year plan (provincial priorities)	Create conditions for housing development
Monitor performance	Administer housing assets	Provide bulk engineering services and revenue generating services
Determine procurement policy for the sector	Support municipalities and fulfil the role of municipalities where required	Provide services (water, sanitation, roads, storm-water)

Source: (National Treasury, 2015)

2.8 Housing Service Delivery Provincial and Local Perspective

The broad mandate of the Department of Housing is to provide access to integrated and sustainable human settlements for all the citizens of the Eastern Cape Province. In addition to this broad mandate, there are specific legislative and policy frameworks that govern the department when it comes to the delivery of housing.

The department's work is guided by a myriad of legislative and policy frameworks which include:

2.8.1 Constitution of the RSA, Act 108 of 1996

Section 26 of the Constitution guarantees that everyone has the right to have access to adequate housing, and the state must take reasonable legislative and other measures, within available resources, to achieve the progressive realisation of this right.

2.8.2 White Paper on Housing - A New Housing Policy and Strategy for South Africa, 1994

This policy commits the government to the establishment of socially and economically integrated communities situated in areas allowing convenient access to economic opportunities, as well as health, educational and social amenities.

Under housing, the following must be attainable:

- Everyone has the right to have access to adequate housing.
- The state is expected to make reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right.
- No individual may be evicted from their home, or have their house demolished, without an order of the court made after considering all the relevant circumstances. No legislation may permit evictions.

2.8.3 Housing Act, 107 of 1997

The Housing Act provides the general principles governing housing development. The Housing act defines powers and functions of national, provincial and local governments and provides for financing arrangements for housing developments. Redressing the inherited inequalities of apartheid has established a complex and challenging context for meeting basic needs in contemporary South Africa. Given the

physical and political segregation of apartheid, meeting the demand for housing has been a central development focus since 1994.

As local government have been given more responsibility in this area, it must do so while managing complex relationships with private-sector actors seeking access to primary service delivery that was previously associated with the public sector. The results are that not only has the structure of local government been dramatically reformed since 1994; it has also acquired a new responsibility to enable markets to work in the name of poverty alleviation. Housing is a case in point. Following the first democratic elections in 1994, the policy framework associated with the apartheid housing delivery on a racial inequality was replaced with an income-based housing capital subsidy targeted at the South African poor (Pottie, 2004).

2.8.4 Inter-Governmental Relations Framework Act, 13 of 2005

This inter-Governmental Relations Framework Act sets out the general principles and objects of intergovernmental relations. It seeks to ensure a coherent government, adequate provision of services, monitoring implementation of policy and legislation and a realisation of national priorities. According to (Craythorne., 2006), Section 41(2) of the Constitution requires Parliament to enact legislation to establish or make provisions for the structures and institutions that promote and facilitate intergovernmental relations. Parliament is also required to make provision for mechanisms and procedures to facilitate the settlement of intergovernmental disputes. Section 41(1)(h)(vi) requires the spheres of government to avoid legal proceedings against one another although in terms of section 34 of the Bill of Rights, they have the right of access to a court to resolve a dispute that can be addressed by the application of law, if such becomes necessary. What Act 13 of 2005 does is to make provision for mechanisms which will prevent recourse to the courts.

The general scheme of the Intergovernmental Relations Framework Act is to establish a series of intergovernmental forums from the national down to the local level. There are seven definitions worth noting in the Act.

2.8.5 Breaking New Ground: Comprehensive Plan, 2004 (BNG)

A multi-dimensional plan focusing on improving the quality of living environments, new tenure options, integration, fast-track delivery, capacity building and anti-corruption measures.

2.8.6 Housing Code, 2007

The Housing Code provides administrative guidelines for the implementation of national housing programmes.

2.8.7 Public Finance Management Act

The public finance management act provides for the efficient and effective utilisation of resources, as well as the need to ensure that the procurement of goods and services is handled prudently.

2.8.8 Municipal Systems Act, 32 of 2000

The purpose of this Act is to provide among other things core principles, mechanisms, and processes that are necessary to enable municipalities to move progressively towards the social and economic upliftment of local communities and ensure universal access to essential services.

This Act covers a wide area but focuses mainly on community participation, intergraded development planning, performance management, local public administration, municipal services, and credit control and debt collection (Craythorn 2006).

(a) The White Paper processes

Although the white paper process preceded the legislation described above, it is discussed here to show that the legislation was finalised with the inclusion of a

consultative process. Consultative processes are not meant to be entirely impartial in any government in any country. This is because governments are elected from a political platform and receive their legislative mandate from the very people that vote them into power. Although some in local government were unhappy with the turn of events, it was not surprising when the government decided to impose its political mandate.

(b) The White Paper process went through three stages:

- Stage one - The Discussion Document: The Discussion Documents raised some questions on the future structure and nature of local government along with invited comments.
- Stage two - The Green Paper. A Green paper is a means through which government sets out a potential policy or set of policies and invites comments. In this case, the comments received on the Discussion Document were presumably used to frame the Green Paper, together with its outlook on how to deal with the issues that were raised.
- Stage Three - The White Paper on Local Government: A White Paper once it has been adopted by the Cabinet, becomes Government policy. This took place in March 1998. The main themes of the White Paper were:

    - Current Reality: This theme is a historical survey and a study of the local government system.
    - Developmental Local Government: This theme sets the scene for the integrated development planning and performance management provisions in the Municipal Systems Act.
    - Co-operative Government: This section interprets co-operative government in the constitution and details the intergovernmental relations between the three spheres of government.
    - Institutional Systems: This section defines the types of metropolitan, district, and local municipalities and also brought in the concepts of sub-councils and ward committees.

- Political System: This deals with the concept of the executive mayor, executive committees, delegation, committee systems, the electoral system, ward delimitations, number of counsellors and both the Municipal structure and Municipal Systems Act.
- Administrative Systems: Under administrative systems, the principles for service delivery are laid out, as well as how these principles could be applied, for example, in-house, corporatisation, partnerships, etc. (Craythorne,2006).

2.9 The Importance of Procurement Strategies for Housing Infrastructure Service Delivery

The Architecture, Engineering and Construction (AEC) sector are incredibly diverse in both scale and nature. It deals with construction projects ranging from traditional house buildings to complex structures. The architecture, engineering and construction sectors play an essential role in the economy of many nations. The scope of activities in this sector also includes mechanical and electrical engineering works, the construction of roads, dams, airports, bridges, tunnels, petrochemical facilities, harbours, mines and many other infrastructures (Adetola and Ogunsanmi, 2006). Though AEC projects share common characteristics in terms of project phases (initial concept, detailed design, construct, commission and own/maintain) and project structures (involving a range of organisations – architects, engineers, contractors, tradesmen, and manufacturers), the procurement strategy is chosen based on the project size, scope, value, complexity, and sophistication. Today, there is an enormous emphasis on collaborative engagement approach for delivering sustainable infrastructure projects. Infrastructure as a concept has mostly been absent from economic discourses for about two centuries (Prud'homme, 2004). Notwithstanding, by the 1990s after many years of neglect, it began to feature prominently on the development agenda with the renewed emphasis on the role of infrastructure in economic growth and poverty reduction (Estache, 2006).

The world development report elaborated by the World Bank (1994) defined infrastructure as long-life engineering structures, equipment, and facilities, and the

services that are derived from and utilised in production and final household consumption. Authors like Ahmed and Donovan (1992), refute this definition, indicating that the concept has since evolved towards a more comprehensive definition that includes a broader range of public services that facilitate production and trade. Since infrastructure services tend to raise the productivity of other factors, it is often termed the "unpaid factor of production". Furthermore, the definition of infrastructure has been shifting from one focusing on physical fixed assets such as roads, airports, seaports, telecommunications systems, energy, water distribution systems and sanitation (public utilities). The definition of facilities now tends to embody notions of 'softer' types of facilities such as information systems and knowledge bases (Button, 2002).

The World Bank landmark study on infrastructure (World Bank, 2004) highlighted the critical role of infrastructure in the development process.

The importance of delivering quality infrastructure has also been elaborated by the United Nations declaration of the Millennium Development Goals. For many years, the public sector has financed and operated infrastructure projects in a traditional manner, using resources from taxes and various levies (e.g. fuel taxes, road user charges). However, the recent disparity between the capacity to generate resources and the demand for new facilities seem to have forced governments worldwide to look for new funding methods and funding sources. Inadequate infrastructure is said to the cause of a lack of productivity amongst Sub-Saharan Africa entrepreneurs and imposing significant costs on business concerning lost output and additional expenses incurred to compensate for inadequate public services. It is widely acknowledged that infrastructure deficits is one of the critical factors that prevent the Sub-Saharan Africa region from realising its full potential regarding economic growth, international trade and poverty reduction (World Bank, 2010; World Bank, 2008; Organisation for Economic Cooperation and Development, 2006). Many countries are now contemplating Public-Private collaboration as the arrangement between public and private sectors to finance, design, build, operate and maintain public infrastructure, community facilities and related services (Tang et al., 2010; Akintoye and Beck, 2009). Public-private sector collaboration is an evolving concept that has taken many forms around the world. Public-Private partnership essentially an arrangement by which private entrepreneurs participate in or provide support for the provision of public

infrastructure. The private sector can be described as that part of an economy which is owned and run by individual persons, groups or business organisations, usually as a means of enterprise for profit. The public sector, on the other hand, is the portion of the economy which is owned, controlled and run by the various levels of government (federal, state, region, local etc.) or its agencies. Collaboration is a partnering process through which individuals, groups, and organisations have the opportunity to become actively involved in a project or programme of activity. Thus, public-private sectors collaboration is a method of procuring public services and infrastructure by combining the best of the skills and assets of both the public and private sectors. According to Li and Akintoye (2003), the idea of allowing private firms to finance projects or public sector infrastructure resulted in the emergence of the Public-Private Partnership (PPP).

2.9.1 Skills/Competencies

Projects are often managed by people who probably must make decisions and enforce procedures that might affect other people. Maintaining even a small project may require careful attention to details and the ability to anticipate possible problems. Management skills, principles, and competencies are therefore necessary to keep track of all the activities and issues associated with infrastructure project implementation and execution. The management skills and principles include planning, organising, controlling, coordinating, motivating, communicating, procuring, and leading, delegating and negotiating (Fayol, 1949). Project management tends to apply these skills and techniques to the organisation. The skills and techniques also control all aspects of every project so that optimum use of resources is achieved. When the use of resources is optimised a well-designed, soundly constructed, the functional and financially viable facility is produced. Optimum use of resources is ensured to satisfy the clients' requirements of quality, purpose, safety, cost and time budget, and future maintenance (Chartered Institute of Building, 2010).

2.9.2 Communication

Project communication management has been described as a knowledge area that employs the process required to ensure timely and appropriate generation, collection, distribution, storage, retrieval and ultimate disposition of project information (Project Management Institute, 2002). Management often relies on clear communications and the ability to pass thoughts, ideas, information, and instructions quickly and effectively, between people with different technical skills and interest. Effective communication can occur informally or formally. Informal telephone conversations, oral or face to face communications can be necessary for establishing personal relationships, for the speedy and effective resolution of problems, and for deciding upon courses of action to be taken. Formal communications, however, might be required to ratify the decisions made informally, to record the main reasons for a decision, and to communicate relevant information to people who probably were not involved in the decision-making (Cleland and Gareis, 2006).

In this respect, many of the reports and procedures such as the application for funds, certification and payments, periodic reports and financial accounts of a project are prepared in a well-established and standardised way to avoid ambiguity and reduce the risk of dishonest manipulations. Project drawings, specifications, bill of quantities, schedules, articles of agreement and other contract documents can be regarded as forms of formal communications (Project Management Institute, 2010).

2.9.3 Technology

Technology is defined as the purposeful application of knowledge and information in the design, production, and utilisation of goods and services, and in the organisation of human activities (Das and Van de Ven, 2000). Technology is critical and can be used as a tool to improve the movement of people and goods. The use of technology aids to meet the evolving needs of the modern economy and modern society. Intelligent transport systems (ITS) for example, is a technology toolkit involving a systems approach to transport. The ITS toolkit facilitates effective infrastructure management and encompasses road safety (European Transport Safety Council, 1999). The Organisation for Economic Cooperation and Development, OECD (2009)

classified industries as high, medium and low technology, based on research integrity and the rate of use of technology. In this classification, the road construction industry falls into a low technology category. Road infrastructure can be described as a significant technical system consisting of physical components such as roads, bridges, and traffic monitoring equipment which forms a network (Caerteling, Benedetto, Doree, & Halman, 2011). It is a public space, used by all, and often controlled using signs, regulations and dynamic route information which are organised to optimise traffic flow. Road infrastructure appears to be a significant component of economic activity, and an essential contributor to both Gross Domestic Product and employment (OECD, 2008; European Union Road Federation, 2007).

Well-established road transport infrastructure is seen as an important precondition for economic growth (Demurger, 2001). Roads are often grouped into natural surface roads, concrete roads, hot mix asphalt (HMA) roads and roads surfaced with component pavements. However, the bulk of roadwork concerns concrete and HMA surfaced roads. Concrete and HMA are mixed in regional facilities and transported by trucks to the construction site where they are laid down and finished to the final product.

Roads typically have to be produced at the location of use. It is for this reason that the road construction industry is widely distributed and fragmented. Modern site equipment is well developed and uses high technological components. The operatives and site crew, however, are often poorly educated and are often recruited per job (Caerteling et al., 2011; 2008). The majority of roads are owned by the public sector (federal/national, regional/state and local governments). As a result, the entrepreneurial environment of the industry is shaped by the public sectors procurement policy and practice (Caerteling et al., 2008).

2.9.4 Strategies for Delivering Sustainable Infrastructure Projects

The World Commission on Environment and Development (1987) defined sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The complex and evolving nature of risks involved in partnerships and the large numbers of project

stakeholders make it both necessary and expedient to adopt relational contract approaches to secure a sustainable product and service (Kumaraswamy and Zhang, 2003). Thompson and Sanders (1998) observed that the benefits of relational approaches increase with a progression of teamwork attitudes from competition, through cooperation to collaboration and finally coalescence. Under coalescence, the project team members work as a virtually seamless team. In effect, value for money occurs because costs are shared, economies of scale and synergies are achieved while decision making is shortened due to cooperation between partners (Klijn and Teisman, 2000; Ke et al., 2009).

Furthermore, MacNeil (1974) traced the development of contracts from traditional ‘classical' through ‘neoclassical' to ‘relational'. Segregated teams often characterise classical contracting approaches, adversarial contracts, blame culture and short-term focus. Relational contracting approaches, on the other hand, are characterised by integrated teams, joint risk management, sustainable relationships, and a longer-term focus. Relational contract principles seem to provide a sound basis for harmonising relationships between the contracting parties, thereby reducing areas of disagreements and lubricating transactional frictions. This is made possible by focusing on common objectives, adopting cooperative and collaborative approaches, and introducing compatible and useful processes over and above traditional contracting practices and principles (MacNeil, 1978). Relational contract approaches often engender proactive project delivery modalities by fostering cooperation between project team members with a longer-term mindset. Relational contract approaches also focus team efforts on whole-lifecycle performance and sustainable infrastructure. ‘Tension’ between the public and private sector participants are reduced. As a result, thereby facilitating integrated team-work with a long-time horizon (Rahman and Kumaraswamy, 2002).

2.10 An Overview of the Eastern Cape Department of Human Settlement (ECDHS) Procurement Strategies

The Eastern Cape Department of Human Settlements has had a very turbulent delivery record regarding the development of low-cost housing over the past eighteen

years (ECDHS – Turnkey Developer Concept Approval Version 1.0). Besides the challenges of a housing backlog and the associated socio-economic situation, the department is also faced with the challenge of actual capacity to deliver the required number of housing units, and the creation of integrated and sustainable human settlements. This challenge is further exacerbated at the municipal level where the capacity of some municipalities remains inadequate to ensure human settlements delivery takes place effectively.

Several factors constrain the Department's capacity to deliver at an optimal level. These factors relate to poor planning capacity within the department itself as well as in municipalities. Poor project planning and implementation manifest through among other things, approval of projects without ascertaining their state of readiness.

There is currently a failure to ascertain whether there are land claims or not in an area where a project is to be located. There is also a failure in determining the availability of bulk services, lack of water for building especially in rural areas. There are also disputes regarding the allocation of beneficiaries and non-enrolment of projects and units with National Homebuilders Registration Council (NHBRC). Environmental Impact Assessment Studies and associated delays of record of decisions and approval issues exist in addition to poor town planning as well as department's and municipalities' weak monitoring capabilities. These are critical issues that need to be addressed the housing delivery value chain. It is therefore essential to re-examine the way housing delivery is performed, the level/s at which this delivery should be performed and why. In responding to these questions would require that the Eastern Cape Department of Human Settlements identify the stakeholders in the housing delivery value-chain. It would also require the ECDHS to delineate the roles and responsibilities of each stakeholder and associated capacity.

Table 2: Process Flow (Comparison with Current vs Contracted Contractor Strategy (Housing Sector Specific Policy) - Proposed SCM De-Centralization

THE CURRENT PROCESS OF APPOINTING CONTRACTORS				CONTRACTED CONTRACTOR DATABASE (NEW APPROACH)		
	Process	**Responsibility**	**Time**	**Process**	**Responsibility**	**Time**
1	Prepare procurement strategy/ plan	District/End user	1-2 months	Prepare procurement strategy plan		1 month **(once off)**
2	Advertise bid (media tender bulletin)	SCM(Head office)	2 months	Advertising call for proposal (price only)		7 working Days
3	Bid Committee (BSC, BEC, BAC, and IBAC based on the procurement delegation	Committees are set up in Head office (not delegated)	4-6 months	3.1 BSC		1 week
				3.2 BEC 3.3 BAC 3.4 IBAC (every 6 months)		1 week 1 week 2 x per year
4	Appointment	Head of Department	1-2 months	Appointment		2 weeks
5	Contract preparation	Legal/Contracts	2-12 months	Contract preparation (maximum)		1 month
	Total average time of the appointment of a contract utilising the normal procurement process		**9-15 months**	**Total average time of appointment**		**1 month**

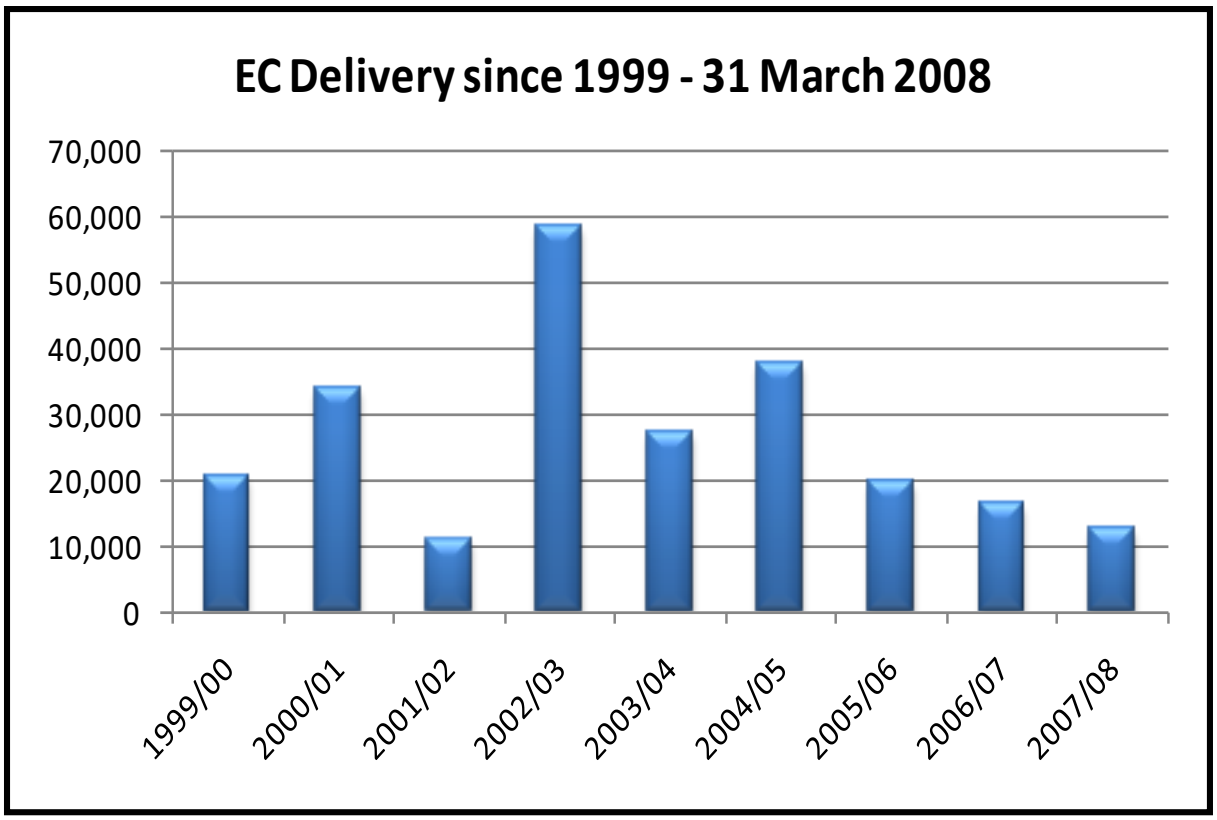
Source: Eastern Cape Department of Human Settlements Proposed Service Delivery Model (YEAR).

2.10.1 Current Housing Delivery Scenario

The rigorous appraisal of the existing service delivery model and the ultimate attainment of integrated and sustainable human settlements in both urban and rural settings should underpin the review of the current Service Delivery Model (SDM). This view is informed by accumulated experience that has demonstrated that no organisation can apply the same methods and measures over time and yet expect different results. It is therefore vital that an honest appraisal of the roles and responsibilities of the three spheres of government exist concerning housing delivery management. Furthermore, there should be an honest appraisal of the roles and responsibilities that pertain to the district and local municipalities concerning housing delivery.

The following graph depicts the housing delivery trend from 1999 to 2008

Figure 1: EC Delivery Since 1999 - March 2008



Source: Eastern Cape Department of Human Settlements Proposed Service Delivery Model (YEAR).

The critical interdependencies between and across the three spheres of government, sector departments, housing institutions, civil society organisations, private sector and communities should be adequately managed in the process of ensuring housing delivery.

The interface between top managers and operational staff should be effectively managed. No housing function or responsibility should unwittingly fall through the cracks because one departmental programme or sphere of government expected the other to be performing the task and vice versa.

A distinction should be made between the undertaking of a joint programme as part of IGR protocol, intervention, and pursue function where under-performance is recorded.

Functions that are not a competence of a particular sphere should be delegated adequately to an implementing sphere, on an agency basis and through striking appropriate service delivery protocol. The main overriding factor for agency services that will be performed by municipalities on behalf of the Province shall be the demonstrable capacity to manage housing programmes.

The current housing delivery indicates that the Province is responsible for the following functions in the entire housing delivery value chain:

Table 3: The Current Housing Delivery Value Chain

Province	**Municipality**
Administers Conditional Grant	Gather housing needs and submits to Province
Prioritises housing needs for the year and reserves funding	Provides land, bulk services etc. for projects
Verifies the state of readiness of projects	Supported by Province prepares project applications
Considers project application and approves funding allocation	Municipality appoints and manages service providers/contractors
Province administers payment system on value creation, transfers funds for trust accounts	Municipality manages trust accounts. Processes payments to contractors
	Signs-off project completion
	Manages trust accounts and processes payments to contractors
	Signs-off project completion
	Municipality hands-over houses to beneficiaries

Source: (National Treasury, 2015)

2.10.2 The constitution of South Africa act 108 of 1996
Section 217 (1) and (2) states:

(a) "When an organ of state in the national, provincial or local sphere of government, or any other institution identified in national legislation, contracts for goods or services, it must do so following a system which is fair, equitable, transparent, competitive and cost-effective.

(b) Subsection (1) does not prevent the organs of state or institutions referred to in that subsection from implementing a procurement policy providing for:

- *Categories of preference in the allocation of contracts; and*
- *The protection or advancement of persons or categories of persons disadvantaged by unfair discrimination".*

2.10.3 The PFMA (Public Finance Management Act)

Section 38 (1) (iii) provides that an accounting officer should maintain an appropriate procurement and provisioning system that is fair, equitable, transparent, competitive and cost-effective.

2.10.4 Treasury Regulation 16A 3 (2), states that:

"A supply chain management system referred to must;

(a) Be fair, equitable, transparent, competitive and cost-effective".

2.10.5 The PPPFA (Preferential Procurement Policy Framework) in the Framework for Implementation of Preferential Procurement Policy States That:

(a) An organ of state must determine its preferential procurement policy and implement it within the framework.

In 2004 the National Treasury issued a Guide for Accounting Officers that set out the philosophy behind the integration of Supply Chain Management. Despite the legislation mentioned above that requires procurement to occur in a system that is fair, open and competitive, deviations from the normal procurement processes are allowed in certain specific circumstances.

- Regulations 16 A 6.4 of the Treasury Regulations states that:
  "If in a specific case it is impractical to invite competitive bids, the accounting officer or accounting officer or accounting authority may procure the required goods and services by other means …"
- The above regulation applies to cases that are deemed to be urgent, an emergency or in the case of a sole supplier.
- When dealing with such instances, a department may use suppliers who have been pre-qualified on a supplier's database.

Government's procurement policy framework, as determined by the National Treasury, must provide for the different contexts in which SCM takes place.

The first step in determining a procurement strategy for a particular services' installation is to understand the nature of the client. For building services two general categories of a client will always dominate the process: the primary contractor who is in fact, the pseudo client of a project; and the true project client is the person or company receiving the end product. Both these client types will place different emphasis on and express different the project. Their experience with the service installation will determine the project's success.

During the development of a procurement strategy, four main issues must be considered the nature of inexperienced clients: the kind of risk, the specific project characteristics and inherent attributes associated with the chosen procurement arrangement. Currently, there is no support structure at the regional office to perform support services; they entirely depend on the head office for support services. This causes delays in service delivery and additional workload for head office limited staff among other administration control weaknesses. Procurement functions are limited to agreed delegations.

2.10.6 Procurement Challenges in the Infrastructure Delivery Management

Public procurement operates in an environment of increasingly intense scrutiny, is driven by technology, programme reviews with civil and political expectations for service improvements. Supply Chain Management is an integral part of procurement in the South African public sector. Supply chain management is therefore used as a tool for the management of public procurement practices. Despite the employment of SCM as a strategic tool, however, public procurement in South Africa still faces enormous predicaments.

Besides the challenges relating to the housing backlog, and the associated socio-economic situation, the department is also faced with the problem of delivering the required number of integrated and sustainable housing units. This challenge is further exacerbated at the municipal level where the capacity of some municipalities is inadequate especially where delivery has to be ensured (Bolton, 2006; Eyaa & Oluka, 2011).

2.10.7 The Importance of Communication for Procurement Process in the Public Sector

The public has essential economic and political needs that must be met. Ensuring that the process is economical and efficient is vital. For this reason, the procurement process in its entirety should be well understood by the actors, government, the procuring entities and the business community/suppliers and other stakeholders including professional associations, academic bodies and the public (Odhiambo& Kamau, 2013).

2.10.8 Contemporary Literature on Corrupt Supply Chain Management in Government

Regardless of the public processes and employment of the Supply Chain Management as a strategic tool, there still exists difficulties within South Africa's public procurement processes. Non-compliance with procurement and SCM-related legislation, and policies, as well as tender irregularities, are some of the problems that exist within South African public procurement (Smart, 2011).

Corruption, incompetence and negligence by public servants was the reason that South African taxpayers were fleeced R30 billion. The Eastern Cape has many projects that have been blocked for various reasons. These include the mismanagement of funds, poor project and contractor management, poor contractor capacity, the incapacity of municipalities to manage their trust accounts, poor project planning, land claims and slow decision making. The reason for the slow decision-making process is that decisions must be taken at Head office (De Lange, 2011).

According to Boateng (2008) since 1994, South Africa has enjoyed unprecedented social and infrastructural programmes. The majority of people who had hoped the new freedom would bring relative socio-economic liberation and improvement are expressing increasingly bitter feelings towards government over issues that include a lack of perceived quality of governance, service delivery failure, fraud and corruption in some spheres of the economy and disillusionment with empowerment policies (De Lange, 2011).

2.11 Various Theoretical Frameworks for effective Service Delivery

2.11.1 Multi-Theory Development

Action learning system theory, system consideration and reconsidering are the joined theories used as a path that guide theorising, explanations, discussions and spell the end of the research in developing the two models and associated discussions in this study (Seymour et al., 1997; Harris, 1998; Jugdev, 2004).

2.11.2 Theory of Action (TA)

A Relevant aspect of the Theory of Action (TA) required in this study is obtained from the studies of Tuomela (1991); Seebass, (2008) and Coleman and Ostrom (2009) which all indicate that TA is intention driven. TA is purpose driven meaning that it comprises of both < I-intention of an action, weaker than the other, we-intention > which is explained further that the separate action of an individual is not comparable to the joint effort of individuals in a group.

2.11.3 System Theory (ST)

Another theory useful for the theorisation is the System Theory (ST) which is an interdisciplinary theory about every system in nature, in society and in many scientific domains as well as a framework which can be used to investigate phenomena from a holistic approach (Mele et al., 2010).

2.11.4 Closed/Opened Systems and System Thinking/Rethinking

An open system is a kind of system that is a collection of interrelated parts. It is the collection of interdependent components that come together to form a whole (Cole and Kelly, 2011). A closed system is that which does not interact with its environment the supra-systems and the sub-systems (Cole and Kelly, 2011). A system can be closed or opened. If a system is closed such that no materials enter or leave it, this implies that there will be no inputs and outputs (ISN, 2009). A closed system, therefore, does not interact with its environment, the supra-systems and the sub-systems. It is easy to turn from an open system to close system but not vice versa (ISN, 2009).

2.11.5 Rethinking System Theory (RST)

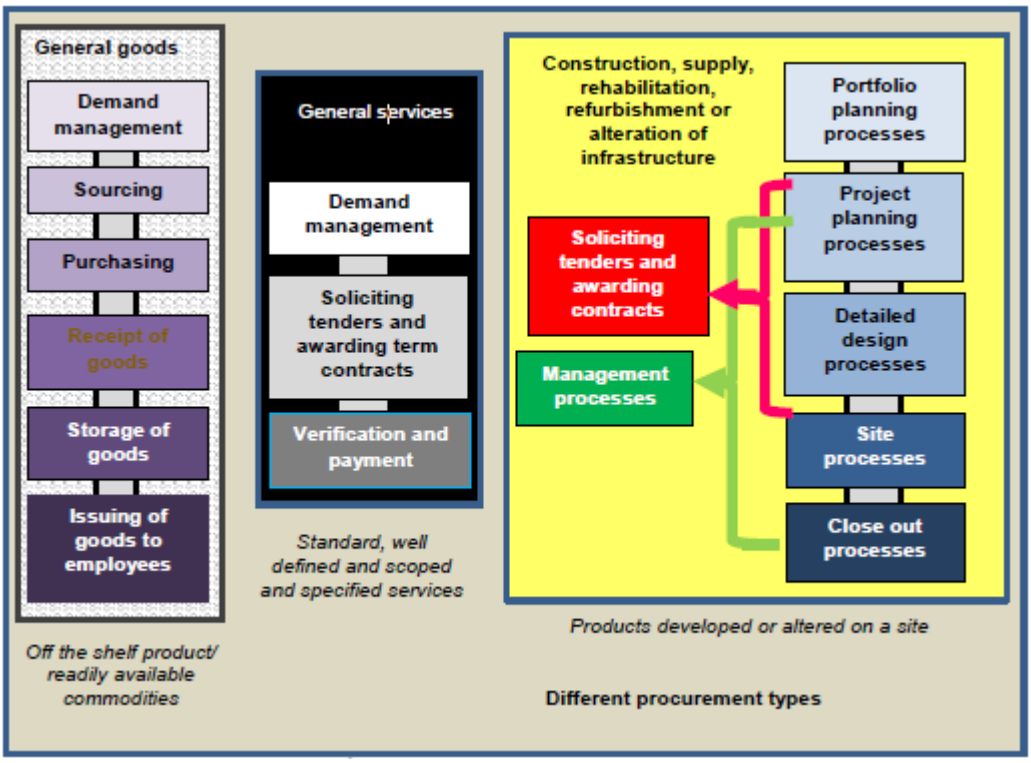
The idealist concepts of holism and reductionism are accepted in these new broader thoughts as real and causally efficacious in the multi-theory building (Pickel, 2007). They are understood to be integral parts of the rethinking process where each system takes all other systems as its environment. This is an ontological position that allows greater flexibility in the conceptualisation of systems than that based on the part to whole distinction (Pickel, 2004). In this context, a system cannot be defined only by a set of elements and their relations to an environment. It is therefore vital to incorporate the actual processes that make a system a system which in the complex real-world is the self-organisation.

According to the research of Bunge (2004), 'system' is like holism. The only difference is that 'system encourages analysis of wholes into their constituents and as a result, it is never in harmony with intuitionist epistemology that is inherent in holism.

2.12 Relevance to the Public Sector

The following diagram adapted from the National Treasury depicts the relevance of the Infrastructure Procurement and Delivery Management Model for the Public Sector:

Figure 2: Different Types of Procurement



Source: Model SCM Policy for Infrastructure Procurement and Delivery Management – Civil Engineering December 2015

The above diagram depicts the procurement process for the delivery of infrastructure entails the initial and successive regular update of planning operations at a portfolio level flowing out of an assessment of public sector service delivery requirements or business needs. This is then followed by planning at a project level and the procurement and performing oversight to a linkage of suppliers including subcontractors, with an objective of producing a product on a site.

This Standard enables the separation of the supply chain management requirements for infrastructure delivery from those for general goods and services. The Standard establishes a control framework for the planning, design, and implementation of infrastructure procurement. It also determines the minimum requirements for infrastructure procurement and the management of the supply chain associated with infrastructure.

Public procurement that is unconnected to infrastructure delivery relates to goods and services that are standard, well-defined and readily scoped and specified. Once acquired, goods invariably need to be taken into storage before being issued to employees. Services most likely entail routine, repetitive services with all well understood interim and final deliverables which do not require strategic inputs or require decisions to be made regarding the fitness for the service outputs.

As opposed to, procurement relating to the provision of new infrastructure or the rehabilitation, refurbishment or alteration of existing infrastructure covers a broad and diverse range of goods and services, which are required to provide or alter the condition of immovable assets on a site. Accordingly, the procurement for the delivery of infrastructure entails the initial and subsequent recurring updating of planning processes at a portfolio level flowing of an assessment of public sector service delivery requirements or business needs.

After that it entails planning at a project level and the procurement and management of a network of suppliers, including the subcontractors, delivering as per the scope of works on site. There is no need to store and issue materials or equipment unless these are issued to employees responsible for the maintenance or operation of infrastructure or are issued free of charge to contractors for incorporation into the works.

This Model Policy for infrastructure Delivery Management has been developed for adoption by those institutions which are required to comply with this instruction i.e.

- A department, constitutional institution and a schedule 2, 3A, 3b, 3C and 3D public entity or;
- An organ of state which has been assigned the responsibility concerning relevant legislation to act as the implementing institution (organ of state that is responsible for the delivery of infrastructure) for infrastructure or appointed by the client institution to serve as the implementing institution for infrastructure.

Organs of the state which are needed to implement the National Treasury Standard for Infrastructure Procurement and Delivery Management need to establish a suitable infrastructure procurement and delivery supply chain management policy to apply this standard. Such a policy is required as a minimum to:

- Assign responsibilities for approving or accepting deliverables associated with a gate in the control framework or authorising a tender process;
- Establish committees which are required by law;
- Establish delegations for the awarding of a contract or the issuing of an order; and
- Establish ethical standards for those involved in the procurement and delivery of infrastructure.

Organs of the state which are required to apply these standards are also expected to implement applicable Supply Chain Management Regulations, and National Treasury Instructions issued regarding the Public Finance Management Act as well as other pieces of relevant legislation. Although the Regulations apply to Schedules 2, 3B and 3D entities, such institutions are encouraged to adopt policies which are aligned with them nevertheless. This policy is aligned with the principles contained in all relevant National Practice Notes and Instruction Notes.

2.13 Conclusion/Summary of Literature Review

This chapter has outlined the theoretical framework of the study and has discussed procurement challenges in the delivery of housing infrastructure projects. The different effects that affect the procurement infrastructure housing projects has also been addressed in addition to the Acts were identified through a comprehensive study of the existing scholarly literature. The ten factors that collectively provide a comprehensive plan for implementing and social sustainability in construction projects serve as the basis for establishing a system that enables the evaluation of the social dimension of sustainability in different types of construction projects. Each of the identified factors has been thoroughly discussed with examples construction projects to clarify their purposes. Four conceptual areas of social sustainability in construction were also determined to provide a deeper understanding of what social sustainability entails in the construction industry.

CHAPTER 4: DATA COLLECTION AND RESULTS

4.1 Introduction

The chapter presents the results of the research into the question. “Procurement challenges in housing infrastructure projects: A study of the Eastern Cape Department of Human Settlements”.

The Chapter begins with presentation of the results from survey questionnaires of the Chief Director, Regional Directors, Director Supply, Assistant Director Contracts, Chief Construction Project Managers, and Construction Project Managers at the Eastern Cape Department of Human Settlements. For confidentiality, it should be noted that [001] – [066] identification of respondents does not correspond with the order in which the participants are listed in Chapter Four. Thirty-Two questions in total were presented to the participants.

The interview protocol is attached as Appendix A. In this chapter, based on the findings, the study will present and discuss the data thematically. This chapter introduces the results that necessitated the initiation of this research study. The results have been sub-divided into two sub-sections.

This chapter was completed using the information gathered mainly by using a survey questionnaire. Data was coded in Excel and analysed using the Microsoft Excel, the outcome of which was used to develop this chapter. The chapter also drew important nuances from the qualitative data obtained through a case study. Qualitative data was used to complement and "offer further meaning" to the quantitative data gathered through survey questionnaires. Although the interviews were fraught with several postponements, 57 respondents managed to respond to the survey questionnaire.

4.2 Research Instrument

The researcher relied on survey questionnaires that were distributed to (sixty-six) 66 participants from the Project Management & Quality Assurance and Supply Chain Management Units in the Eastern Cape Department of Human Settlements. Out of the (sixty-six) 66 questionnaires that were distributed, (fifty-seven) 57 were returned. The survey questionnaire was used as the primary data gathering tool for this research. Justification on the choice of the approach was based on the idea that the survey questionnaire captured the complexity of the subject under investigation relatively better. Survey questionnaires have been used to enable the collection of information in a standardised manner which, when gathered from a representative sample of the defined population, allows the inference of results to the broader society (Rattray and Jones, 2005). The popularity of the survey questionnaire has been on its ability to generate large representative samples as well as capturing rigorous, large amounts of quantitative data (Brooks, 2002). The main benefits of the survey questionnaire are that there are relatively quick to complete, relatively economical and are usually easy to analyse (Bowling, 1997).

However, like other data gathering instruments, survey questionnaires are not without criticism. They assume that the researcher and the respondents share underlying assumptions about language and interpret statement wording in a similar manner (Rattray and Jones, 2005). Closed questions, which are commonly used may restrict the depth of the participant's response (Bowling, 1997). Rattray and Jones (2005) argued that therefore survey questionnaire-based methods are not best suited for research where little is known on the subject or topic area. The criticisms of the survey questionnaire aside, the identified weakness did not affect the subject under discussion as mitigating measures have been put in place. To avoid the bias of language and questionnaire wording differences, the questionnaire was administered by the researcher. A fair amount of information is known on the subject under review to make the survey questionnaire suitable instrument for data collection.

4.3 The Questionnaire

The questionnaire was divided into four sections as outlined below:

Section A: Background Information

Section B: Procurement Experiences

Section C: Supply Chain Integration

Section D: Forward-Looking

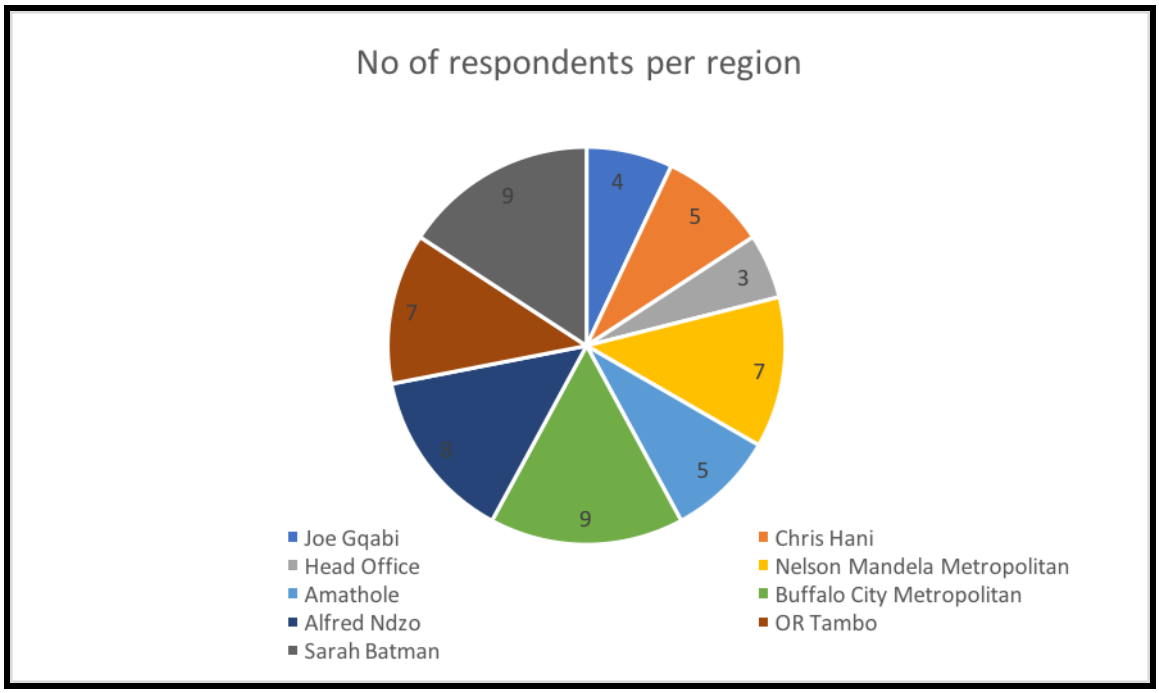
4.4 Analysis

The questionnaire consisted of 28 closed-ended quantitative questions. The purpose of the closed-ended questions was to measure their attitudes and opinions. The responses to the questions are presented in figures and percentages. Following are charts showing percentages and frequencies. Of the target population of 66 people, 57 responded, translating to a 13% non-response rate.

4.4.1. Overall Research Responses

The survey result shows that 83.36% percent (57 out of 66) of the respondents managed to respond to this research. This then transacted to 13.64% non-response rate with the highest number of respondents being in the O.R Tambo region and lowest at the head office. Figure 3: sums up that picture.

Figure 3: Number of Respondents Per Region



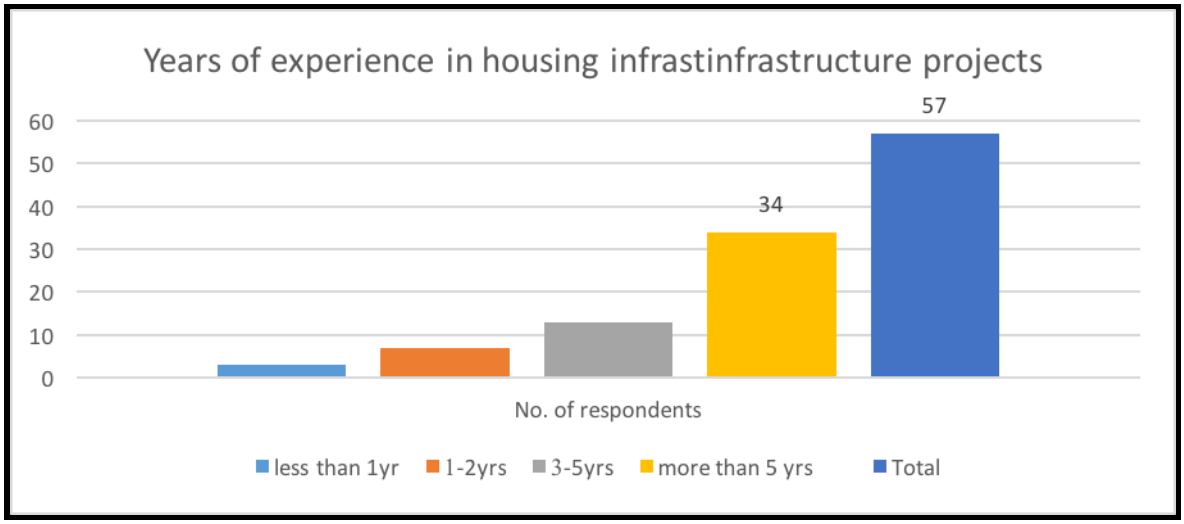
Source: Survey Data (ref Question A1)

4.4.2. Experience of Respondents

The research survey discovered that most people interviewed had vast experience in project management with regards to the matter under research. Out of the 57 respondents, 34 had more than 5 years' work experience in project management with regards to infrastructure development. Only a handful, 10 people had less than two years' experience working in infrastructure development. This augurs well with regards to the richness of the data and inferences drawn from their responses.

Figure 4 below depicts this picture graphically.

Figure 4: Years of Experience of Respondents



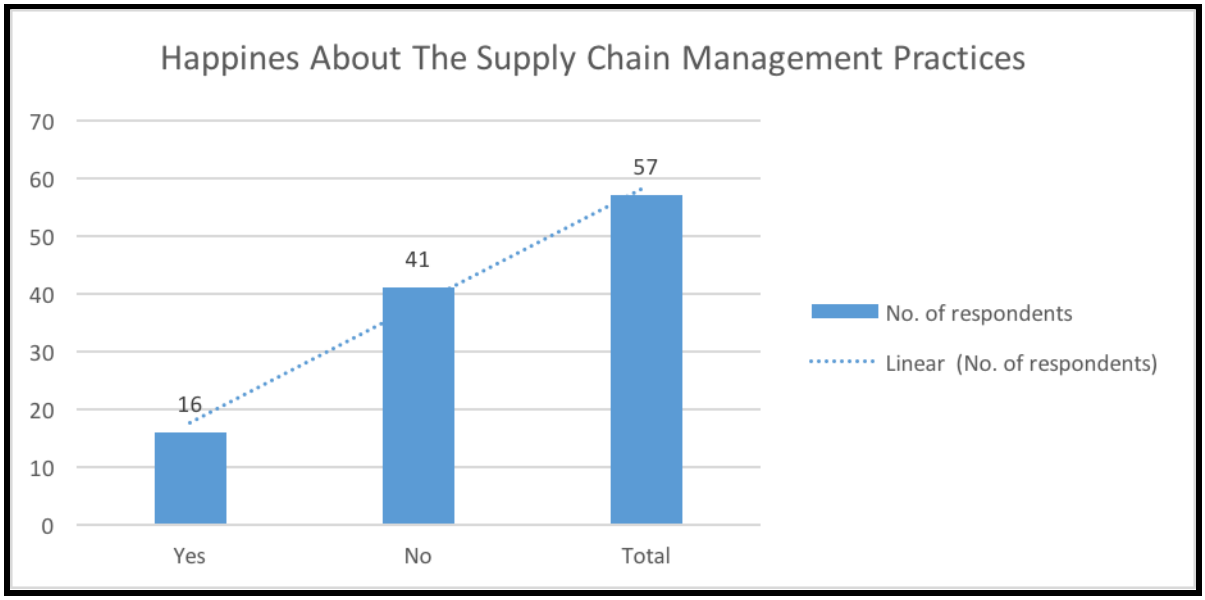
Source: Survey Data (ref Question A2)

4.4.3 Perception of Respondents with Regards Eastern Cape Department of Human Settlements Supply Chain Management Practice

An overwhelming 41 respondents out of 57 agreed that there are happy with the general supply chain management practices being implemented at the Eastern Cape Department of Human Settlement with regards to procurement of infrastructure related projects and programmes. These responses are instructive, as the set to prove that there is very little wrong in the ways ECDHS is implementing its procurement with regards to infrastructure projects. Conversely, 16 out of 57 respondents had their misgivings with regards to the way in which procurement is conducted in the Department.

Figure 5 below shows these results.

Figure 5: Respondents of Responses with Regards to ECDHS SCM Practices

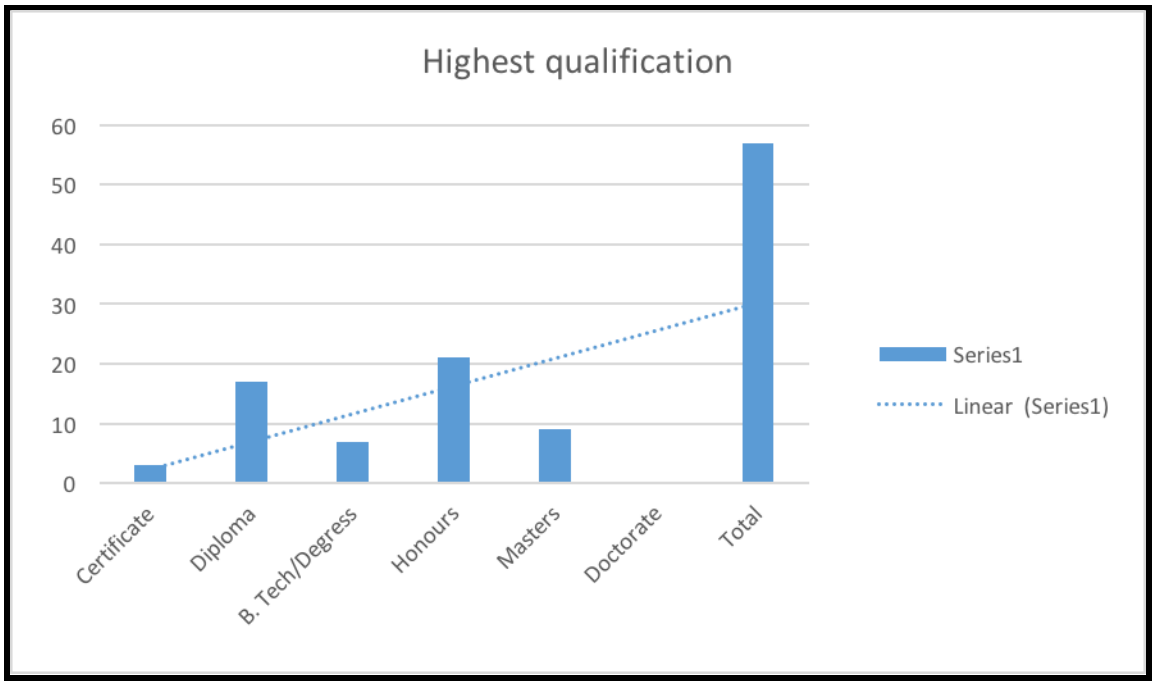


Source: Survey Data (ref Question A3).

4.4.4. Professional Standing of the Respondents

Qualifications refer to the highest level of education of the participants. The respondents' qualifications range from Certificates, National Diploma, Bachelor of Technology/ Degrees, Honours, Masters and Doctorate. Figure 6 below depicts the level of qualifications held by the respondents with about 68% holding a post-graduate qualification.

Figure 6: Professional Standing of the Respondents

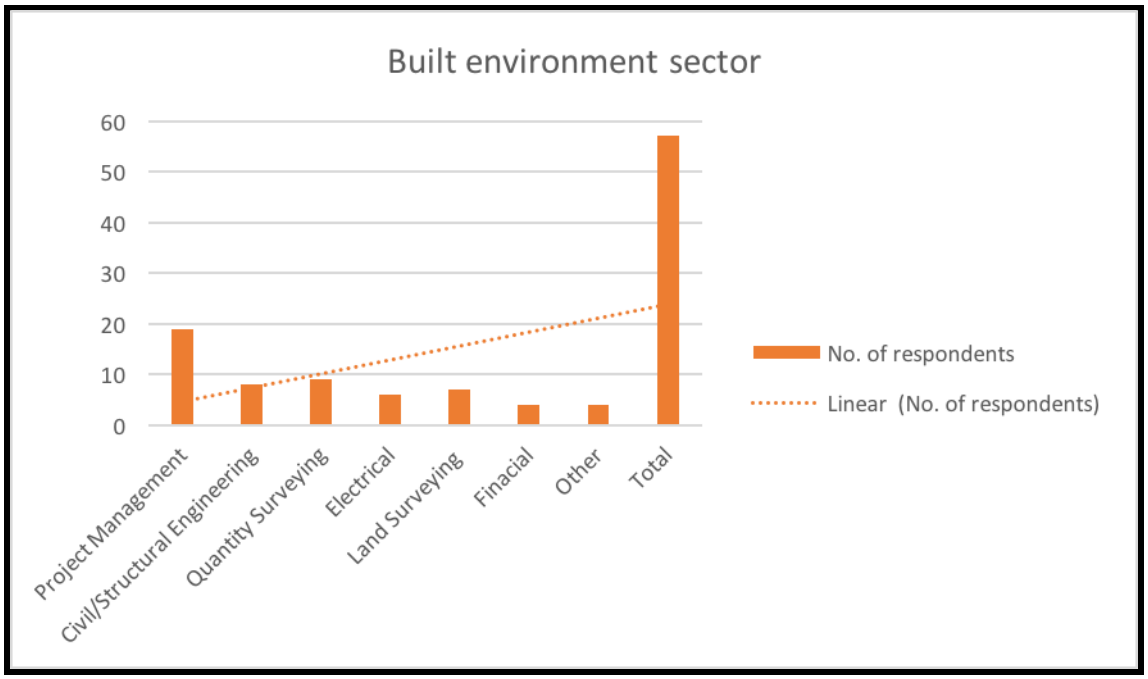


Source: Survey Data (ref Question A4).

4.4.5. Respondents Spread of Expertise

While the spread of expertise is not an essential determinant of this research, Figure 4.5 below shows that the respondents were solicited from all aspects of areas of specialty operating in the infrastructure development space. While most respondents are project managers, representing about 34% of the respondents, other areas of specialisation besides built environment practitioners were included, i.e. supply chain management staff and financial management officials.

Figure 7: Respondents Spread of Expertise



Source: Survey Data (ref Question A5).

4.5 Respondents Procurement Experiences

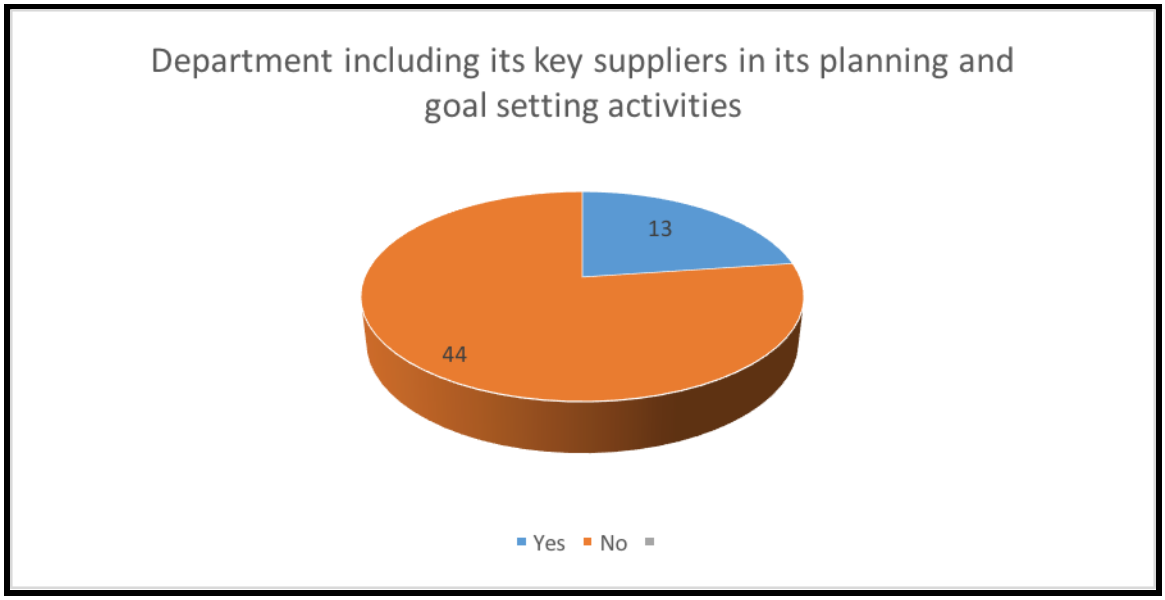
This section contains responses captured in section B of the questionnaire and elicits the way respondents feel around the procurement practices of the Eastern Cape Department of Human Settlements with regards to infrastructure development.

4.5.1 The Department Includes Its Key Suppliers in Its Planning and Goal Setting Activities.

This question was meant to ascertain whether the department includes its service provides in its planning and goal setting. The rationale behind this question was to check whether there is a common understanding between the department and its service providers. About 72% of the respondents agreed that indeed the ECDHS includes its key suppliers in its planning and goal setting while 28% of the begged to differ.

The pie chart in Figure 8 below depicts the responses.

Figure 8: Whether ECDHS Includes its Key Suppliers in Planning and Goal Setting

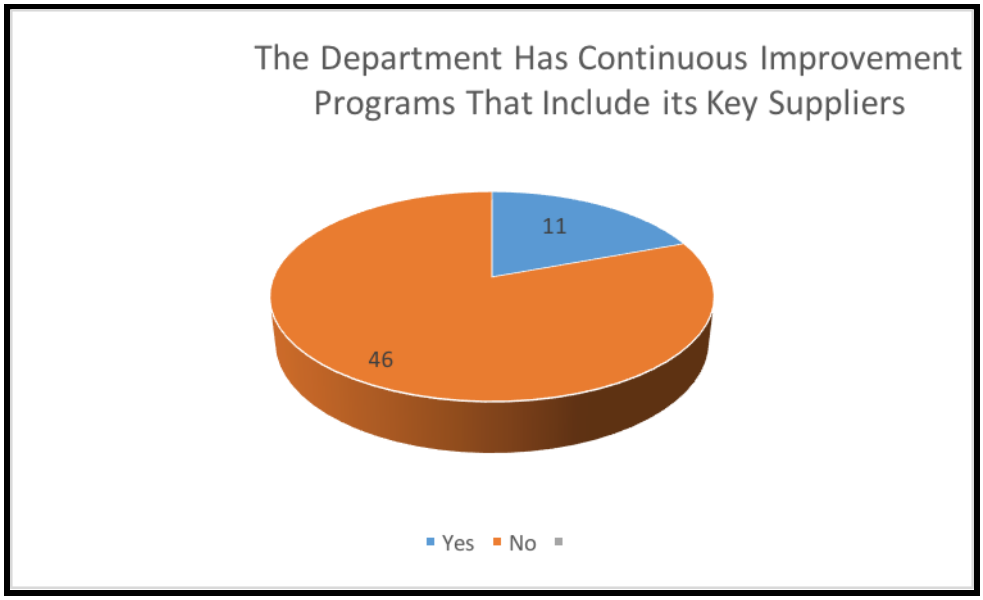


Source: Survey Data (ref Question B7).

4.5.2 The Department Has Continuous Improvement Programs That Include Its Key Suppliers

Same as 4.5.1 above, this question set to find out whether the department had an inclusive planning process with suppliers, set to avoid any challenges during implementation. About 81% of the respondents agreed that the department had programmes to ensure that there were continuous improvement programmes that included vital suppliers.

Figure 9: Whether ECDHS Has Continuous Improvement Programs That Include Its Key Suppliers



Source: Survey Data (ref Question B8).

4.5.3 The Department Helps Its Suppliers to Improve Their Product Quality

Same as 4.5.1 and 4.5.2 above, this question set to find out whether the department had an inclusive planning process with suppliers, fixed to avoid any challenges during implementation for the later to understand the necessary quality requirements of the former. Worryingly the survey results indicate that the Eastern Cape Department of Human Settlements does not have programmes in place capacitate its suppliers. This then leaves its suppliers with little skilling to perform the task the department expects from them.

Figure 10: Whether ECDHS Helps Its Suppliers to Improve Their Product Quality



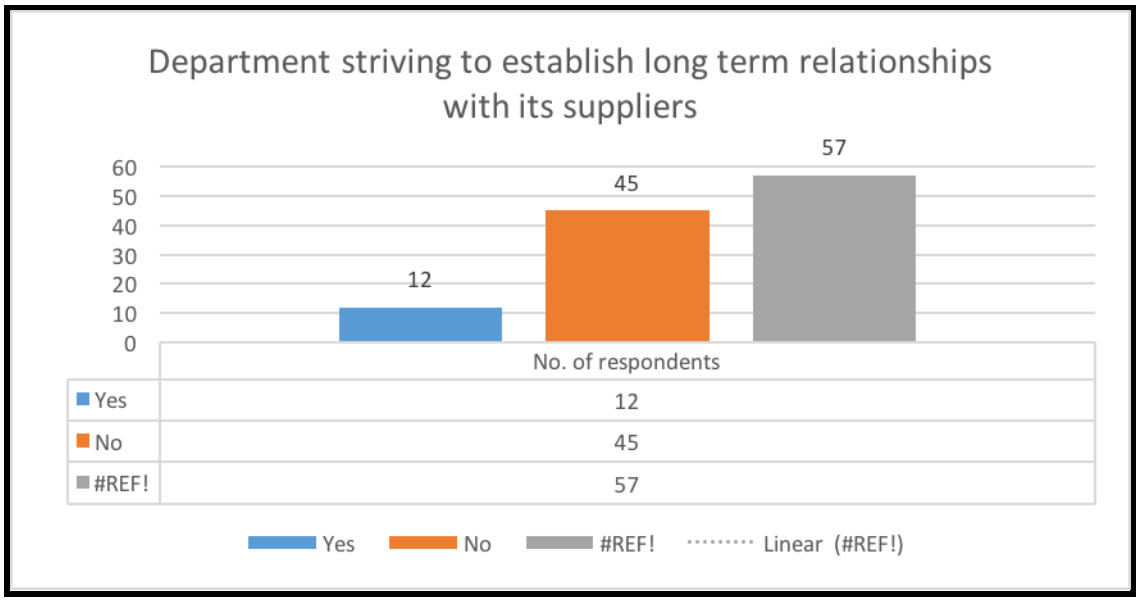
Source: Survey Data (ref Question B9).

4.5.4 The Department Strives to Establish Long-Term Relationships with Its Suppliers

Worrying the survey results reveal that like in 5.5.3 above the Eastern Cape Department of Human Settlements does not have any plans or programmes in place to ensure that its relationship with its suppliers is improved.

The figure 11 below sums up these results.

Figure 11: Whether ECDHS Strives to Establish Long-Term Relationships with Its Suppliers

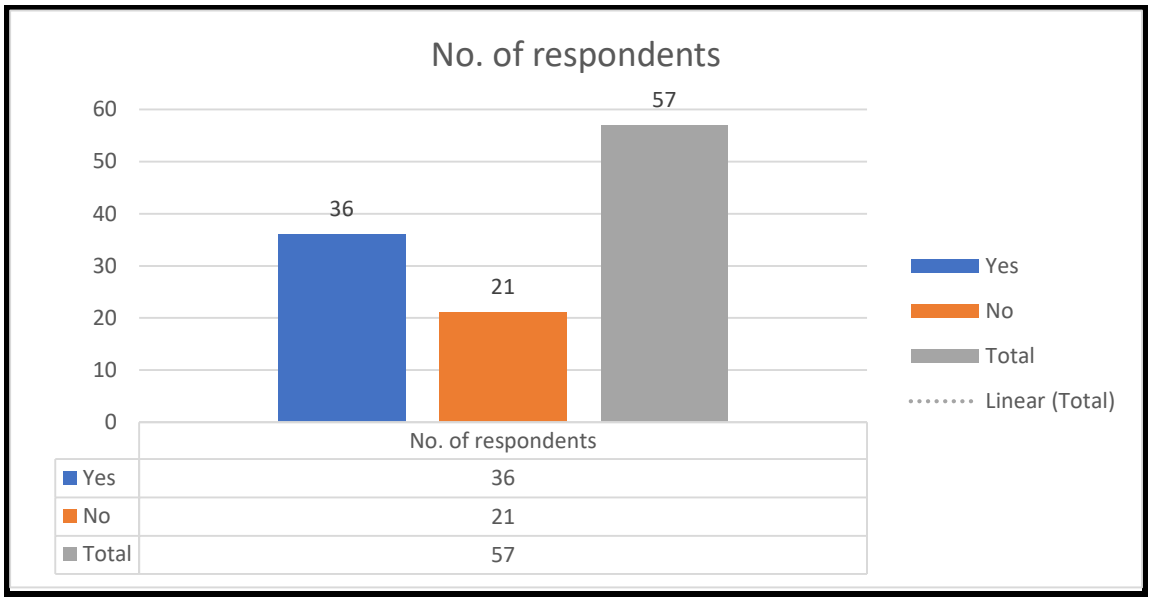


Source: Survey Data (ref Question B10).

4.5.5 The Department Relies on Few High-Quality Suppliers

The survey results indicated that the Eastern Cape Department of Human Settlements relies on a few numbers of quality suppliers to render their services. This then puts the department under pressure if those limited suppliers are unable to provide services and more so its puts the department under a high risk with the auditors and other supply chain management prescripts that require the supplier to be varied and multiple to ensure equal beneficiation of suppliers. About 61% of the respondents pointed out that the ECDHS utilises a few high-quality suppliers at the expense of others while about 39% perceives this differently.

Figure 12: Whether the ECDHS Relies On Few High-Quality Suppliers

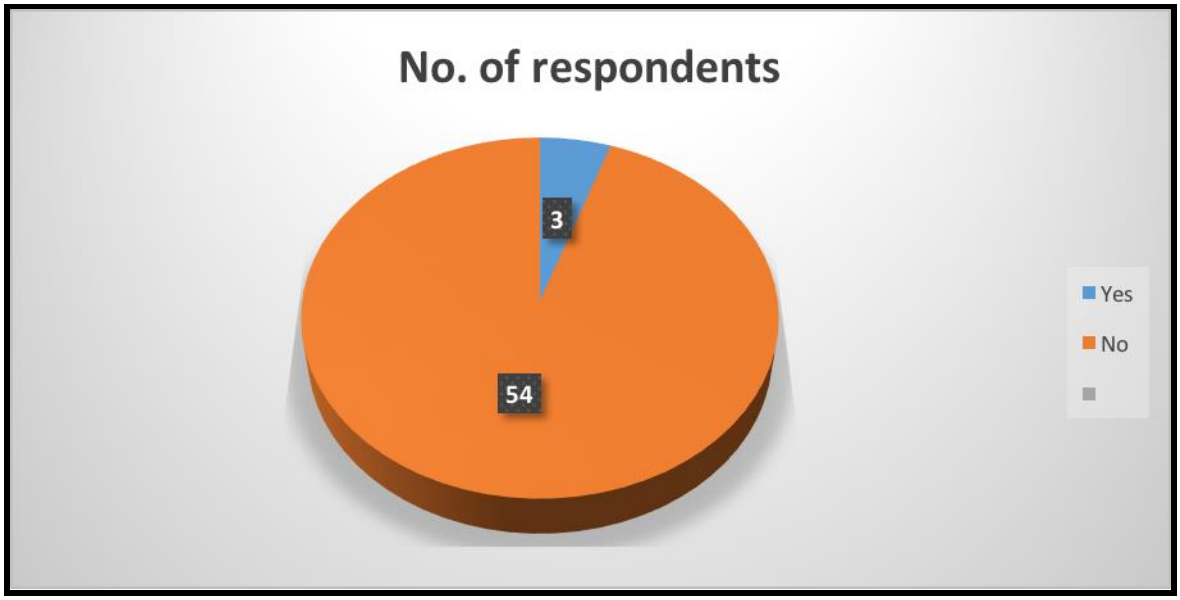


Source: Survey Data (ref Question B11).

4.5.6 The Department Actively Involving Its Key Suppliers in New Product Development Processes

The survey results indicated that the Eastern Cape Department of Human Settlements actively involves its crucial supplier in the new product development process. An overwhelming majority, about 95% concurred.

Figure 13: Whether ECDHS Actively Involving Its Key Suppliers In New Product Processes

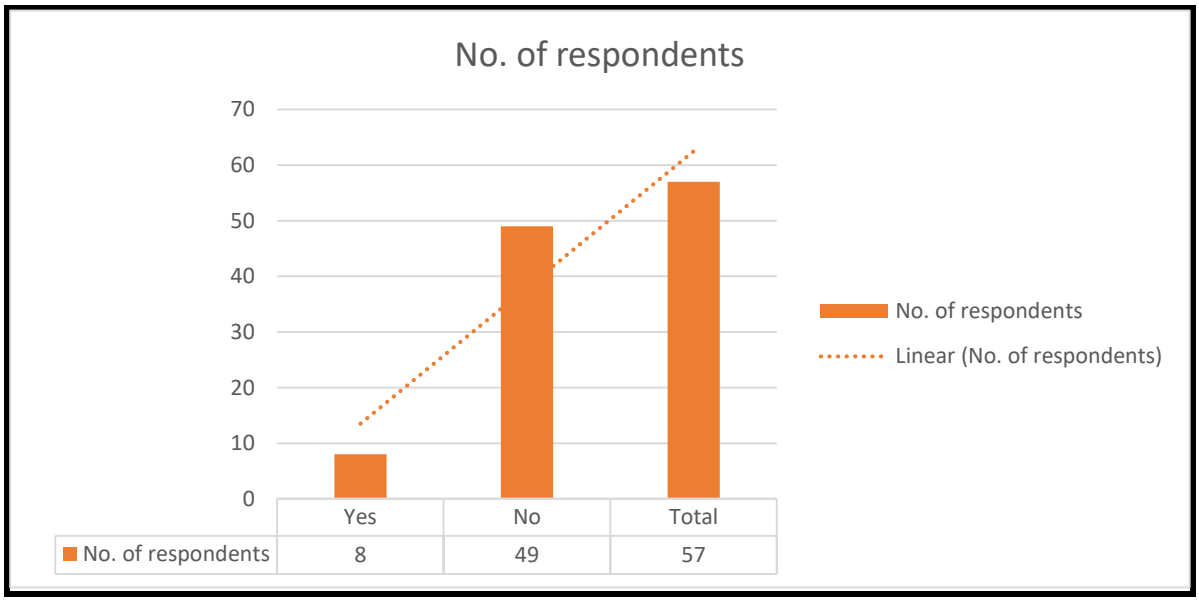


Source: Survey Data (ref Question B12).

4.5.7 The Department Regularly Solve Problems Jointly with Its Suppliers

The survey results show that most respondents feel that the Eastern Cape Department of Human Settlements does not solve supply chain management problems joint with the supplier. An overwhelming majority of about 86% felt that way. While certain Supply Chain Management prescripts dictate that there is a need for confidentiality with regards to the aspect of procurement, the researcher thinks that there is a need for ECDHS to strike a balance between privacy and joint problem solving for the good of the department procurement performance.

Figure 14: Whether ECDHS Regularly Solves Problems Jointly with Its Suppliers

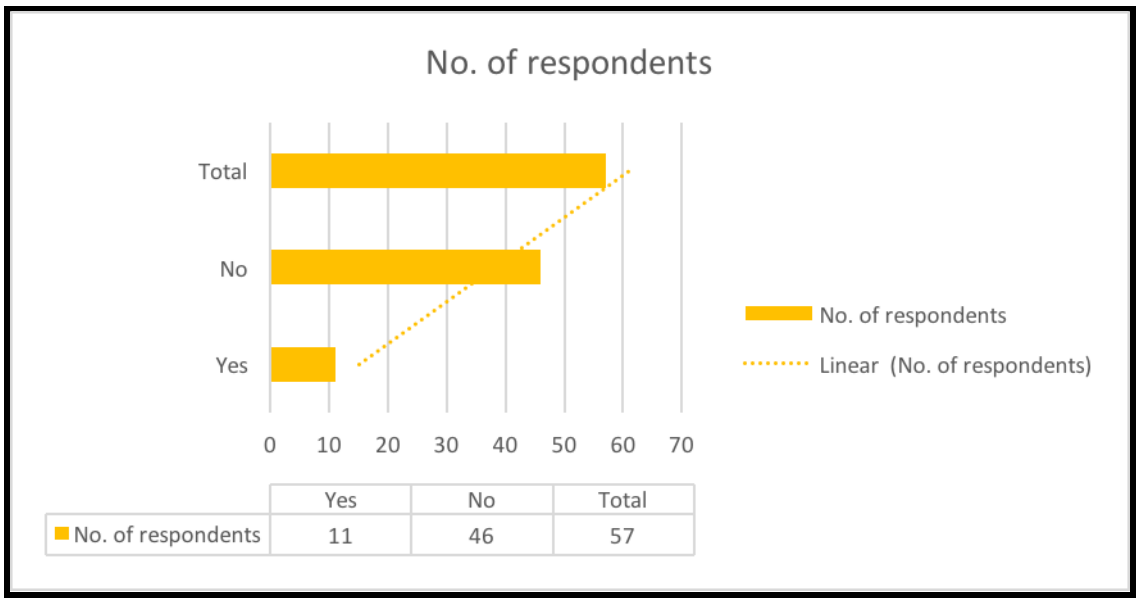


Source: Survey Data (ref Question B13)

4.5.7 The Department Frequently Interacts with Suppliers to Set Its Reliability, Responsiveness, and Other Standards

The survey results show that most respondents feel that the Eastern Cape Department of Human Settlements does not frequently interact with suppliers to set its reliability, responsiveness, and other standards. An overwhelming majority, about 81% felt that way. Figure 15 below illustrates these results.

Figure 15: Whether ECDHS Frequently Interacts with Suppliers to Set Its Reliability, Responsiveness, and Other Standards



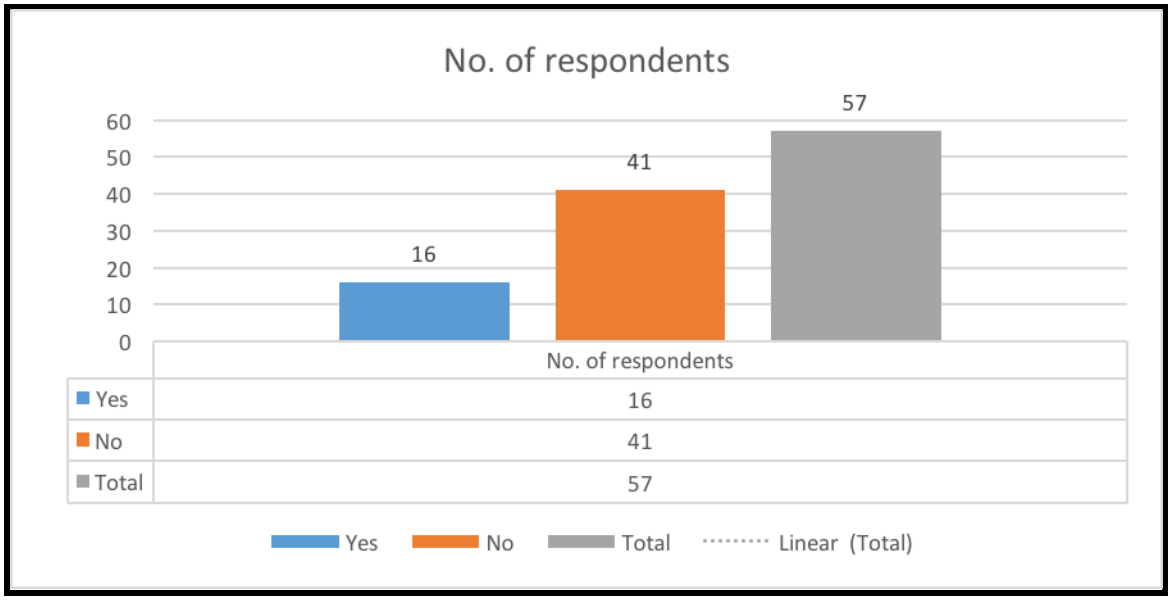
Source: Survey Data (ref Question B14)

4.5.8 The Department Measuring and Evaluation of Supplier Satisfaction

The survey results show that most respondents feel that the Eastern Cape Department of Human Settlement does not Measure and Evaluation of Supplier Satisfaction at all. An overwhelming majority, about 71% felt that way. The researcher feels this lack of care of how supplier thinks with regards to ECDHS offerings does not help improve the way the department offers its infrastructure service.

Figure 16 below illustrates these results.

Figure 16: Whether ECDHS is Measuring and Evaluating Supplier Satisfaction



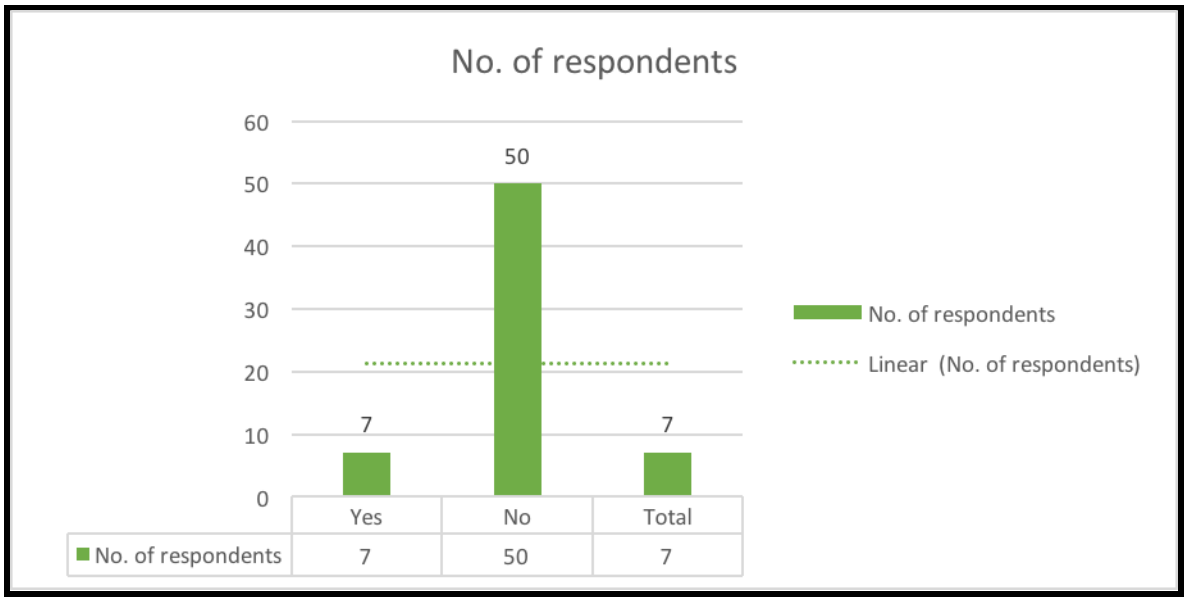
Source: Survey Data (ref Question B14)

4.5.9 The Department Frequently Evaluating the Formal and Informal Complaints of Its Suppliers

The survey results show that most respondents feel that the Eastern Cape Department of Human Settlement does not frequently evaluate the formal and informal complaints of its suppliers. An overwhelming majority, about 88% felt that way. The researcher feels this lack of care of how supplier thinks with regards to ECDHS offerings does not help improve the way the department offers its infrastructure service.

Figure 17 below illustrates these results.

Figure 17: Whether ECDHS Frequently Evaluates the Formal and Informal Complaints of Its Suppliers



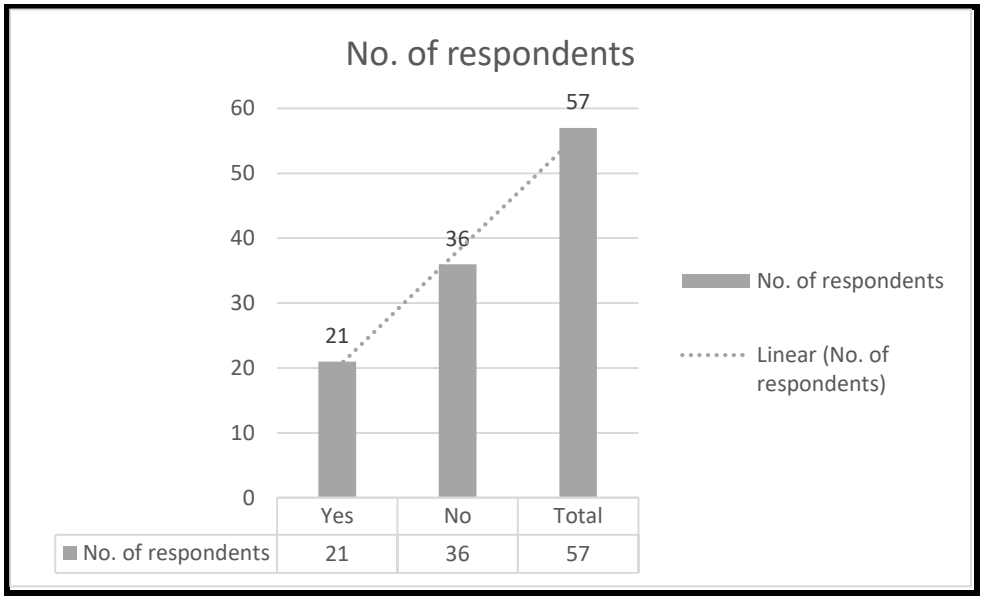
Source: Survey Data (ref Question B17)

4.5.10 The Department Has Continuous Quality Improvement Programmes with Suppliers

The survey results show that many respondents expressed feel that the Eastern Cape Department of Human Settlements does not have continuous quality improvement programmes with suppliers. An overwhelming majority, about 64% felt that way. The researcher feels this lack of care of how supplier thinks with regards to ECDHS offerings does not help improve the way the department offers its infrastructure service. This lack of attention has tale-tell signs of an organisation that is not at the center of improving its service delivery.

Figure 18 below illustrates these results.

Figure 18: Whether ECDHS Has Continuous Quality Improvement Programmes



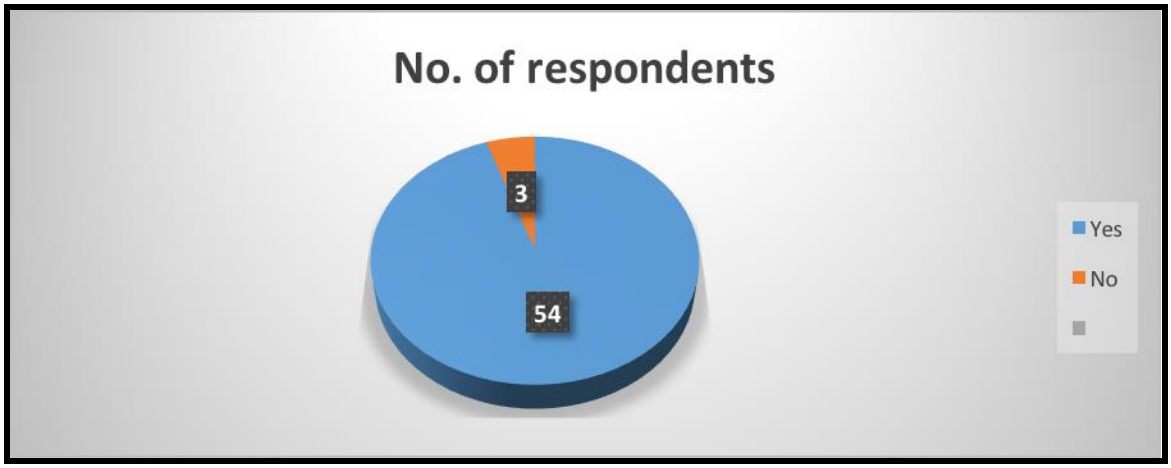
Source: Survey Data (ref Question B18)

4.5.10: The Department Streamlines Ordering, Receiving and Other Paper Work from Its Suppliers

The survey results show that most respondents feel that the Department of Human Settlement does streamlines ordering, receiving and other paperwork from Its suppliers. An overwhelming majority, about 95% felt that way. These results are encouraging and augur well with regards how procurement of infrastructure development is conducted.

Figure 19 below illustrates these results.

Figure 19: Whether ECDHS Streamlines Ordering, Receiving and Other Paper Work from Its Suppliers



Source: Survey Data (ref Question B20)

4.6 Supply Chain Integration

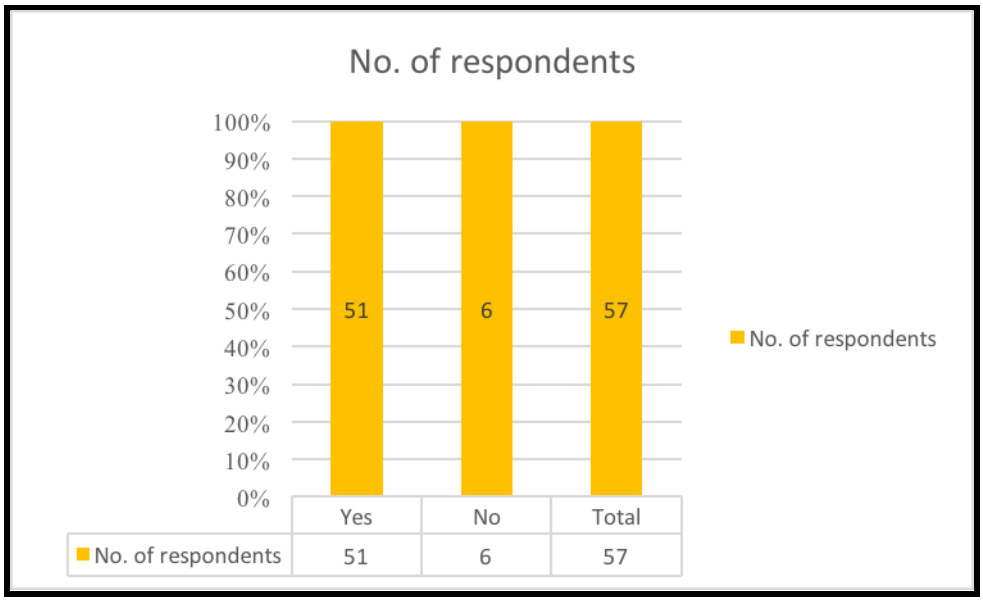
This section contains responses captured in section C of the questionnaire and elicits the way the supply chain management unit operates.

4.6.1 The Department's Supply Chain Members Have Common, Agreed to Goals for Supply Chain Management

The survey results show that many respondents feel that the Department of Human Settlement's Supply Chain Members Have Common, Agreed to Goals for Supply Chain Management. The results reveal a presence of a common and shared understanding of how the SCM practices are conducted without eliciting some forms of an individual sense of inconsistencies that can be transmitted to suppliers and consequently hinder service delivery. An overwhelming majority, about 89% felt that way. These results are encouraging and augur well with regards how procurement of infrastructure development is conducted.

Figure 20 below illustrates these results.

Figure 20: Whether ECDHS Supply Chain Member Have Common, Agreed to Goals for Supply Chain Management



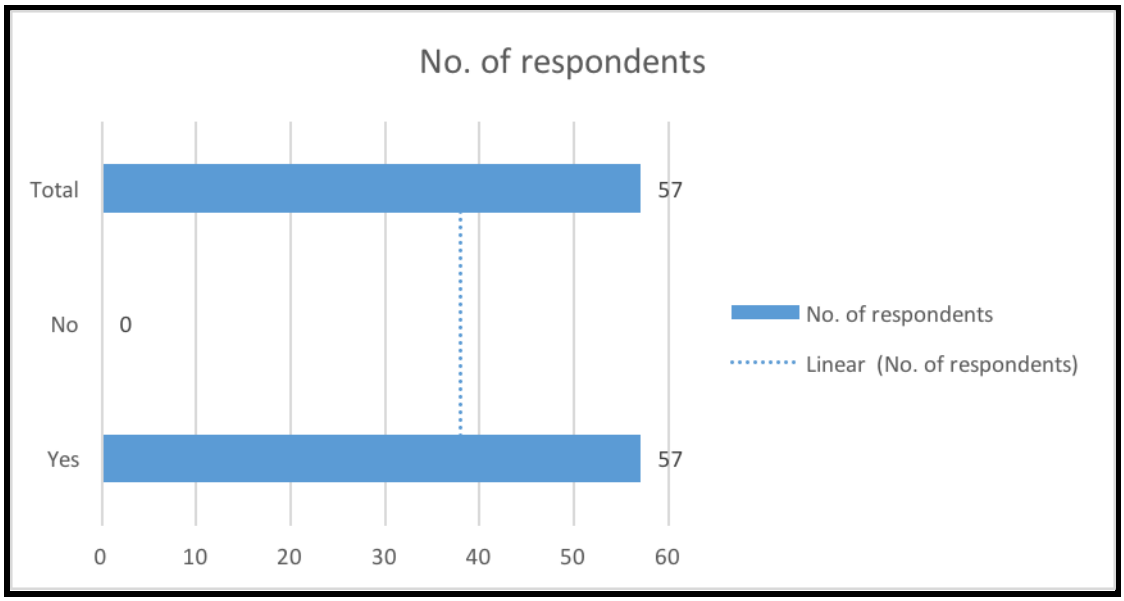
Source: Survey Data (ref Question C23)

4.6.2 The Department's Supply Chain Members Are Actively Involved in Standardizing Supply Chain Practices and Operations

The survey results show that many respondents feel that the Department of Human Settlement's Supply Chain Members Are Actively Involved in Standardizing Supply Chain Practices and Operations. Like in 4.6.1 the results reveal a presence of a common and shared understanding how the SCM practices are conducted without eliciting some forms of an individual sense of inconsistencies that can be transmitted to suppliers and consequently hinder service delivery. This is evident in the 100% affirming rate. These results are encouraging and augur well with regards how procurement of infrastructure development is conducted.

Figure 21 below illustrates these results.

Figure 21: Whether ECDHS's Supply Chain Members Are Actively Involved in Standardizing Supply Chain Practices and Operations



Source: Survey Data (ref Question C23)

Section D: Forward-Looking

This section is an analysis of open-ended questions; respondents were granted an opportunity to express their views on the procurement challenges. Some of the responses to open questions are cited verbatim below.

Question 27 - What are the specific challenges that have encountered/identified in the procurement process?

> *"Procurement takes a long time Procurement strategy to the appointment of a supplier or contractor "(Respondent 1).*
>
> *"Submitting incomplete documentation for tendering purpose and it is approved for further processes. No proper evaluation of tender documents- do the arithmetic checks, control factors" (Respondent 5).*
>
> *"The Department has not fully implanted the streamlined approach in SCM to ensure that all necessary compliance issues are managed, and contractors and suppliers have been pre-approved to limit the time between*

appointments and commencement of projects. There is no clear approach to replace contractors when terminations or when contractors abandoned sites or to deal with urgencies and emergencies. The entire SCM process needs to be aligned to construction value chain" (Respondent 7).

“Appointment of contractors with little resources for execution of work on site. Appointment of contractors that priced at a lower amount compared to others” Respondent 12).

"The procurement system was meant to facilitate the supply of consumables and is unsuited for long-term construction projects. PPPFA is not useful at all in the construction industry. In most cases, the same contractors are appointed, again and again even if they are the performers! Surely a system that continues to select the bad apples only is not fit for purpose" (Respondent 14.

Question 28 - What do you think are the causes of challenges identified in Question 27?

"The main problem is PFMA and MFMA is not specific enough to infrastructure and construction-related entities and Departments. There must be a separate framework to govern the construction-related Departments and entities" (Respondent 7).

"Projects are to via provincial treasury for approval, and they also take their time. No database that can be used each time you are to procure afresh" (Respondent 9).

“These SMME’s lack capacity, knowledge and skills on the processes to be followed” (Respondent 13).

Question 29 - What possible solutions would you propose to address these challenges?

"Go back to initial standard procurement processes where the integration of these verifying evaluating committees complements each other and easily manage risk. Contract document-When is managing a project; it becomes very challenging when contract documents contain incomplete documentation. When submitting a summary breakdown of finances and not providing a detailed bill of quantities that substantiate the final amount. The above cripple's quality monitoring standards, alignment of house plan specification with what has been priced by the supplier during implementation" (Respondent 5).

"Creation of database by pre-qualification and appointment in advance, where service is required than can request pricing or quotation from contractors on database" (Respondent 9).

"Reduce committees and stick to scheduled times. Have an electronic system for submissions to committees and Treasury. Time frames for the Treasury to be monitored" (Respondent 2).

"Amendment of procurement laws to address challenges in construction. Amendment bill in place already at the legislature to address this" (Respondent 14).

Table 4: Responses to Question 30

Do you feel that the Department's Supply Chain Management Process is fair and business enabling**?**	YES	NO
	76%	24%

Question 31 – Explain your answer in Question 30

"It is not clear how everything is handled within the section, and it is distant to implementers. No presentation or road shows to regions to explain the process to assist implementers. Implementers always have to ask supply chain on everything no regular feedback "(Respondent 1).

"The bid committees must be de-centralised to ensure equal contribution with tighter controls, and the Department must implement the contractor framework to ensure the fair and transparent appointment of suitably qualified and regional based contractors "(Respondent 7).

"It keeps selecting the same contractors with multiple projects. It keeps selecting poor performers back into the production line. The procurement system does not penalise non-performance. It would appear as if the system rewards non-performance. 3 months' adverts, 3 months' procurement and 3 months to appoint means it takes too long to respond to a blocked project, hence exposes the plan to vandalism and wasteful expenditure. The 90/10 or 80/20 regulations place too much emphasis on price yet cheap is not always the best option" (Respondent 14).

"Delays in procurement process impact negatively to recipients of the service due to time it takes before the appointment of the service provider. The process is fair it's just time consumed during the procurement process "(Respondent 9).

"All business categories are accommodated, and there is no favour to those who do not want to comply. Processes are always fair and are not compromising quality" (Respondent 13).

Responses to Question 32 - Any recommendations to Question 31?

"Pre-qualification of service providers through open procurement process in advance, the creation of a database in advance so that turn-around time can be shortened for an appointment and contracting "(Respondent 9).
“Presentation to regions and explain the process. Regular feedback on the processes or have a system where everyone can check progress “(Respondent 2).

"No contractor must be appointed on any other project until they complete what they have been awarded first. Contractors who default or fail to finish a project must be banned or given cooling off periods say 3 or 5 years before they can bid again. Department must establish a pool of reliable suppliers in the long term "(Respondent 14).

"The processes of the supply chain should stick and respond properly on the supply chain management framework. The processes have to ensure efficiency, effectiveness, fairness and transparency "(Respondent 13)

“Public sector practices should be implemented, monitored, given strict measures, evaluated on its compliance and quality “(Respondent 5).

4.7 Comparison of two procurement strategies in use at ECDHS: Turn-Key Approach and Traditional Method.

The table 4.2 below depicts the number of selected projects according to the procurement strategy utilised to implement them. The researcher was comparing the applicable variation in time and budget, implementation efficiencies and the coordination challenges as articulated by the respondents and the captured data.

Table 4: Comparison of Procurement Strategies: Turn-Key vs Traditional Strategy

	Procurement Strategy Used – Turnkey Approach									
Project No.	**Region**	**Project Name**	**Project Duration**	**Project Start Date**	**Anticipated Project Completion Date**	**Revised Project Completion Date**	**Approved Budget**	**Actual Budget at Completion**	**Number Variation Orders**	**Any Notes/ Comments**
1	O.R Tambo District	Rectification of 702 Units in Zimbane Valley		2014/07/30	2016/07/31		R89 867 491,62			
2	O.R Tambo District	Appointment as a Turnkey Contractor for the Construction of 500 Units in Holly Cross and 347 in Ingquza		2014/06/18	2015/09/19		R81 693 150,00			
3	Amathole District	Additional to the construction of 753 housing units and VIP toilets in Dutywa		2015/01/14	2016/02/14		R5 916 908,34			
4	Amathole District	Peddie 23		2015/01/29	2015/03/30		R1 069 684,48			

5	Buffalo City Metropolitan Municipality	Ndevana 1478 (739 Units)	18 Months	2015/03/30	2016/09/30	Revised 31/03/2019	R103 004 679,93	R 25 504 745	R0,00	The project has encountered critical delays on approvals/challenges during planning activities which resulted in the extension of the contract until 31 March 2019.
6	Buffalo City Metropolitan Municipality	Appointment as Turnkey Contractor for Construction of 500 units at Tshabo		2017/03/06	2019/03/06	NIL	R64 403 000,00	R 42 356 913	R0,00	The project is progressing very well.
7	Sarah Baartman District Municipality	Construction of 85 and Indirect Costs to the Same Number of Units in Willowmore		2014/08/19	2015/02/20	2018/12/31	R9 404 956,75		R0,00	The project is under construction

		(88) 85 In Baviaans								
8	Sarah Baartman District Municipality	Turnkey Project for installation of 407 Services and construction of 391 units at Kruisfontein in Kouga		2016/07/01	2018/07/01	2018/11/31	R66 602 848,15		R0,00	The Project is under construction
9	Chris Hani District Municipality	Appointment of a Turnkey Contractor for construction of 690 units at Ilinge in Lukhanji	24 Months	2017/02/27	2019/02/27	2021/02/27	R96 389 550,00	R96 389 550,00	R0,00	Contractor not yet commenced since they are still busy with planning processes. The contractor had anticipated commencing on site in April 2019.
10	Chris Hani District	Nkondlo and Goboti 300 Housing	24 Months	2014/06/02	2018/06/03	2018/09/30	R67 200 000,00	R92 951 040,00	2	There are two Variations Orders

	Municipality	Projects- Appointment of a Turnkey Contractor for the Construction of 500 Units								approved for Norms & standards and Double Handling &Difficult Terrain. Project scope reduced from 800 to 600 units due to over commitments of the Region.
11	Joe Gqabi District	Demolition and Rebuild of 140 units and Installation of Internal Services at Dukathole	12 Months	03/10/2014	03/11/2015	31/12/ 2018	R24 205 552.00	R26 798 109.90	1	The project encountered various challenges. A condonation will be requested since the extended period expired.
12	Joe Gqabi District	Rectification of 118 units in Burgersdorp	12 Months	30/08/2015	03/09/2016	31/12/ 2018	R22 665 350.00	R22 665 350.00	1	The project encountered various challenges. A condonation will be requested

										since the extended period expired.
13	Nelson Mandela Metropolitan Municipality	Steve Biko Munford Social Housing Project for Refurbishment and Conversion of 220 units		2016/06/13	2018/03/13		R35 408 304,99			
14	Nelson Mandela Metropolitan Municipality	A funding agreement for Walmer EPHP		2016/08/12	2017/03/01		R69 475 349,80			
15	Alfred Nzo District Municipality	Extension of scope to include 50 more units in the Construction of 500 units in Masakala		2016/10/19	2017/10/19		R6 992 500,00			

16	Alfred Nzo District Municipality	Thaba Chicha 500 Housing Project- Construction of 500 Units		2016/11/19	2017/03/19		R5 898 035,73			

	Procurement Strategy Used – Traditional Method									
Project No.	**Region**	**Project Name**	**Project Duration**	**Project Start Date**	**Anticipated Project Completion Date**	**Revised Project Completion Date**	**Approved Budget**	**Actual Budget At Completion**	**Number Variation Orders**	**Any Notes/Comments**
1	O.R Tambo District	Chulunca 300 units		2012/07/19	2013/10/20		R22 989 144,20			
2	O.R Tambo District	Dimfi 500 & Mpoza 500 subs		2012/10/30	2013/10/30		R97 333 160,00			
3	Amathole District	Butterworth - 282 Rectification (Phase)		2011/05/23	2011/11/23		R12 471 536,20			
4	Amathole District	Elliotdale 1000 subs		2012/01/17	2012/03/17		R92 137 393,00			
5	Buffalo City Metropolitan Municipality	Mdantsane N.U 12 ERF 1691, 1 unit	1 Month	2012/03/19	2012/04/20	NIL	R81 996,57	R 81 996.57	R0,00	The project was completed with a great record.
6	Buffalo City Metropolitan Municipality	Tsholomnqa 20 units	3 Months	2015/01/17	2015/04/17	NIL	R2 115 340,00	R 2 115 340	R0,00	The project was completed without any challenges.

7	Sarah Baartman District Municipality	Transit Camp 27 subs		2010/04/09	2010/07/09		R2 102 197,00		R0,00	Project is complete
8	Sarah Baartman District Municipality	Transit Camp 26 Subs		2010/04/09	2010/07/09		R2 024 338,00		R0,00	Project is complete
9	Chris Hani District Municipality	Tarkastad, Khayalethu - Tendergate 1101	24 Months	2009/04/16	2013/03/19	2013/03/19	R74 715 427,76	R74 715 427,76	R0,00	Project Completed and closed Off
10	Chris Hani District Municipality	Tarkastad - Mitford 700 subs (Phase 1)	25 Months	2009/03/26	2012/11/19	2012/11/19	R45 447 646,00	R44 300 307,48	R0,00	Project Completed and closed Off
11	Joe Gqabi District	Katkop 500		2013/09/30	2014/10/01		R53 589 216,00			
12	Joe Gqabi District	Mangoloaneng 365		2013/09/02	2014/08/03		R39 624918,30			
13	Nelson Mandela Metropolitan	PE: Joe Slovo 192 subs		2011/09/18	2012/01/18		R15 183 331,20			

	Municipality									
14	Nelson Mandela Metropolitan Municipality	SomersetEast, Old Mnandi Township 93 pre - 1994North for 1585 subs		2013/06/03	2013/10/04		R8 687 572,47			
15	Alfred Nzo District Municipality	Matatiele Harry Gwala 583 Subs (Top structure)		2011/03/10	2013/11/29		R6 746 590,67			
16	Alfred Nzo District Municipality	Mount Frere Extension 7		2011/02/08	2011/11/09		R8 213 346,90			

4.7.1 Findings

The research found that the turn-key procurement strategy is superior as compared to the traditional procurement methods for the following reasons:

- Although the table above shows the presence of budget variation in both procurement strategies, it is evident that there is minimal budget variation in the turn-key method as compared to the traditional method (See chapter 1 for the definition). The number of budget variations evident in the traditional procurement methods poses some implementation inefficiencies to the project.
- Although the above table could not estimate the mean time variation between the two procurement strategies, it evident that the traditional procurement has high time variation likelihood.
- There are also some coordination challenges with the traditional method as compared to the turn-key method (see field notes).
- According to the three assessment criteria, the turn-key [procurement method had proven to be a better and efficient method as compared to the traditional procurement method].

4. 8 Conclusion

The chapter dealt with data collection results after analysing the collected field data. This was done by examining information from the distributed survey questionnaires. The primary data which are direct experiences from participants enabled the researcher to discuss results, analyse findings and make recommendations in the next chapter. The recommendations will assist Eastern Cape Department of Human Settlements in future planning for effective and efficient implementation of housing projects.

CHAPTER 5: DISCUSSION OF RESULTS

5.1 Introduction

Achieving project success in a construction project is the goal of that motivates for its undertaking. Factors such as timeous delivery or completion of a project, curbing of the occurrence of escalated costs and delivering of a completed project of durable quality, are all indicators of project success. The results were obtained through the existing literature and the questionnaires disseminated to the respondents of this study. As was discussed in the introduction, this research conducted aimed to deal with the procurement challenges that are evident in the delivery of integrated, sustainable housing infrastructure projects in the Eastern Cape Department of Human Settlements. The objectives of the study were to evaluate the process of planning departmental procurement, to understand the scheduling of infrastructure, to determine the purpose of infrastructure projects in the department of human settlement and lastly to evaluate the infrastructure in housing projects. Key indicators that reveal the existence of procurement challenges in the timeous delivery of sustainable low-income housing projects lie in the fact that 1) there exists a shortage of skills amongst the staff of the Eastern Cape department of human settlements. Another indicator that reveals the reason for challenges in the implementation of effective procurement strategies is the fact that most organisations do not implement career programs in the supply chain management and the construction industry. This chapter presents discussions regarding the results of this study which include interpretations of this study's results in addition to the significance of the findings. The main findings of this research are then discussed about the findings derived from existing scholarly literature.

5.2 Explanation of results

From the respondents interviewed both management and employees were aware of the procurement challenges in housing infrastructure projects and the inadequate supervision and monitoring of staff's procurement knowledge and training existed. The results of this also indicate that the lack of supervision can be addressed to eliminate time wasting, non-productivity and poor performance amongst staff. It is of the best interest of supply chain management to, therefore, implement systematic and strategic guidelines that are aimed towards the development of employees' skills. The critical result of this study emanates from an investigation into the occurrence of the Eastern Cape department of human settlements poor delivery record when it comes to the delivery of integrated sustainable housing projects. The poor delivery record is evident, and its prevalence can be traced over an 18-year period. The use of poor procurement strategies is one of the main reasons for this problem. The questionnaires that were disseminated dealt with issues of background information, procurement experiences, the nature of supply chain integration and strategies for future improvement. Before this shall be discussed in detail, it is important to first explain the possible reasons for the high response rates of this study. Discussing the reasons for the high response rate sets the tone for the credibility of the results and the discussions surrounding these findings.

5.2.1 Reasons for high response rate in the study

The number of respondents per region for this study was enough since 83.36 % of the respondents were able to participate. This indicated a non-response rate for 13.64%. There were 9 regions that this study targeted for responses. Joe Gabi, Head office, Amatole, Alfred Ndizo, Sarah Baartman, Chris Hani, Nelson Mandela Metropolitan, Buffalo city metropolitan and OR Tambo International Airport. Many of the targeted respondents made a significant contribution in actively partaking in this study. The results of the high participation rate were expected because the study contained issues that were particularly salient to the respondents' nature of work. Head office recorded the least number of participants that responded to the close-ended questionnaire of this study. This is attributed to the availability of the respondents from

the head office. Overall, the high response rate can be attributed to the fact that most of the respondents held qualifications in the form of certificates, diplomas, B. tech and degrees, honours and masters, and as a result acknowledged the importance of knowledge contributions by partaking in this study. The findings of the study record that 68 percent of the respondents held post-graduate qualifications. Having a postgraduate qualification may indicate that the postgraduate qualification holders understanding of how important it is for people to partake in a research study. Since post-graduate qualification holders have undertaken one form of research or another, they are mindful of the importance of to 1) identifying problems and bringing about solutions to solve those problems. Postgraduate qualification holders are also aware of the importance of making significant contributions to academic literature by allowing the exchange of knowledge between the scholar (researcher) and the practitioners (respondents) via communication.

5.2.2 Perception of Respondents Regarding ECDHS Supply Chain Management Practice & Procurement Experiences

Supply Chain Management (SCM) forms an essential aspect of procurement in the South African public sector. The use of SCM as a tool for the management of public procurement practices is greatly acknowledged. From the findings in chapter four reveal that 41 respondents out of 57 approved that they were satisfied with the general supply chain management practices being implemented at the Eastern Cape Department of Human Settlement regarding the procurement of infrastructure related projects and programmed. It was only a small number of respondents that had their doubts regarding the way that the ECDHS conducted the implementation of their procurement strategies. The high response rate regarding this issue is an indication that there is nothing deficient about the way that the ECDHS was implementing its procurement strategies when it came to the execution of infrastructure projects. However, the fact that a handful of the respondents had their doubts is a clear indication that there is indeed room for improvement when it comes to how the ECDHS implement their procurement strategies.

5.2.3 Aspects of Stakeholder inclusivity by ECDHS

One of the reasons for the satisfaction of the supply chain management practices is the nature of inclusiveness that the department ensures when it comes to providing stakeholders involvement. There seems to exist a common understanding between ECDHS and its stakeholders especially in its planning and goal setting activities since 72 % of the respondents agreed that the ECDHS did include their critical suppliers in planning and goal setting. The remainder (28%) of the respondents, however, begged to differ when it came to this issue. The issue regarding stakeholder inclusivity which respondents agreed upon was the lack of existence of a program that ensured that the relationship with ECDHS and their suppliers experience continuous improvement. Regarding the occurrence of jointly solving problems with their suppliers, it was found that the ECDHS did indeed

5.3 Reference to Existing Research

About the objectives of the study, the first objective which is to determine the factors that have been affecting the successful delivery of housing projects, it has been decided that there are indeed bottlenecks to the delivery of housing projects. The results of this research tend to relate to the procurement problems that are faced in other African countries when it comes to the delivery of construction infrastructure. This has been discussed in section 1.2 of the introductory chapter where studies by the World Bank disclose the ill-developed public procurement regimes that exist in many African countries. This research has already established that the ECDHS has been experiencing procurement issues for over a period of 18 years. There is indeed a lack of understanding and skills shortages that allow for successful project execution and completion confined within the allotted timeframes and budget. From an international perspective reveals that these problems do not only exist in South Africa or African countries also buy internationally. The World Bank has acknowledged such and has attributed the unsuccessful implementation of infrastructure-based projects to the misalignment between procurement strategies and the objectives of the project. In one of the face-to-face interviews that were conducted, respondent 7 also stated that there was a need for the ECDHS to ensure that the entire SCM process is aligned with

the construction value chain. Pakistan, for example, can be likened to South Africa. The demand for infrastructure in Pakistan is high, and yet the resources available in Pakistan are insufficient to meet the infrastructural development demands (Daedal, 2010).

In the case of South Africa, there is a need to invest in housing infrastructure to improve the essential quality of life for those that have felt the debilitating effects of apartheid. In Pakistan, the need and demand for infrastructure are massive while the resources in Pakistan are not ample to meet this demand (Noor et al., 2012). South Africa however, has the natural resources; yet in the Eastern Cape, for example, there is a deficiency in the knowledge-based resources that enable successful execution of integrated sustainable low-income housing projects. This is the problem that has been highlighted in the sustainable use of resources also experienced in the Eastern Cape.

This presents a significant obstacle to achieving the generally accepted goals of public procurement, which are amongst others, transparency, competition, value for money, fairness, cost-effectiveness and integrity. How to use the limited public resources wisely remains a significant challenge for governments especially under the current fiscal pressure (Estache, and Limi, 2009). Using funds effectively in the execution through to the successful completion of the construction of infrastructure is an international problem. According to Dahdal (2010) for example, International evidence indicates that cost overruns occur in approximately 73% of infrastructure projects worldwide. It remains the fact that inadequate infrastructure undermines the growth of regional growth and competitiveness and hinders the fight against poverty, exclusion, and inequality.

5.3.1 Skills shortages

Regarding the lack of understanding and skills shortages that tend to hinder effective project execution and completion confined within the allotted timeframes and budget, the ECDHS need to invest in employee development programmes. Nigeria, for example, is devoted to the capacity building of their public procurement officials to acquaint them with procurement regulations. Employees of the ECDHS need regular

training regarding procurement strategies; they need continuous training that would develop their communication skills, their teamwork/stakeholder engagement skills amongst other things. This need for further skills improvement is seen in the failure in project planning and implementation. There also exists an Inability to assess the readiness of a project. The ECDHS will, therefore, must improve its capabilities of identifying the stakeholders in the housing delivery value-chain, and then clearly allocate the roles and responsibilities of each stakeholder. The skills shortages have also manifested in the delays of obtaining essential documents such as the Record of Decision (RoD). When it comes to improving the skills of employees, it is encouraging to ensure that incentives system exists and the prizes for most committed employees, reliable and trustworthy employees in the organisation exist. This strategy can decrease the issues of absenteeism in government departments and improve the working performance of employees in the ECDHS for example.

5.3.2 ECDHS use of Turnkey vs Traditional Procurement

A selected number of housing projects by the ECDHS along with the procurement strategies that were employed for each of the projects were analysed. The procurement methods used for the projects were either the traditional method of procurement or the turnkey procurement method. The Turn-key procurement method is the method whereby the main contractor will be directly appointed by the department and is expected to select his team of professional. They submit a proposal to the client. The traditional method, however, the department appoints an engineering consultant to do pre-planning and planning studies. The department then selects a contractor to do the actual construction at a later stage, so in essence, separate contracts are provided for all the parties involved.

The comparison between the projects that used turnkey vs the projects that used the traditional procurement is as follows: this study also reveals that the turn-key procurement strategy proved to be more superior than the traditional procurement methods. One of the reasons for this is the evidence of minimal budget variation in the turn-key method as compared to the traditional method. It was also apparent that the traditional procurement has high time variation likelihood whilst there are

coordination challenges attributed to the traditional procurement method. Moreover, the three assessment criteria have proven that the turn-key method is a more efficient method compared to the traditional procurement method.

With the specific challenges being experienced in housing delivery in the Eastern Cape is that procurement tends to take a long time from the implementation of a procurement strategy right through to the appointment of a supplier or contractor. Moreover, the fact that there is often improper evaluation of tender documents, the lack of arithmetic checks and a lack of implementation of control factors reveal that there is a need. It was also found that tender documents that were incomplete were often approved for further processing. This again emphasises the need for in-house training of ECDHS employees involved in construction procurement-related processes. Regarding the processing of incomplete tender documents, it is recommended that no contractor must be appointed on any other project until they can successfully completer existing projects that have been awarded them. It is also recommended that contractors that fail to complete a project be penalised through a ban or given years where they are not allowed to bid. This would also deal with the issue of establishing long-term relationships with reliable contractors.

5.4 Conclusion

The main findings of this research have been discussed about the results derived from existing scholarly literature, information obtained through close-ended questionnaires disseminated to the relevant respondents, and the additional open-ended face-to-face- interviews that were conducted. The results of the research reveal that there is indeed prevalence in the shortage of skills and the unavailability of training programs in supply chain management organisations. Effectively implementing skills development programmes for employees are central for project delivery success in the Eastern Cape. Achieving success in construction project delivery is crucial, and it is evident that projects are successful when they are completed within their allotted budget and time frames. The challenge in procurement itself is a key indicator that reveals the reason for the existence of problems in the timeous delivery of sustainable housing projects. There exists a shortage of skills amongst the staff of the Eastern

Cape department of human settlements, and it is evident that regular training and workshops targeted at improving the skills of the employees will prove useful in contributing to successful procurement practices and active stakeholder engagement and long-term relationship building.

CHAPTER 6: CONCLUSION

6.1 Introduction

The researcher discusses the challenges that are faced by the ECDHS procurement strategies and the solutions that could be implemented to ensure that these challenges are addressed. The discussion focused on some obstacles that have crippled the successful delivery of housing development projects in the Eastern Cape region. The regions that were considered in this study include the Joe Gqabi Region, Nelson Mandela Metropolitan, Amathole Region, Buffalo City Metropolitan, Alfred Ndzo Region, OR Tambo Region, Sarah Baartman Region and Chris Hani Region. In this chapter presents the summary, recommendations and conclusions based on the results and findings from the investigation into the challenges that exist within the procurement process of housing infrastructure-based projects in the ECDHS. This study aimed to investigate the procurement challenges associated with infrastructure (capital) projects to find potential best practice and make recommendations on how those challenges can be overcome based on the findings. The lessons learned from such studies provide a sound foundation for the development of theory and the implementation of innovative best practices. Such best practice guidelines should eventually lead to standard operating procedures (SOPs) for infrastructure development in the Eastern Cape Department of Human Settlements. The struggle that the ECDHS faces in transforming their supply chain management process to ensure that integrates sustainable housing projects are made available for those in need of housing is no secret. SCM needs significant transformation since it forms a vital part of procurement practice in South Africa's Public sector. From this study the researcher discussed the found facts regarding how procurement practices face enormous challenges such as 1) the lack of proper knowledge and the lack of skills and capacity, 2) the occurrences of non-compliance with SCM policy and regulations which is due to lack of implementation and enforcement.

The third problem that exists as a bottleneck to procurement practices is the inadequate planning and the inability of linking of project demand to the budget of the project. The fourth hindrance to procurement practices was a lack of accountability,

the prevalence of both fraud and corruption. Other obstacles include the lack of BEE policy, the lack of monitoring and evaluation of SCM and the decentralisation of the procurement method.

6.2 Summary of Findings & Recommendations

First and foremost, it is important to note that the Bill of Rights in the South African Constitution commits the government to ensure that the socio-economic rights of all South Africans are achieved. One of the rights that are to be provided by the government is the right to adequate housing for South African citizens. The importance of such is reiterated through legislation and other policy documents such as Section 26 of South Africa's Constitution. The constitution explicitly states that it is the responsibility of the state to take reasonable legislative, and other measures within its available resources, to achieve the progressive realisation of the right to housing. Regarding legislation about the importance of ensuring adequate housing in South Africa is not lacking. This is evident in the 1994 White paper on Housing, the BNG (2004) policy framework and the Reconstruction and Development Programme (RDP).

Another finding of this study reveals that over the years the ECDHS has failed to reduce the housing backlog and that there is a need for the department to devise a capable system that deals with land procurement issue. The truth is that the housing backlog has resulted in the spread of informal settlements. The findings of this study, however, reveal that challenges in SCM and procurement are prevalent in the delivery of integrated sustainable housing. The result of this study is that seven main issues exist as bottlenecks to ensuring successful procurement methods (Ambe, 2012). The first bottleneck is the lack of proper knowledge and the lack of skills and capacity. The second bottleneck is the occurrences of non-compliance with SCM policy and regulations which owes to lack of its implementation and enforcement.

The third problem that exists as a bottleneck to procurement practices is the inadequate planning and the inability of linking of project demand to the budget of the project. The fourth hindrance to procurement practices was a lack of accountability, the prevalence of both fraud and corruption. The fifth problem is the inadequate monitoring and evaluation of the SCM, the sixth is the decentralisation of the

procurement system, and the seventh problem is the Ineffectiveness of the Black Economic Empowerment (BEE) policy.

Clear communications and the ability to pass thoughts, ideas, information, and instructions quickly and effectively, between people with different technical skills is something that the ECDHS need to improve on since communication is a knowledge area. Knowledge regarding the use of technology also needs to be developed because the use of technology helps to meet the escalating needs of modern economies and modern societies. Employees and the relevant stakeholders that are involved in a project need to undergo continuous training in the form of workshops, conferences and even short courses. This should be done with the intention of updating skills and knowledge to keep at par with relevant procurement practices and SCM methods that will ensure successful project delivery and the efficient use of project funds to secure the timeous deliveries of projects.

Non-compliance with procurement and SCM-related legislation, and policies, as well as tender irregularities, are some of the problems that exist within South African public procurement (Smart, 2011). Extensive training will ensure that employees and stakeholders are educated about the importance of complying with SCM policy and regulations along with tender irregularities. Employees should be exposed to international conferences, workshops that deal with the topic of SCM, especially in developing countries. The implications of this are that it will bring practical exposure to working SCMs and the benefits that can accrue or be achieved from complying with SCM policy and regulations. Most governments in Africa, for example, for example, have instituted reforms in public procurement. The primary goals of these reforms are to encourage competition, improve financial transparency, and ensure accountability in public institutions (Hunja, 2003). Procurement reforms in Africa have to some extent brought modernity, transparency, competition, as well as fairness in the procurement process.

Notwithstanding the improved administrative and structural systems put in place to enhance efficiency in public procurements, these reforms have not gone without blemish. Indeed, the implementation of procurement reforms in Africa has been fraught with cultural insensitivity, the disregard for countries' political, socio-economic, ethical, and environmental structures and systems. This results in the lack of interest

and political will to confront the challenges of the reform leading to haphazard and lackluster approach towards its implementation (Hunja, 2003).

The SCM policies and regulations and procurement also need to be enforced without fail. Failure to adhere to policies should result in penalties, fines and the withdrawal of certain privileges of the one to blame. South African taxpayers were fleeced R30 billion because of the corruption, incompetence and negligence of some public servants. In the Eastern Cape, the mismanagement of funds, poor project and contractor management, poor contractor capacity, the incapacity of municipalities to manage their trust accounts, poor project planning, land claims have blocked the progression of some projects. The existence of corruption implies that monitoring corruption needs to be put in place and punishment must be administered to perpetrators of corruption. Communities should also be encouraged to report instances of corruption through the grass-roots approach to combating corruption.

6.3 Other Auxiliary Recommendations

i. There is a need for ECDHS to have a mechanism to include in supplier in its planning and goal setting process, as this will enable that the two are at par and gives a better chance for the two to serve each other way.
ii. There is also a need for the development to cultivate a culture of continuous improvement of its approach to infrastructure development. It is essential that this process is inclusive of its vital service providers.
iii. It is evident from the research results that the there is a need for ECDHS to build a relationship with its supplier to ensure an honest, open and transparent way of doing business together. In tandem with the latter point, there is a need for ECDHS to monitor and evaluate this relationship continuously.
iv. While ECDHS should thrive to ensure that all the areas highlighted as areas that require improvement are responded to, there is an equal need to ensure that the areas of good practice are maintained to avoid reversal of the benefits already enjoyed.
v. Although the two procurement strategies in use at ECDHS have their advantages and disadvantaged, it will be prudent for the department to adopt

the turn-key procurement method because of its implementation efficiencies, smooth coordination, a limited variation on both time and budget.

6.4 Conclusion

This research aimed to gain a better understanding of the challenges in the procurement process of housing infrastructure projects at the Eastern Cape Department of Human Settlements. Through survey questionnaires issued to employees of the Department and documentary analysis, a series of findings has been generated to develop a better understanding of the challenges in the procurement process of housing infrastructure projects of the Eastern Cape Department of Human Settlements. Results of this study uncover the ECDHS challenges in providing adequate housing to the impoverished citizens of the Eastern Cape Province. The problem to deliver adequate housing lies in the various procurement phases. Supply chain management division must ensure that employees engage in regular workshops and skills development programs to better their skills to be well equipped to deal with procurement challenges when it comes to housing projects. Training will ensure that the different variables of construction such as funding, selection, pricing, responsibility for design, will be well understood by procurement teams and taken into consideration at all procurement stages. Training would enable procurement teams to utilise robust performance and communication plans to ensure more sound procurement practices. Avoiding any delays in the supply chain management processes presents top management with the task of encouraging rewards programs for employees that participate and perform well in the skills development programs thus creating an enjoyable environment for acquiring and implementing latest procurement practices. A broad approach to managing service delivery in line with the IDM system of the national treasury should also be executed by the Eastern Cape Department of Human Settlements as another mechanism to improve the timeous delivery of housing infrastructures. The ECDHS can also draw from procurement success stories where governments in other developed countries and African countries have instituted reforms in the procurement phases in the construction of public infrastructure projects. Although it is evident that there is a need for the ECDHS to redefine their procurement processes, the use of the turnkey procurement strategy is advised as opposed to the

use of the traditional procurement method due to ease of co-ordination which ensures a limited variation in both budget and time.

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APPENDIX 1: Request for Permission to Undertake Research

Province of the
EASTERN CAPE
HUMAN SETTLEMENTS

OFFICE OF THE REGIONAL DIRECTOR - JOE GQABI- DIRECTORATE: PROJECT MANAGEMENT&QUALITY ASSURANCE

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MEMO

TO:	THE OFFICE OF THE CHIEF DIRECTOR: PROJECT MANAGEMENT & QUALITY ASSURANCE
FROM:	VUYOLWETHU GUMA– CHIEF CONSTRUCTION PROJECT MANAGER- JOE GQABI
BRANCH:	JOE GQABI REGION
DIRECTORATE:	PROJECT MANAGEMENT & QUALITY ASSURANCE
DATE:	24 JANUARY 2018
PROJECT:	APPROVAL TO CONDUCT A WITHIN THE DEPARTMENT
SUBJECT:	REQUEST FOR APPROVAL TO UNDERTAKE A RESEARCH STUDY WITHIN THE JOE GQABI, NELSON MANDELA METROPOLITAN, AMATHOLE, BUFFALO CITY METROPOLITAN, ALFRED NDZO, OR TAMBO, SARAH BATMAN, AND CHRIS HANI REGIONAL OFFICES. ALSO DEPARTMENTAL OFFICIALS AT HEAD OFFICE
ENQUIRIES:	VUYOLWETHU GUMA

1. PURPOSE

To request the approval to conduct a study of the Eastern Department of Human Settlements for MSc Project Management in Construction.

2. BACKGROUND

Currently I am a registered post graduate student for a Master's Degree at the University of the Witwatersrand to study MSc (Building) in the field of Project Management in Construction. My research topic seeks to investigate the Procurement Challenges in Housing Infrastructure Projects: A Study of the Eastern Cape Department of Human Settlements.

In completing this course, it is expected of me to submit a research thesis in relation to the above mentioned research topic. The study will need for the collecting and analyzing of data from officials within the PM&QA and SCM directorates.

APPROVAL TO UNDERTAKE A RESEARCH STUDY WITHIN THE JOE GQABI, NELSON MANDELA METROPOLITAN, AMATHOLE, BUFFALO CITY METROPOLITAN, ALFRED NDZO, OR TAMBO, SARAH BATMAN, AND CHRIS HANI REGIONAL OFFICES. ALSO DEPARTMENTAL OFFICIALS AT HEAD OFFICE

3. MOTIVATION

I hereby request permission from your good office to undertake my research at the Joe Gqabi and OR Tambo Regional Offices. Participation of the respondents will be voluntary with the option of withdrawing at any stage of the process. There will be no consequences for anyone who does not wish to participate. An informed consent will be requested before the respondents participate in this research. Confidentiality will be ensured.

The information received will be utilized in such a way that respondents cannot be identified. The final report will not include identifying information.

Questionnaires will be used to collect data from the employees of both Regional Offices. Respondents will be informed that they are not obliged to answer all the questions. If they feel uncomfortable about certain questions they need not answer them.

4. RECOMMENDATIONS

In view of the above, it is recommended that:-

The The Chief Director: Project Management & Quality Assurance approves a request to undertake my research study at Joe Gqabi, Nelson Mandela Metropolitan, Amathole, Buffalo City Metropolitan, Alfred Ndzo, OR Tambo, Sarah Batman, and Chris Hani Regional Offices. Also departmental officials at Head Office.

By participating, respondents will contribute towards the above mentioned investigation.

Compiled by:

Mr. V. Guma
Chief Construction Project Manager: Joe Gqabi **Date**: _____

Approved / Not Approved
.....
.....

Mr. S Galahitiyawa
Chief Director: Project Management & Quality Assurance **Date**: _____

APPROVAL TO UNDERTAKE A RESEARCH STUDY WITHIN THE JOE GQABI, NELSON MANDELA METROPOLITAN, AMATHOLE, BUFFALO CITY METROPOLITAN, ALFRED NDZO, OR TAMBO, SARAH BATMAN, AND CHRIS HANI REGIONAL OFFICES. ALSO DEPARTMENTAL OFFICIALS AT HEAD OFFICE.

APPENDIX 2: Research Questionnaire

Survey Questionnaire

Questionnaire No.	*00*

The aim of this survey questionnaire is to collect information on the challenges in housing infrastructure projects with particular interest to the Department of Human Settlements, Eastern Cape. The information you provide will be used for academic purposes **ONLY** and the usual confidentiality clause applies. Under no circumstances will your identity be revealed.

Please kindly read the statements carefully and answer as accurately as possible. Mark with an “X”, in the appropriate box, the statement that best suits the situation at your respective municipality and for questions that require explanations make use of the spaces provided. About 30 - 40 minutes of your time will be needed to conduct this interview. For more information and clarity please contact the researcher Mr. V. F Guma 076 053 2633.

Thank you

A. Background Information

1. Municipality							
2. Years of Experience in Housing Infrastructure Projects.							
less than 1yr	1-2yrs	3-5yrs	more than 5 yrs				
3. Are you happy with the Supply Chain Management Practice				**Yes**		**No**	
4. Highest Qualification							
Certificate		Diploma					
B. Tech/ Degree		Honours					
Masters		Doctorate					
other (Specify)							
5. Built Environment Sector							
Project Management		Electrical					
Civil/ Structural Engineering		Land Surveying					
Quantity Surveying		Financial					
(Other)							

B. Procurement Experiences

6. Are you happy with the Department's Supply Chain Management Process (Supply Chain)	**Yes**		**No**	
7. The Department include its key suppliers in its planning and goal setting activities	**Yes**		**No**	
8. The Department has continuous improvement programs that include its key suppliers	**Yes**		**No**	
9. The Department helps its suppliers to improve their product quality	**Yes**		**No**	
10. The Department strive to establish long term relationship with its suppliers	**Yes**		**No**	
11. The Department rely on few high quality suppliers	**Yes**		**No**	
12. The Department actively involves its key suppliers in new product development processes	**Yes**		**No**	
12. The Department regularly solve problems jointly with its suppliers	**Yes**		**No**	

13. The Department frequently interacts with suppliers to set its reliability, responsiveness, and other standards	**Yes**		**No**	
14. The Department has frequent follow-up with its suppliers for quality/service feedback	**Yes**		**No**	
15. The Department frequently measures and evaluates suppliers satisfaction	**Yes**		**No**	
16. The Department frequently determine future suppliers expectations	**Yes**		**No**	
17. The Department frequently evaluates the formal and informal complaints of its suppliers	**Yes**		**No**	
18. The Department periodically evaluates the importance of its relationship with its suppliers	**Yes**		**No**	
19. The Department has continuous quality improvement program	**Yes**		**No**	
20 The Department streamlines ordering, receiving and other paper work from its suppliers	**Yes**		**No**	

C. Supply Chain Integration

21. Unity in our supply chain establish more frequent contact with each other	**YES**		**NO**	
22. Firms in our supply chain create a compatible communication and information system	**Yes**		**No**	
23. The Department's supply chain members have common, agreed to goals for supply chain management	**Yes**		**No**	
24. The Department's supply chain members are actively involved in standardizing supply chain practices and operations	**Yes**		**No**	
25. The Department's supply chain members clearly defines roles and responsibilities of each other cooperatively	**Yes**		**No**	
26. The Department's which supply chain members are responsible for what activity within the supply chain	**Yes**		**No**	

D. Forward Looking

27. What are the specific challenges that you have encountered o identified in the procurement process.
28. What do you think are the causes of challenges identified in Q27.
29. What possible solutions would you propose to address these challenges
30. Do you feel that the Department Supply Chain Management Process is fair and business enabling (Y) (N)
31. Explain your answer in Q30
32. Any recommendations to Q31.

Thank you for your Co-operation

APPENDIX 3: Examiners Comments

Examiner 1: s551423					
Item No.	Section	Reference Page No.	Examiner's comment	Correction	Correction Page No.
1	Methodology	20	It presents unclear account of the methodological framework of the research, the rationale for the research design and a description of the methods used.	The data collection and results section has been rewritten. In this study both primary and secondary data were used. Primary source data was collected through structured questionnaires consisting of closed ended and open ended.	**43**
2	Research Question	19	Coverage of the reasons for shifting the focus of the research question stated in sessions 1.6.1 and 1.6.2 to one on one interviews and the analysis of documents is though appropriate, but not clearly argued out in sessions 3.4.1 and 3.4.2 of the report.	The methodology has changed from qualitative to quantitative; questionnaires were used for data collection.	43
3	Research Methodology	20	I think the five paragraphs which are placed immediately under the session 3 (Research methodology) has no place there. I suggest they should be moved and merged with the introductory session of the report.	The paragraphs have been moved to the introduction.	1
4	Research Methodology	20	There are quite a number of numbering issues in the methodology chapter which need to be corrected. For example, both the Research Paradigm and Research Design have session numbers of 3.3. Also, session 3.2 is missing from the report. Inconsistent participant numbers in column 1 of table 5 must be checked and corrected.	The numbering issue has been corrected as is shown in page 43.	43
5	Data Collection And Results	67	A satisfactory results presented but with some issues to be addressed in order to make the whole chapter more meaningful and robust. That is, in session 3.4 (Chapter 3), the candidate stated that, journals and project documents were reviewed. But nowhere in the analysis chapter was found statistics of the number of journals reviewed and what the findings were.	Data collection and results section has been rewritten. In this study both primary and secondary data were used. Primary source data was collected through structured questionnaires consisting of closed ended and open ended. The existing secondary literature was	55

				collected through the use of journal articles, books, theses and dissertations, websites, published and unpublished conference papers, and government documents. Project documents are presented under case studies in the methodology section.	
6	Population And Sample of The Study	55	Again, in paragraph 3 of session 3.6, the candidate stated that 12 participants would be interviewed on 3 construction case study projects. However, no summary for the interview results was presented either in any part of the report.	The sample of the study consisted of 57 participants. 66 questionnaires were distributed but only 57 were returned.	48
7	Research Instrument	67	Instead, the session 4.3 came up with a contradicting statement to the earlier research methods proposed, and I quote: "The researcher relied on survey questionnaires that were distributed to (fifteen) 15 participants from the Project Management & Quality Assurance and Supply Chain Management Units in the Eastern Cape Department of Human Settlements. Out of the (fifteen) 15 questionnaires that were distributed, (seven) 7 were returned".	The study adopted a quantitative method 66 questionnaires were distributed but only 57 were returned.	46
8	Research Methodology	20	It is clear here that the candidate missed something important to discuss in the research methodology chapter. One of the methods (INTERVIEWS) used in the research was partially elaborated on. The questionnaire survey aspect was not discussed at all. I would have liked to see more discussion on the interview and questionnaire survey in the methodology chapter and especially, a summary of the findings with regard to the project documents/interviews to be well presented in the chapter 4 of the report. Rather than presenting just themes discussed and profiles of the interviewed participants.	Questionnaires were used for data collection. The questionnaire consisted of 27 closed ended questions and 5 open ended questions.	43

10	**Summary, Recommendations And Conclusion**	**90**	**The presentation and interpretation of interview and project document data would be helpful to support the conclusions and in making good recommendations.**	**The interview were not conducted, however the project documents data is presented in this section.**	**82**
11	Analysis	68	Part of the data representation and analysis in chapter 4 reflects a good work but needs to be structured well. If anything, I would have liked to see more discussion of the results from the interviews conducted and findings from the project documents reviewed as stated above, since this is not covered in more depth to provide good recommendations in the final chapter.	No interviews were conducted. An analysis of data conducted through questionnaires is presented in section.	57
12	Entire Dissertation	All Pages	Overall, the report has some clerical errors to be dealt with. The style and layout is good. I have a few suggested revisions on the main report for the student to consider.	All clerical errors have been corrected with the help of an editor.	**All pages**

Examiner 2: s551423					
Item No.	**Section**	**Reference Page No.**	**Examiner's comment**	**Correction**	**Correction Page No.**
1	Research Aim	19	Has the candidate shown that he/she understands the nature and purpose of the investigations?	The research aim has been rewritten.	8
2	Literature Review	22	Is sufficiently acquainted with the relevant literature? -The student consulted appropriate Literatures for the purpose of the work but some of the Literatures consulted are old. The candidate has acquired a satisfactory understanding of the scientific or engineering method? -The gap in literature was not identified but this is needful. The gaps if identified should have informed the choice of research questions and objectives.	The National Department of Human Settlements and the National Business Initiative produced a Housing Process Guide in 1997. Procurement Challenges Faced by the Eastern Cape Department of Human Settlements	**11**
3	Findings	89	Is capable of assessing the significance of his/her findings? The significance of the study need to be rewritten. The current form did not capture importance of the research output to contractors, procurement professionals, literary world and society.	The significance of the study has been rewritten.	80
4	Entire Dessertation	All Pages	Structure of report. There are some components that is lacking in the present form: the Abstract need to be restructured. An abstract should follow this format. An introductory sentence, statement about the aim and objectives, the methodology (population, sample size, sampling technique e.t.c), the results, the recommendation, the results and relevance of the results. Theoretical framework need to be rewritten while research concept is lacking. i.What is the problem under investigation.? ii.How does the problem originate.? iii.What is the major issue that instigates this research.? iv.What is the current menace? v.How do you want to solve it?	The abstract has been restructured. This study reports on a quantitative descriptive design that investigates the challenges in the procurement process of housing infrastructure projects in the Eastern Cape Department of Human Settlements. Pretested questionnaires were distributed to 57 participants who were purposely selected consisting of Structural Engineers, Project Managers, Quantity Surveyors, official working in Finance and Supply Chain Management. Most of these officials are working on recently completed infrastructure projects and on-going infrastructure projects while data was performed using Microsoft excel 2010. The problem statement has been rewritten.	all pages

5	Scope of The Research	20	Scope of the research---The scope is in order. However in the aim of the study only Eastern cape Department of Human Settlements was mentioned Joe Gabi, Chris Hani Region need to be added as part of the scope covered.	The study covered eight Regional Offices of the Eastern Cape Department of Human Settlements (namely, Joe Gqabi Region, Nelson Mandela Metropolitan, Amathole Region, Buffalo City Metropolitan, Alfred Ndzo Region, OR Tambo Region, Sarah Baartman Region and Chris Hani Region). They were mentioned in the Aim of the study.	9
6	Background of The Study	16	Area covered by the research- The study need to be properly situated within the context of the Background section. This supposes to be stressed at research background section. Aim= The Aim of the study need to be rewritten in this form: '' To Investigate challenges of Procurement Process of Housing Infrastructure Project using Eastern Cape Department of Human Settlement, South Africa with a view to ensuring adequate and effective procurement process".	The background and the aim of the study have been rewritten.	4
7	Methodology	20	Methodology employed: -There are a lot of future tenses scattered all over the Methodology Section. The tenses need to be recast in reported tense. -The protocol used in the choice of population frame for the study is faulty and needed to be vividly stated. The deriving equation for sample size and population of the study should be stated. The equation or table or authority that corroborates the equation or protocol need to be stated. -Sample size of 55 is inadequate for a study such as MSC. Degree programme like this. The sample is too small for a study of this nature. -Method of analysis used for the study is not stated in this study. -Two types of samples were used in this study Interview sample and Questionnaire sample. 55 samples were stated for the questionnaire, but the number interviewed was not properly stated in this study.	The methodology has been rewritten and the tense has been corrected. The sample size is 57, out of 66 questionnaires distributed to respondents, only 57 were returned. The study has now covered 8 regional offices in the Province. This is a quantitative study.	43

8	References	97	References. Some references are missing out of reference list among those cited in the body of the work. e.g. Boateng (2008) on page 45, Smart (2011) on page 45; Yin (1984) ; Fick (2009) page 59; Organ et al., (2012) page 24 among others that spread across the whole text.	The reference list has been updated.	89-98
9	Entire Dissertation	All Pages	General comment: The candidate is advised to seek support of language editor to assist in correcting editorial issues in the manuscript. Some paragraphs do not flow into one another and thereby creating readability problem. Some sections in Chapter three are cast using future tense, let the tense issue be formally addressed and cast in reported tense.	The language editor has been consulted for editorial purposes. All sections in chapter three have been checked and the chapter is now presented in the past tense.	All