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Factors Influencing Clients' Choice of Standard Form Construction Contracts: A case study of three metropolitan municipalities in Gauteng Province of South Africa

Hosana Hossain Ndlovu (1558237)

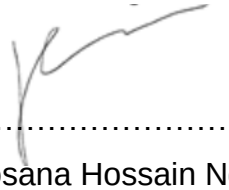
A research report submitted to the Faculty of Engineering and Built Environment, University of the Witwatersrand, Johannesburg, in partial fulfilment for the requirements for the degree of Master of Science in Building (Project Management in Construction) in the School of Construction Economics and Management at Wits University.

Johannesburg, 2017.

Supervisor: Professor Samuel Laryea.

Declaration

I, Hosana Hossain Ndlovu hereby declare that this work and ideas contained therein are wholly mine and original. I declare that full referencing and acknowledgements have been done on ideas and thoughts that do not belong to me. I am also aware of the University of the Witwatersrand's policy against plagiarism. I confirm that this Research Report has not been submitted before to any other institution of higher learning or university for examination.



……..

Hosana Hossain Ndlovu

05th day of December 2017.

Acknowledgement

First and foremost, I would like to thank my God and creator Jehovah for giving me the strength and the courage to complete my studies. With Jehovah all things are possible.

My unreserved gratitude goes to Professor Samuel Laryea; my Supervisor. I'm indebted to his continual assistance, guidance, patience and sympathetic nature throughout my studies.

Moreover, I would like to thank my beautiful wife, Sibongile for her continued love and support throughout my studies and for also staying up with me all those long evenings while I was busy with my Research Report. In addition, I would like to thank my two young children, Nsovo Su-mi and Lonwabo Ntsako for their love and patience while I was busy with my research report. Lastly I would like to thank my senior work colleagues; Mr Hannes Wessels (Pr. Eng.), Mr Johann Louw (Pr. Eng.) and Mr Phillip Huma for your support and encouragement.

DEDICATION

To my beautiful wife; Sibongile Sharon, my daughter Nsovo Su-mi and my son Lonwabo Ntsako, I dedicate this work to you. I love all of you. You are all a blessing to me. I thank Jehovah every day for giving me the three of you to be my family.

Abstract

In the public sector, the decision as to which form of construction contract to select, remains a challenging and difficult task for many clients of construction projects. Selecting the most appropriate form of construction contract is one of many important decisions that a client has to make in a project, and such a decision may lead to project success. The factors that influence clients to make selections of construction contracts are not clearly understood. There is a lack of distinction or structured guidelines as to how forms of construction contracts are to be selected or by what process; however there are consequences for selecting inappropriate forms of construction contracts. The aim of this study was to determine the factors that influence clients' choice of forms of construction contracts when implementing construction projects. Through the use of qualitative research methodology, a case-study of the three metropolitan municipalities in the South African Province of Gauteng; namely, the City of Tshwane, the City of Johannesburg and Ekurhuleni Metropolitan Municipality was conducted. The study population consisted of built environment professionals (engineers, architects, project managers, programme managers, construction managers and investment managers). Data was collected through structured interviews with specific questions relating to how forms of construction contracts are selected, what factors influence such choices and who the key drivers of such contract selection decisions are. The results have shown that the leading factors, according to respondents, that influence clients to select the forms of construction contracts they use for their projects are the influence of their consultant and familiarity. The suitability of forms of construction contracts was the least factor. The study further demonstrates that the most commonly used form of construction contract in the three metropolitan municipalities is the General Conditions of Contract (GCC 2010/2015) and the key drivers of such decisions are consultants, who are seen as the experts. It is recommended that clients need to be more involved in all construction management processes and rely less on consultants. The outcome of this research will help the industry to best deal with the problem of random selection of forms of construction contracts without proper analysis.

Keywords: General conditions of contract, forms of construction contracts, contract selection, clients, familiarity, influence of consultants.

Table of Contents

Declaration ii

Acknowledgements iii

Dedication iv

Abstract v

Table of Contents vi

List of Figures vii

List of Tables viii

List of Acronyms ix

Chapter 1: Introduction 01

1.1 Introduction 01

1.2 Background 02

1.3 Problem statement 07

1.4 Research aim and specific objectives 08

1.5 Research question 09

1.6 Brief overview of research methods 09

1.7 Scope of study 10

1.8 Structure of report 10

Chapter 2: Literature Review 12

2.1 The importance of a contract 12

2.2 Standard Forms of contract used in South Africa 12

2.3 Purpose of standardisation of contracts 17

2.4 Factors influencing choice of contract by clients 19

2.5 Client categories of experience 21

2.6 The role of the client in contract selection 22

2.7 Goals and objectives of a client 23

2.8 The characteristics and background of the client 24

2.9 The role of the advisor/consultant 27

2.10 Consequences of not selecting an appropriate form of construction contract 29

2.11 Familiarity of forms of contract 30

2.12 Summary of literature review 31

2.13 Research gaps & problem statement 32

Chapter 3: Research Design and Methodology **34**
3.1 Research design 34
3.2 Research paradigm 35
3.3 Research philosophy 36
3.4 Research approach 37
3.5 Research strategy 38
3.6 Method choice 39
3.7 Time horizons 42
3.8 Data collection, sampling and analysis 42
3.9 Ethical Considerations 49

Chapter 4: Data Presentation, Analysis and Results **50**
4.1 Background 50
4.2 Rationale of questions 50
4.3 Respondents information and background 52
4.4 Data analysis of responses in relation to specific objectives 58

Chapter 5: Discussion of Results **80**
5.1 Factors influencing clients' choices in the selection of forms of contract for construction projects 80
5.2 Forms of contracts currently in use in the three metropolitan municipalities 82
5.3 State of use of forms of construction contracts 84
5.4 The drivers of contract selection decisions 85

Chapter 6: Conclusions and Recommendations **88**
6.1 Conclusions 88
6.2 Recommendations 90
6.3 Contributions to the body of knowledge 91
6.4 Suggestion for further study 91
7. Bibliography **92**
8. Appendices **104**

List of Figures

Figure 4.1: Metropolitan municipalities represented by respondents 53
Figure 4.2: Respondents' positions 53
Figure 4.3: Respondents' total years of experience 55
Figure 4.4: Respondents' field of expertise/background 56
Figure 4.5: Respondents' years of experience in selecting forms of construction contracts 57
Figure 4.6: Factors influencing clients' selection of forms of construction contracts 61
Figure 4.7: Aggregation of the reasons for selecting forms of contract 64
Figure 4.8: Forms of construction contracts primarily in use across the 3 metropolitan municipalities 66
Figure 4.9: Forms of construction contracts secondarily in use across the 3 metropolitan municipalities 67
Figure 4.10: Frequency of use 69
Figure 4.11: Types of projects which the selected forms of construction contracts are used 69
Figure 4.12: The extent of use 71
Figure 4.13: Clauses that are amended 72
Figure 4.14: The primary decision makers 75
Figure 4.15: Processes followed 79
Figure 5.1: Procurement Indicators (CIDB, 2013) 83
Figure 5.2: Procurement Indicators (CIDB, 2014) 83
Figure 5.3: Procurement Indicators (CIDB, 2015) 83

List of Tables

Table 3.1: Alternative Strategies of Inquiry 39
Table 3.2: Number of respondents to be used in study 46
Table 4.1: Respondents basic information 52
Table 4.2: Respondents experience in relation to selecting forms of construction contracts 54
Table 4.3: Respondent's years of experience in relation to selecting forms of construction contracts 57
Table 4.4: Factors influencing clients' selection of forms of construction contracts 58
Table 4.5: Reasons for selecting forms of construction contracts 61
Table 4.6: Forms of construction contracts commonly in use across the three metropolitan municipalities 64
Table 4.7: Frequency of use standard form of construction contracts 67
Table 4.8: Extent to which forms of construction contract are used in their original form 70
Table 4.9: Sections/clauses that are amended 71
Table 4.10: Respondents' response to "who" makes the decision 73
Table 4.11: Processes followed when making decision on forms of construction contracts 75

List of Acronyms

CIDB: Construction Industry Development Board.

GCC: General Conditions of Contract for Construction Works.

FIDIC: French acronym for International Federation of Consulting Engineers.

NEC: New Engineering Contract.

JBCC: Joint Building Contracts Committee.

SACQSP: The South African Council of the Quantity Surveying Profession.

RICS: Royal Institute for Chartered Surveyors.

NEDO: National Economic Development Office.

BPF: British Property Federation.

NSPE: National Society for Professional Engineers.

PMCD: Project Management Competency Development.

Chapter 1: Introduction

1.1 Introduction

It is common in the construction industry today for clients to make choices without reason when it comes to the selection of the most appropriate form of construction contract that will suit the needs of a construction project. Such choices are commonly based on random choice or personal whim, rather than any reason or system to assist with the selection of a suitable form of construction contract. The decision to select a suitable form of construction contract is a very critical step in every project as it may have an impact on the outcome of a construction project. It is the responsibility of every client to select the most appropriate and suitable form of construction contract for their project. There is a wide range of forms of construction contracts available in the construction industry and selecting the most suitable one may often be a challenge and may lead to clients making choices without reason.

Despite the wide range of forms of construction contracts available, clients are still not sure which forms of construction contracts to select for their projects. According to Clamp et al., (2007), the wide range of contract options is a clear suggestion that a more formal and structured decision-making approach is required to ensure that appropriate choices are made. The decision as to what form of construction contract to adopt has become even more complex and challenging, as the number of methods available within the construction industry has increased in recent years (Mortledge et al., 2006) and this has led to random selections of forms of construction contracts.

Scholars and researchers suggest that it is common for clients to make random choices when it comes to selection of forms of construction contracts and contracting strategies (Masterman, 1996; Bower, 2003). The wider range of available forms of construction contracts in the construction industry makes it even more difficult for various clients with varying levels of experience to make appropriate contract choices. Literature makes it clear that selecting the most suitable form of construction contract does not guarantee success; rather it has a positive impact on a project, which may lead to success (Bower, 2003). Furthermore, other scholars suggest that many clients are not experienced enough to make such selections or they often misunderstand their own objectives and goals (Davenport & Smith 1995).

According to Mortledge et al., (2006), the selection of the most suitable form of construction contract to suit project needs has become more complex and may sometimes lead clients to make contract choices without processes or reason.

Masterman (1996) and Bower (2003) highlighted that selecting a form of construction contract that is not suitable may result in project dissatisfaction, further impacting on project success. There is a knowledge gap in the field (industry) when it comes to guidelines for selecting a suitable form of construction contract as there are no clear guidelines. The literature continues to indicate that clients would rather settle for a particular form of construction contract because clients have used it before or they were advised so by the engineer or project manager, or simply because procurement laws and regulations say so, if not for convenience (Masterman, 1996; Bower, 2003; Clamp et al., 2007). The factors that influence clients to make contract choices are not clearly understood; hence this Research Report aims to seek clarification and understanding to this matter.

1.2 Background

1.2.1 Study background

Internationally, construction presents a significant proportion of any country's economic activity (Wright & Ferguson, 2009). In many countries, construction involves multi-disciplinary effort (Antoniou et al., 2012). Construction contracting is always the main instrument for carrying out any transaction in the construction industry (Boukendour, 2007). It is generally accepted that the choice of contract should be contingent on many circumstances such as risk, markets and client capacity (Merrow, 2011). When a new construction project is about to begin, one of the most important decisions that project and construction managers have to make is the selection of the form of construction contract and the contract type (Thompson & Perry 1988). Project and construction managers have to select a proper contract to encourage the client and contractors to work rationally together so as to achieve the best possible outcome in accordance to their common goal and within the expected risks (Walker & Rowlinson, 2008).

A contract is an agreement between two parties, where one party commits itself to deliver certain goods to the client within a certain time at a certain cost and both

parties look out for their own interests by promoting and selecting forms of contract that protects their final objectives (In't Veld & Peeters, 1989). Berends (2015) defines a contract in line with construction management as a legally binding commitment that governs the collaboration between the client and contractor while Boukendour (2007) fundamentally defines a contract as a legally enforceable agreement where contracting parties expose themselves to legal sanctions for failing to comply with their commitments.

Having said that, Antoniou et al., (2012), believes that contract selection is of significant importance in ensuring that a project succeeds. Similarly, Perry (1985) also believes that the choice and selection of forms of construction contracts is one of the most important decisions in a contract strategy aiming to ensure project success and achieving the client objectives. A contract strategy is the selection of a form and conditions of contract that are suitable to meet the goals and objectives of the project and the selection of the correct style of management of the resulting contract and contract management then includes, among other things, the proper use of those contract conditions once in place (Wright, 1995). The choice for the selection of the appropriate delivery system and contract form has become more than ever important for any project success (Boukendour, 2007). For forms of construction contracts have a direct influence on the success of a project (Business Round Table, 1983). Successful projects are those which are completed on time, according to the required quality standards and within the approved budget. Thus effective project managers need to seek and ensure that these objectives are achieved by choosing an appropriate form of construction contract (Cunningham, 2013).

According to Latham (1994) the choice of forms of contract are decided by the client, who is the funder for the project and pays for it. In cases where both the employer and contractor are equally matched the form of construction contract may be mutually agreed. In industry, the market forces usually make one party dominant over the other. Commonly, contracts for substantial projects are selected by the client, normally on the advice of the engineer, who is viewed as the expert in this area.

The constraints in the construction sector are ever increasing and the environment is becoming more complex and high uncertainty prevails, resulting in new project

delivery systems and various contractual forms emerging (Cushman, 2004). In the last two decades (1996 to 2016), there has been significant development in alternative possibilities for contract strategies and construction projects have become complex and multi-disciplinary which require high levels of expertise when selecting a suitable form of construction contract and different project managers have different views of adopting the appropriate contract types for a project (Wang et al., 1996). The use or application of an inappropriate standard form of construction contract for a project can be very dangerous and may often mean that goals and objectives in terms of time cost and quality may not fully be realized and that the likelihood of claims and disputes may increase (Ramus et al., 2006).

In many countries (United Kingdom, United States of America, etc.), including South Africa, conventional forms of contract are traditionally single discipline, quite a large number of projects today are multi-disciplinary and they involve a wide range of fields such as civil engineering, building, electrical and mechanical engineering works (Broome & Hayes, 1997; Kennedy-Grant, 1999). Broome & Hayes (1997) distinguished the emergence of an increasingly international market for engineering and construction services of all fields and disciplines. With such increases, there are also wider ranges of traditional forms of construction contracts for engineering and construction works to select from, and this increases the challenges that clients face when it comes to selecting the most suitable form of construction contracts (Wright & Fergusson, 2009).

1.2.2 The need for a suitable form of construction contract

A well compiled contract may be the key to a successful project by establishing the right expectations, rights and responsibilities of the client, contractor and other contracted parties involved in a construction project. Generally, a respectable contract can play a vital role in a successful construction project, as it is important to assemble a contract that meets the needs of a project. In many instances, parties rely on standard forms of construction contracts (Beckman, 2010).

Similarly, construction projects are becoming multifaceted and larger in value due to technological advancements in recent years and contractors are under a lot of pressure in a competitive environment with respect to factors such as cost, time and

quality (Tomiyama & Meijer, 2005). As a result, projects are usually awarded to several contractors due to the large size and the complexity of the infrastructure projects of which all have a part to contribute in the main project. Several methods have been introduced as an approach to systematically organize these large, complex and multidisciplinary projects (Zummo, 2010). In such cases of large projects, contracts are seen as instruments of exercising control and improving co-ordination when managing projects (Mayer & Argyres, 2004). A study by Matthews *et al*., (2000), demonstrates that a close cooperation between project teams and contractors make it simpler and easier to control time, cost and performance and a need to improve cooperation between contracted parties through sharing of risks, responsibilities and resources and this level of cooperation can be related to the form of construction contract in use.

1.2.3 Arbitrary choices and consequences

The client's decision to select the an appropriate contract strategy to implement a construction project is very crucial although it does not necessary lead to a successful project but with other factors taken into account can influence the success of a project (Okunlola & Olugbenga, 2010). Venters (2005) also mentions that selecting the right form of construction contract is an important factor concerning the success of a project but it is not the only element which brings success to a project. Haswell & De Silva (1989) also mentions that many clients do not appreciate the importance of selecting the right form of construction contract for any project but they are more concerned about obtaining value of money.

Experienced clients are able to properly select a form of construction contract and an approach that has worked for them previously, or which they know might be suitable considering the prioritised objectives and their attitude to risk however, inexperienced clients, on the other hand, will usually to seek advice and guidance from experienced professionals to assist them through the process (Mortledge et al., 2006). In some cases experienced clients may also suffer consequences if they base their selection of a suitable form of construction contract upon biased past experiences and the conservative decisions of their in-house engineers or consultants (El Agha, 2013).

In Nigeria, poor performance of some construction projects has been attributed to the wrong selection decisions and continuous use of the same contract strategies and this is notably in the public sector (Oyedele, 2012). Furthermore, many factors impede the selection and use of appropriate forms of contract and contract strategies in around the world (Okunlola & Olugbenga, 2010). In some cases, adherence to the use of public procurement law contributes immensely to the inappropriate selections. According to Ogunsanmi (2013) and Eriksson & Westerberg (2012), numerous studies have demonstrated the impact of contract strategy and related factors on project outcomes.

In some developing countries, the risk of failure in implementing new forms of contract and the lack of experience also influenced the selection processes (Shiyamini, 2006) and this may sometimes lead to inappropriate choices. The various standard forms of construction contracts usually reflect the specific priorities of their compilers and each allocates risk in an individual manner. In practice it is very easy to develop a mind-set to recommend a familiar form without reason or analysis. Clients' interests, however, are better served by choosing an appropriate form rather than a convenient one. No single form of construction contract is always better than another and the eventual choice will depend on the particular circumstances (Cunningham, 2013).

Bennett & Grice (1990) highlighted that procuring of a construction project in an efficient manner through the selection of an appropriate contract strategy has, for a long time, been seen as a major factor that contributes to project success and not selecting an appropriate form of construction contract as the fundamental cause of dissatisfaction in a project (Masterman, 1996). Bower (2003) mentioned that selecting an appropriate contract strategy is as much important as selecting other major characteristics of project. An appropriate form of construction contract is very important as it might have an impact on the project progress through a right and productive direction, when a strategy that is suitable is applied, it can improve the project performance in order to deliver the maximum value at the lowest cost.

Bower (2003) further mentioned that his opinion on the importance of forms of construction contracts and a contract strategy is that it has a big influence on the

successful delivery of the project. He further emphasizes the negative effects on the project outcomes over an inappropriate selection of a contract type for a project. When an unsuitable form of construction contract is selected, the entire project may lead to failure, since no useful remedial measure can restore the project back to the key deliverables. According to Langdon & Rawlinson (2006) selecting an appropriate form of construction contract is an important and a high necessity for any project and it is above everyone and everything.

1.3 Problem statement

In the construction industry and public sector, many clients select forms of construction contracts in a manner with no reason or a system of analysis and some clients even use specific forms of contract by default without making a deliberate choice and understanding why such forms of construction contracts are used for certain types of projects. As literature suggest, some inexperienced clients completely rely on advice from engineers (consultants) and project managers when selecting a form of construction contract for a project. Other clients select forms of construction contracts because of convenience. In some cases such actions result in an inappropriate selection which may lead unforeseeable consequences as some researchers suggest (Bower, 2003; Ogunsanmi, 2013; Eriksson & Westerberg 2012; Oyedele, 2012).

During the process of selection of forms of contracts, several things are needed to make a good contract choice; they include experience, skills, background, understanding of the project and competencies in line with various project management bodies of knowledge. Despite the wide variety of standard contract forms and guidance given in selecting the appropriate contract, some clients still select inappropriate forms of construction contracts. According to literature reviewed, little is said about what factors influence clients to make certain choices when selecting a form of construction contract.

Having considered the literature, the main research questions are raised: What factors influence clients' choices of contract? Who are the key drivers of contract selection decisions? Some researchers also argue that clients make contract

choices based on public procurement policies and financial management regulations. This study will answer the main research questions raised.

It is very important that we clearly understand the factors that influence clients to make certain contract choices. There is a need for a better understanding of how and why certain forms of construction contracts are selected. It is therefore necessary to conduct a study to determine the factors that influence clients' selection of forms of construction contracts. Furthermore, an understanding of these factors will help the industry to best deal with the problem of random selection of forms of construction contracts without proper analysis.

1.4 Research aim and specific objectives

1.4.1 Research aim

The main aim of the study was to determine the factors that influence clients to make certain choices when selecting forms of construction contracts. The study also aimed at understanding why clients make such choices, who influences them and who the key decision makers in the process are. The knowledge that was gained from this study may be used to improve and enhance the systems and approaches used for selecting forms of construction contracts in all spheres of government when procuring services from contractors in construction projects. This study will also lay the foundation for developing a systematic approach that can help clients when faced with the difficulty of making a decision of which form of construction contract to select.

1.4.2 Specific objectives

The specific objectives of the assignment are as follow:

- To identify the factors that influence clients in the selection of forms of contract for construction projects,
- To establish which forms of contract are currently in use and determine their extent of use,
- To ascertain the extent to which standard forms of contract are used in their original state or modified.
- To determine who the drivers in contract decisions are.

1.5 Research question

The research questions that have been raised in this study are:

- What are the factors that influence clients' selection of forms of construction contracts?
- Who are the key drivers in contract selection decisions?

1.6 Brief overview of research methods

The study will use qualitative research approaches. According to Shank (2002), a qualitative research approach is a systematic inquiry into meanings. Denzin & Lincoln (2000) mentioned that qualitative research techniques involve an approach that is both naturalistic and interpretive. In other words, qualitative researchers study and observe things in their natural setting while attempting to understand and to interpret facts the way people bring to them. In this study, a qualitative research approach will yield a process that has a capability to fulfil the aims and objectives of the study and help to answer the research question.

The research paradigm that has been selected will guide the study and the process of selecting the most suitable methodology which will help in answering the research question. This study has adopted an Epistemological research paradigm. An interpretivist philosophy has been selected as the epistemological perspective. Interpretivists believe that it is important and necessary to understand the social world and its surroundings from the viewpoint of the humans and their interpretations which are subjective (Saunders et al., 2009).

The research will be inductive and narrative and will answer 'what' and 'why' questions. A case study strategy was adopted for this study. Data was collected from the three metropolitan municipalities in Gauteng (City of Tshwane, City of Johannesburg and Ekurhuleni Metropolitan Municipality). The data that was collected is qualitative. The time horizon of this study is cross-sectional.

A cross–sectional study is a snap-shot of a particular phenomenon at a particular time and a case study that is based on structured interviews was conducted over a brief period (Saunders et al., 2009). The data was collected through the use of structured interviews. Qualitative Content Analysis will be used to analyse the

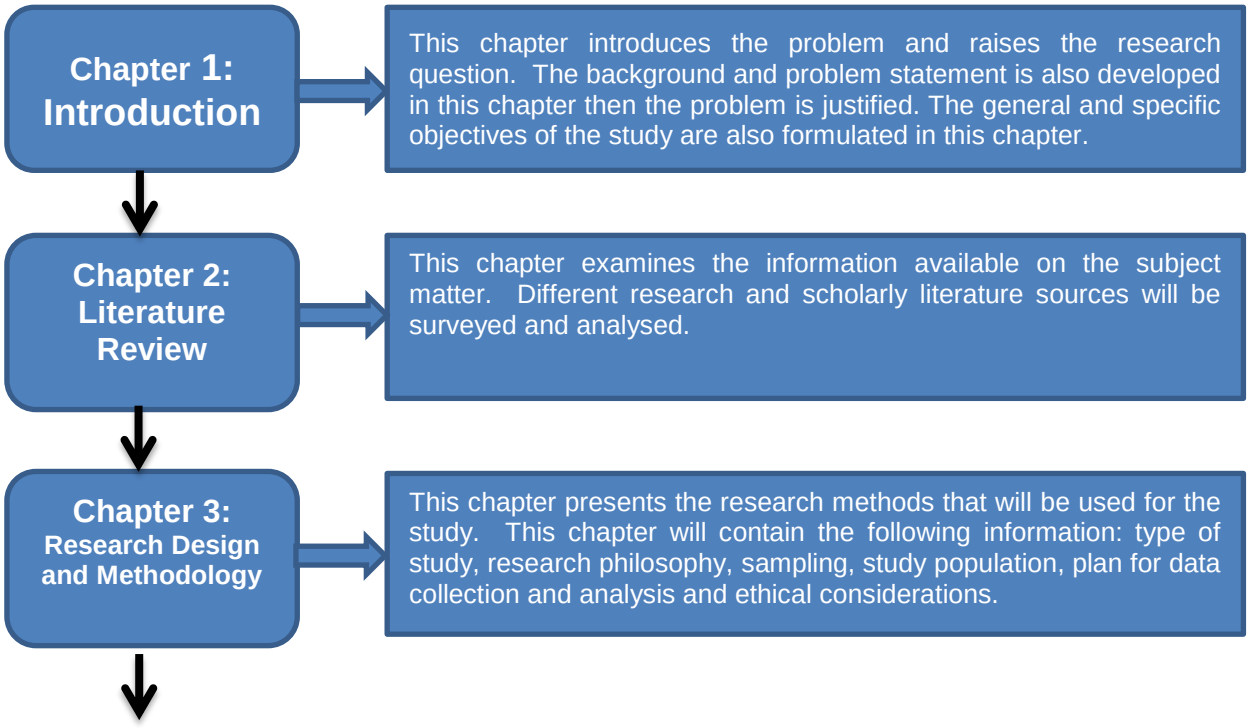
content of what has been said by the respondents to draw out their opinions, values, experiences and values. Ethical considerations have also been considered and will be adhered to and no harm was caused to respondents (Guba & Lincoln, 1994; Denzin & Lincoln, 2005; Saunders et al., 2009).

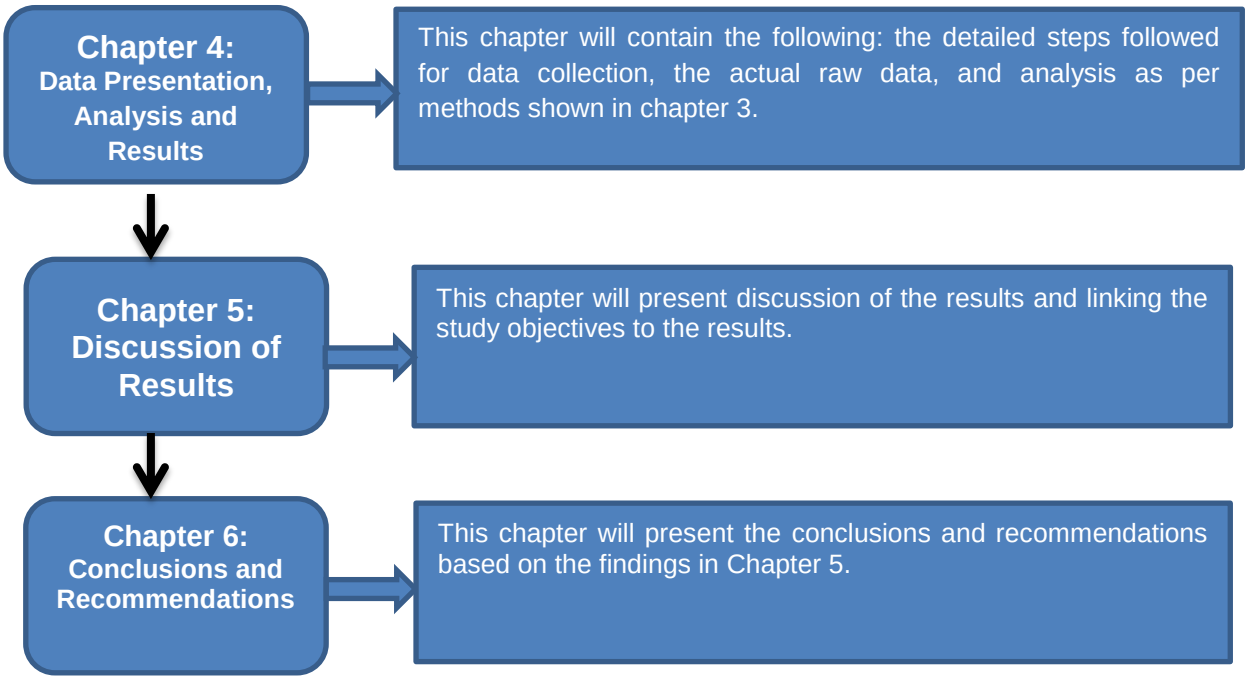
1.7 Scope of study

The study is limited to the three metropolitan municipalities in Gauteng province (City of Tshwane, City of Johannesburg and Ekurhuleni Metropolitan Municipality). These three metropolitan municipalities are among the biggest metropolitan municipalities in South Africa and are among the biggest clients of public infrastructure projects in Gauteng. They contribute significantly to the construction sector, and as such, they are among the biggest client bodies that rely heavily on the use of standard forms of construction contracts. The study assumes that the respondents who participated in the study are a representation of the population study.

1.8 Structure of the report

In order to achieve the main objectives of this study, the research will be conducted in five chapters. The outputs of each stage will become the inputs to the next stage.




Chapter 4:
Data Presentation, Analysis and Results
This chapter will contain the following: the detailed steps followed for data collection, the actual raw data, and analysis as per methods shown in chapter 3.
Chapter 5:
Discussion of Results
This chapter will present discussion of the results and linking the study objectives to the results.
Chapter 6:
Conclusions and Recommendations
This chapter will present the conclusions and recommendations based on the findings in Chapter 5.

Chapter 2: Literature Review

2.1 The importance of a contract

In order to understand the factors influencing and the impacts of arbitrary contract selection, we need to understand what a contract is. According to Elbeltagi (2009), a contract is defined as an agreement made between two or more parties which is enforceable by law to provide goods and/or services in exchange for something else from a the other parties. When a contract is properly compiled it is therefore legally binding upon the two parties involved. The parties are expected to perform the various duties and obligations they have undertaken as mutually agreed set of contract documents. McNeil (1974) defines a contract as a set of promises for which the breach of the law give a remedy or the performance of which the law in some way recognizes as a duty.

Veld & Peeters (1989) define a contract as an agreement between two parties, where one party commits itself to deliver certain goods to the client within a certain time at a certain cost and both parties look out for their own interests by promoting and selecting forms of contract that protects their final objectives. Berends (2015) defines a contract in line with construction management as a legally binding commitment that governs the collaboration between the client and contractor while Boukendour (2007) basically defines a contract as a legally enforceable agreement where contracting parties expose themselves to legal sanctions for failing to comply with their commitments.

In summary, a contract is a key component of any contract strategy and it an essential element required between two or more parties collaborating for a project. A contract impresses upon the parties the solemnity of the occasion and it requires all involved parties to seriously consider the effects and impacts of performance and non-performance upon themselves (Dhanushkodi, 2012). In all construction projects, standard forms of construction contracts are used as an administrative tool to manage the projects. Various forms exist and are used in South Africa.

2.2 Standard Forms of contract used in South Africa

2.2.1 Forms of contract as recommended by CIDB

There are several forms of construction contracts used in the South African construction industry. According to the CIDB (2015), the forms of contract used in the South African construction industry are:

- FIDIC (French acronym for International Federation of Consulting Engineers)
- JBCC (Joint Building Contracts Committee)
- GCC (General Conditions of Contract for Construction Works)
- NEC (New Engineering Contract)

Furthermore, according to CIDB (2015), the distribution of use of the different forms of contract is as follows:

- The GCC was most popular for private clients in 2015,
- For public corporations, the distribution of use is about 22% for GCC, about 23% for FIDIC, about 20% for the JBCC and less than 8% for other types of contracts,
- For national and provincial departments, the JBCC was the most popular in 2015 ,
- For metropolitan municipalities and district municipalities the FIDIC was the most popular in 2015.

In 2014, the distribution of use of the different forms of contract in accordance to CIDB (2014) is as follows:

- The GCC was most popular for private clients,
- Public corporations and provincial departments preferred to use the GCC,
- National departments used the JBCC more than the other forms, and
- Metropolitan and district municipalities preferred the FIDIC.

In 2013 however, the JBCC was the most popular form of construction contract for residential building projects at 68% usage and non-residential projects at 83% usage. The GCC was most popular for civil engineering contracts at 76%. The NEC was most popular for electrical works at 20% usage. The FIDIC was most popular for mechanical works at 23% usage (CIDB, 2015).

2.2.2 An overview and uses of the FIDIC suite of documents

FIDIC was founded in 1913, by three consulting engineers' national associations in Europe. It is known throughout the world for producing standard forms of contract for civil construction, mechanical and electrical works (CIDB, 2005; RICS, 2014). In 1999 FIDIC extended its ambit to other disciplines, with the publication of first editions of a new family of contracts comprising four new standard forms of contract:

- **Red Book: Conditions of Contract for Construction:** The Red Book is suitable for all project types where the employer has the responsibility for design. The contractor carries out the works in accordance with the designs provided by the employer. The works may include works designed by the contractor (civil, mechanical, electrical and/or construction). The completed works have to be measured, and payment is effected in line with a bill of quantities (FIDIC, 2000; CIDB, 2005).
- **Yellow Book: Conditions of Contract for Plant and Design-Build:** The Yellow Book is mainly for all projects types of where the contractor has the responsibility for design. In industry, it is common for the contractor's designs to meet the requirements of the client and the testing procedures are more complex than those in the Red Book. Payments are a lump sum, usually against a payment schedule (FIDIC, 2000; CIDB, 2005).
- **Silver Book: Conditions of Contract for EPC/Turnkey Projects:** The Silver Book is tailored for Procurement, Engineering, and Construction. Under a Procurement, Engineering, and Construction contract, the contractor is completely responsible for the design and processes required to supply a well-equipped facility to the client that is ready for operation. Under this arrangement, the contractor assumes more risk that is greater than it would have been under the Yellow Book (FIDIC, 2000; CIDB, 2005).
- **Green Book: Short Form of construction contract:** The Green Book is made for use on small projects that are of a short duration and involving simple tasks. Under this book, it does not matter if the design is developed by the client or by the contractor. It also does not matter if the project is a civil, electrical, mechanical, or other related engineering works (FIDIC, 2000; CIDB, 2005).

These forms of construction contracts are generally recommended for use where bids are invited to tender. Guidelines are given in each of these forms contract for the preparation of specific contract conditions (CIDB, 2005; RICS, 2014).

2.2.3 An overview and uses of the JBCC

The Joint Building Contracts Committee (JBCC) was founded in 1972 and is supported by the major professional and contracting bodies in the building industry in South Africa. The objective was formulation of a set of standard contract documentation which would be used to support building construction processes. This contract documentation was first published in 1991 and later, the Series 2000 was used as a replacement (CIDB, 2005).

The JBCC documentation has been compiled in the interests of standardisation and portrays the views of the Joint Building Contracts Committee of good practice and an equitable contract risk distribution. The documentation is intended to provide a straightforward, balanced and easy-to-enforce set of contract conditions, rights, responsibilities and obligations, which when applied correctly and well-administered, provide protection to the client, contractor and all involved parties. The Series 2000 covers many aspects of most building projects types. Every document is created specifically for use as part of the whole series and is not likely to be appropriate for use with other contract forms (CIDB, 2005).

The Principal Building Agreement is the main component of the JBCC documentation series. The Principal Building Agreement is made up of 9 sections beginning with basic element definitions and phrases that frequently appear in the document. The last section contains a schedule of the variables required to complete the Principal Building Agreement. This Principal Building Agreement has standard provisions that suit the requirements associated with public sector construction projects (CIDB, 2005).

2.2.4 An overview and uses of the GCC

The General Conditions of Contract for Civil Engineering Works (GCC) were developed by the South African Institution of Civil Engineering (SAICE). This form of construction contract is published and maintained by SAICE for the past several

decades. The sixth edition (1990) was republished by SAICE (COLTO 1998) and a modification of this document was made by COLTO (Committee of Land Transport Officials).

The General Conditions of Contract for Construction Works (GCC 2004) replaced the 1990 edition and it satisfied the CIDB (Construction Industry Development Board) requirements for a standard forms of contract and can be used in documents for procurement that are compiled in line with SANS 10403 (CIDB, 2005). Recently, the 2010 edition replaced the 2004 edition and subsequently the 2015 third edition replaced the 2010 (SAICE, 2016).

In summary, the GCC 3rd edition 2015 states that contractors time risk allowances must be indicated on the works programme. The document also permits contractors to suspend works if the client fails to effect payment on a payment certificate, and it includes delays and costs due to excepted risks as an entitlement that the contractor may claim. An additional Variable Performance Guarantee to the list of securities is now included and it allows for the selection of inflation indices that are appropriate to the type of Works to be carried out. The language is simpler and concise in the latest edition. The GCC 3rd Edition 2015 will be relevant in the future and will provide a proper supportive contract administration tool and the equitable distribution of risk. This form of construction contract is to be used with the contract documentation format as prescribed by the CIDB in the Standard for Uniformity in construction procurement processes and in conjunction with the SANS 1921 to set out the requirements relating to the manner in which the contract works are to be executed (SAICE, 2016).

2.2.5 An overview and uses of the NEC

The NEC3 suite of standardised contract documents is a multidisciplinary and an integrated set of standard contracts for construction and works engineering that covers construction and professional engineering services. This set of documentation was first developed in 1985 in London. The London Institution of Civil Engineers endorsed and approved the recommendations from their Legal Affairs Committee to conduct a basic review of alternate contracting strategies with the view to identify the need for good practice in the construction sector. These recommendations came out

of the belief by many engineers and contractors that there was a need for newer approaches to contracts, in line with recent approaches to construction management (CIDB, 2005).

RICS (2014) also mentions that the NEC3 is a suite of standardised forms of construction contracts, comprising of the following characteristics:

- their application is intended for the stimulation of good contract and relationship management between the client and the contractor and of the work included in the contract,
- they can be effectively used in a variety of commercial transactions, for a wide range of works and in any discipline, and
- they are intended to be straight forward, clear and simplified documents, using simple language which can be easily understood.

With time, the NEC has matured with interest and uses from forward thinking institutions wanting a change in how they deal with contractors in a manner that is not adversarial. The NEC2 set of documents were published in 1995 and the NEC3 contracts satisfied the Achieving Excellence in Construction principles and are endorsed by the UK Office of Government Commence for use in public sector construction works (CIDB, 2005). The NEC suite of contract documents can be used on both public and private sectors, including civil works, commercial construction works, infrastructure, facility management, and purchasing and supply (RICS, 2014).

In summary, according to the researchers, the idea of standardising one consistent standard form of construction contract for all projects in South Africa is not ideal, just as it is for every client to tailor-make his own form of construction contract for every project. In other words, a balanced view has to be maintained between the two extremes. The purpose and application of the forms of contract reviewed in this section is to ensure that there is sufficient documentation suitable of catering for a wide variety of disciplines and of the requirements of different client (CIDB, 2005).

2.3 Purpose of standardisation of contracts

According to SACQSP (2014), the purpose of standardised forms of construction contracts is to facilitate any contractual agreements between two or more parties in

any project. These documents contain ready-made terms and conditions when drafting a contract. These documents are common in the construction industry and are widely accepted by the many contractors. It is almost impossible to develop form of construction contract that would take into account of all eventualities and all risks that are likely to occur in any typical project as there are various factors that influence what form of construction contract is appropriate for a project, for example, client involvement, level of technical complexity, the geographical location, nature and magnitude of the project.

Furthermore, the need for standardised forms of construction contracts arises from the need to provide good written contractual documents that can be practically used without the need for extensive legal resources, and from a need to make standard certain contractual relationships and practices in accordance to the general agreements and contract basics reached by the involved parties. Standardising forms of construction contracts is a way to ensure that certain basic and widely accepted practices are followed in construction projects, and that better agreements are achieved by using forms of construction contracts with which the contracted parties are already used to (SACQSP, 2014).

Most standard forms of construction contracts include conditions of which the fundamental purpose is to set procedures and conditions of general application for a wide range of construction works. There are no rules as to what should be incorporated in these contract conditions. Uff (2009) suggested that many contract conditions follow a pattern that is standard and the conditions typically deal with:

- General obligations,
- Provisions for instructions,
- Payment arrangements,
- Insurances and contract liabilities,
- Quality control,
- Delay, Completion and extension of time.
- Responsibilities of the engineer, and
- Disputes resolution.

According to RICS (2014) when setting up a project it is common to base a contract between the client and the contractor on standard forms of contract. These are contracts that have been compiled by industry regulatory authorities or professional associations that are intended to providing a set of standard conditions for clients and contractors to agree upon. Using these standardised forms of construction contracts can result in savings of time and cost for clients because they do not have to engage in drafting and negotiations of contracts or engage lawyers to do so on their behalf for every project. They can also be used in their original form without amendments to the standard terms and conditions.

2.4 Factors influencing choice of contract by clients

The choice of a compatible form of construction contract is intimately linked to the overall procurement strategy developed for a project (Cunningham, 2013). According to Masterman & Gameson (1994), one of the key characteristics that determine a client's choice of a contract is their level of experience of implementing construction projects. The decisions that need to be in relation to contract selection are somewhat complex. They also involve several competing project goals and key drivers. These decisions are influenced by the perceived level of difficulty of the environment which the construction project is being delivered (Walker & Lloyd-Walker, 2014).

Many clients use various strategies for their projects. The current process of contract selection tends to be carried out in an unstructured and perfunctory manner which may give rise to the adoption of strategies beyond the appropriate choices. The results of using a rash contract strategy could be an obstruction to the realisation of certain anticipated benefits associated with the designated method and may ultimately lead to project failure (Rwelamila & Meyer, 1999; Ambrose & Tucker, 1999).

There is almost no clear guidance for construction managers and clients on how to make these contract decisions. In most instances, the selection of forms of contract is made in line with the corporation’s policy. In addition, the current practice of enlisting project managers and engineers with experience, and getting them into a room for a meeting is not helping the contract selection process and there are numerous problems with this approach. The leader dominates and the sessions are not

facilitated. Those who shout the loudest and lead set the tone. If the group starts down the wrong path they often don't look back (Forman & Selly, 2001). Yet, most corporations and public entities still depend on these experienced engineers and project managers for their corporate policies which drive the process of contract selection as well as procedures and processes (Ikhinmwin, 2014).

Some researchers have in the past conducted studies and demonstrated conclusively that some clients have a poor understanding of how they make serious project decisions (Cook & Hammond, 1982). Evidence has shown that some clients find it difficult to make consistent judgments and decisions when more than one attribute is involved and therefore there is a strong argument for providing some structured guidance to help them think through their choices (Forman & Selly, 2001) and from this itself, the question of experience, skills and competencies is raised.

Some corporations and public entities do not have in-house experts with the right experience and skills in departments where capital projects are implemented and this is a major problem. This is a crucial factor to be considered when selecting a form of construction contract. This situation is not made easier by the ageing and retirement of experienced engineers and project managers (Mandil, 2005).

As mentioned by many scholars, there are many important decisions that need to be made in the contract selection process. It is a requirement that those involved in making contract selection decisions should have experience and well-informed (Ikhinmwin, 2014). The level of experience of different clients will greatly influence the method they use to appoint an advisor to assist in the development of their requirements and needs, and ultimately select a contract (Hillebrandt, 1984).

For example, large client organisations who have executed projects before, or implement projects frequently, can use past experience, or may even employ in-house advisers with construction expertise (Masterman, 1992). Most problems develop with clients who have very little or no experience of executing a project, and have no in-house skills to assist them in their decision-making process (N.E.D.O., 1983).

Many researchers clearly suggest that experience, competencies and a good level of understanding are key features when selecting suitable forms of construction contracts (Masterman & Gameson, 1994; Walker & Lloyd-Walker, 2014; Mandil, 2005). The literature strongly suggests a strong link between Client's skills, experience and competencies to contract selection. Researchers also suggest that the lack of some structured guidelines (Forman & Selly, 2001) coupled with lack of experience (Hillebrandt, 1984) can make clients to arbitrarily select contracts without any reason or justification.

2.5 Client categories of experience

Masterman & Gameson (1994) mentioned that clients have the desire to be involved in the process of selecting forms of construction contracts. Clients want to participate in all the construction processes at varying levels, essentially increasing their satisfaction. The more they participate in the construction process, the more they achieve their goals and objectives (Davenport & Smith, 1995). However, their participation levels depend on their experience. That being said, clients are categorised into 4 groups in line with Masterman (1992) and Masterman & Gameson (1994):

- A1 clients are secondarily experienced
- A2 clients are secondarily inexperienced
- B1 clients are primarily experienced, and lastly,
- B2 are primarily inexperienced clients.

In conjunction with Masterman (1992) and Masterman & Gameson (1994), Naom & Mustapha (1994) used the following classification for client experience:

- Clients with high levels of experience are said to have more than 3 projects successfully completed,
- Clients with moderate levels of experience have two or three projects successfully completed, and
- Inexperienced clients are said to have never initiated a project.

Overall, determining the factors that influence clients' choices of forms of construction contracts is important, especially in relation to clients' experiences, background and knowledge (Davenport & Smith 1995).

2.6 The role of the client in contract selection

A client is a person whom a project is carried out for in the course or furtherance of a skill or trade, a business or undertaking, or whom undertakes a construction project directly in the course or a furtherance of such skill or trade, business or undertaking (Health & Safety Authority, 2009). A client is the person or an entity (such as a firm), with the controlling interest in the construction project. In general, the client holds a significant level of power or control over the evaluation and appointment of engineers and contractors for a project (Health & Safety Authority, 2009).

British Property Federation (1983) reiterates that a client as the person or firm who is responsible to commission and finance the design and construction of a project. Kamara et al., (2000) also mentions that clients can also be the user of the end product of a construction process, or the client and user may be separate entities or parties. As the purchaser of a service from the construction process, the client must represent the interests of users and other groups, parties or organisations who have an influence, and are mostly affected by the purchase of the construction product, use, operation, and demolition of the product being commissioned (Kamara et al., 2000). Kamara et al., (2000) further adds that a client; as a body or an entity incorporates the interests of the buyer of a construction service, alongside its prospective users and other interests groups.

According to van Rijn (2005), the client normally takes the initiative to have to start with a project. The client is the actor who pays for the construction project. The client can either sell or let or do as he/she wishes with the finished construction product. Thus the client is the one who orders the construction project.

Above all the client is regarded as the sponsor or financier of the project. He or she initiates the project process and appoints the team (engineer, architect, project manager, construction manager). The Client is the ultimate owner of the project and he/she is the one who gets affected by the outcome more so than any other party (Rowlinson & Mcdermott, 1999). In agreement, Bower (2003) affirms that the client has the highest responsibility of any project, making him/her the key decision maker. Therefore, it is important that the client needs to be aware and conscious on the decisions he makes.

In the same way, the client has to select a contract strategy based on priorities of the project, the capabilities of management and the risk levels that they are prepared to accept. The strategic decisions that are made in the beginning of a project are imperative and most crucial, where they must be continuously and critically examined and reviewed by the client (Langdon & Rawlinson, 2006). According to Aboushiwa & Bower (2000), the improved understanding of the project and its objectives by the client as well as a better contract strategy, can lead to the reduction of unnecessary costs. Recently most unnecessary costs in contracts are caused by litigation and disputes. One important aspect to be taken care of by clients is the project goals and objectives (Aboushiwa & Bower, 2000).

The attitude of clients towards constructions project is a serious matter for consideration and this involves the level of client involvement in the construction project. Some clients with limited or no experience at all would rather stay away from the internal project technicalities (Dhanushkodi, 2012). Experienced clients aware of the work culture, are said to be more involved in the construction process. Such levels of involvement must be specified at the beginning of the project (Dhanushkodi, 2012). Such attitudes and experiences have an impact in the client's participation in the procurement, contract strategies and contract selection of the project.

2.7 Goals and objectives of a client

According to Masterman & Gameson (1994), the selection of an appropriate contract strategy strongly depends on the accurate identification of client requirements. At the beginning and early stages of any project, after the client enlists the services of his advisor (engineer, architect, project manager, etc.) the main challenge that is faced by clients is that of deciding on a suitable contract strategy and the right form of construction contract that will suit the project needs and objectives (Elbeltagi, 2009). APPC (2002) highlights that at project initiation all risk resides with the client. The capacity of the client to manage those risks is dependent on the contract strategies adopted at the beginning and the nature of the relationships entered into as the client progressively engages other parties to successfully deliver the project.

The Client has to set the primary goals and objectives of a project (Perry, 1985) in order to select the right form of construction contract. Bower (2003) agrees that

setting such goals and objectives has become a dilemma in recent times, due to the wide diversity of both clients and construction requirements in the industry.

The client must have a number of overall and precise objectives, namely primary and secondary objectives. Primary objectives include functional performance, time objectives, and cost objectives while secondary objectives could arise on a construction project and would have a major influence on contract strategy decisions (Elbeltagi, 2009). Clients must be very specific and clear on their objectives including what they need. If clients give enough attention on what they need, they can save themselves from many problems that may arise in future. For example, other contracts are not flexible and may not allow them to bring in variations (Aboushiwa & Bower, 2000).

Client' needs and requirements can be unique for every project and consequently each project will have unique characteristics. For an example, completing the project at the right price within the right time may be a challenge. The establishment of a contract strategy is a key to the successful outcome of a project. The strategy should identify and prioritize important project goals and objectives, reflect aspects of risk and establish how the process will be successfully managed (Pautz et al., 2003).

The literature clearly suggests that clients need to make key contract decisions in the beginning of the project (Masterman & Gameson, 1994; Elbeltagi, 2009; Aboushiwa & Bower, 2000) and as such, these decisions have an impact on the success of the project. In order for such decisions to be made, what are the factors that influence the client's choice when making such key decisions at the outset of a project? This question shall be answered in this research study. The literature further suggests that a certain level of experience, skills and competencies are required to make such decision at the outset of the project.

2.8 The characteristics and background of the client.

Many researchers and practitioners strongly believe that the client's competences are critical to the success of public sector projects (Xia & Chan, 2010), the following is the summary of what some researchers have to say about client competencies:

- Songer & Molenaar (1997) also indicated that client's skills and competence are one of the critical factors for successful public-sector,
- Molenaar & Songer (1998) related client's skills and capabilities to the success in the selection of public sector projects,
- Leung (1999) and Chan et al. (2001) found that client's competencies are important to bring successful project outcomes,
- Quatman & Dhar (2003) also asserted that the success of projects depends on the owner's abilities and attitudes.
- Ling et al. (2004) used neural networks to predict performance of projects in Singapore and discovered that key variables affecting project performance may be attributed to both contractors and clients.
- Lam et al. (2008) identified the competency of client as one of the success factors for Design and Build projects. All these studies reflect that clients play a vital role in the delivery of projects.

These competencies are of great importance if the any project is to be delivered successfully. As Hillebrandt (1984) mentioned, the level of experience of clients will greatly influence the selection of a contract. Competencies are key to contract selection.

One of the main challenges for this subject matter is the identification of the characteristics of clients that are involved in formulation of contract strategies and decision making on which forms of construction contracts to choose. There seems to be a limited amount of available literature on this subject matter. On the other hand, the Project Management Competency Development framework (PMCD) provides a reasonable foundation for this subject (Ikhinmwin, 2014).

The three dimensions of the framework as shown by PMI (2010) that are required in order for a clients in the public sector to be recognised as fully competent are:

- *Knowledge* (what a client knows about applying processes, tools, techniques and to project),
- *Performance* (how the client applies project management knowledge to meet the project requirements), and

- *Personal behaviour* (how the client behaves when performing activities within the project environment; their attitudes and core personality characteristics).

Having considered the PMCD framework, we can understand the roles, responsibilities, qualities and the expertise of clients that establish or contribute directly to establishing contracts in the construction industry (Ikhinmwin, 2014). Those that are involved in the contract selections are:

- Clients,
- Contract managers, and
- Project Managers.

According to the State of Queensland Department of Public Works (2008), the competencies required by those involved in selection of appropriate contracts for public works are as follow:

- The knowledge of key objectives of, and constraints on, the project,
- The knowledge of risks (both typical and specific) that might impact upon or be encountered at each stage in the delivery of the project,
- The knowledge of how best to deal with those risks,
- The knowledge of different levels of complexity of the project,
- The knowledge of key processes and activities that must be performed in order to successfully deliver the project,
- The knowledge of current and available procurement strategies and contracts, and
- The knowledge of the relevant public financial management policies.

According to APPC (2002), the skills, competencies and expertise which are required and applied to procurement planning, design and documentation, tendering, project and contract selection have a significant and lasting impact on final costs and project outcomes. For successful outcomes this requires that clients must have the capability, skills and expertise to:

- Identify needs,
- Negotiate the procurement package,
- Manage the contract selections and relationships, and
- Monitor the delivery and measure suppliers' performance.

Furthermore, the APPC (2002) also states that the more complex the project, the more necessary it is for government as the client to have the skills and capabilities and expertise to ensure that projects are successfully delivered.

According to literature, some researchers have linked client competencies to contract strategy choices. CCIA (2006) highlighted that many clients lack the adequate competences to conduct projects with certain types of contracts successfully. For example, In China alone, only less than 10% of the construction projects are delivered with the Design-Build contract method and most of the clients remained inexperienced with this system and as a result it is not selected, although it has been demonstrated to be an effective delivery method for projects in recent years in many countries around the world. Xia & Chan (2010) in their study also highlighted that clients must have a certain level of abilities to successfully select, negotiate, manage and monitor the progress of construction contracts in order to achieve the goals and objectives of the project.

2.9 The role of the advisor/consultant

Traditionally, the advisor/ or consultant under the contracting systems has performed duties and exercised contractual powers. With respect to some duties and authorities, he is an agent of the client. With other duties, the advisor/consultant is a neutral and an independent third party professionally trained in fairly maintaining balance between the contractor and the client (Ndekugri et al., 2007). An advisor/or consultant has to be appointed for the entire project and the appointment should be done at the very beginning of the project (Spring & Wearne, 2003; Perry, 1985). Spring & Wearne (2003) describe the role of the advisor/ or consultant as the one who provides clear direction, discipline and drives the project. Appointing an advisor/or consultant with good expertise, energy and enthusiasm for the project is a good start.

Since few clients have either the expertise or capacity to undertake construction projects on their own, the current practice is to engage external service providers such as architects, consulting engineers, constructors and technical specialists to deliver the infrastructure assets that are needed. Such external service providers act as principal advisors to the client. For most clients the activity of construction is a

complementary activity and thus it is no economically feasible for them to retain these specialist skills in order to carry on their primary core business activities (Richards et al., 2005).

According to the Institute of Civil Engineers (1995), in its engineering and construction contract the role of the engineer/consultant has been divided up and allocated various separate aspects:

- a project manager administering the contract so as to achieve the client's overall objectives,
- a supervisor monitoring the works with the aim of ensuring quality and compliance with the contract,
- a negotiator,
- an adjudicator jointly appointed by the contractor and client to decide disputes arising from the contract, and
- the client's engineering designer.

All the aspects except the adjudicator are fully agents of the client. NSPE (1996) states that the roles and responsibilities of the engineer as an advisor to the client is the most important one. During the construction process it is important that the client gets competent, trustworthy project and contract advice and guidance. Without that advice from the engineer, the client will be limited in his or her ability to make the correct decisions regarding the construction contract.

Furthermore, NSPE (1996) states that the engineer/consultant's role during the construction project is the following:

- Advising, representing and consulting with the client during the construction process,
- Selection of a contract,
- Receipt and review of the contractor's submissions,
- Review and approval of the contractor's payment certificates,
- Providing interpretations and clarifications of the construction contract;
- Managing the changes of the construction project,
- Assisting the client and contractor with dispute resolution, and
- Providing observations of the project progress.

The literature clearly suggests that there role of the engineer/consultant as an advisor to the client on selection of contracts is of paramount importance. Ikhinmwin (2014) highlighted the reliance of clients on consultants and engineers for advices relating to selection of contracts. This clearly highlights the fact that engineers and consultants as advisors have a significant influence on clients' selection of contracts.

2.10 Consequences of not selecting an appropriate form of construction contract

Each project is unique with its own different characteristics and requirements. For a project to be successful the contract strategy must be carefully selected so as to satisfy the technical needs or objectives of the project (Alhazmi & MaCaffer, 2000). Due to the proliferation of contract approaches clients now have the responsibility to select appropriate contracts for their projects (Okunola, 2012).

The use or application of an inappropriate standard form of construction contract for a project can be very dangerous and may often mean that goals and objectives in terms of time cost and quality may not fully be realized and that the likelihood of claims and disputes may increase (Ramus et al., 2006). According to Klee (2015) the choice of an appropriate delivery method, including the form of construction contract is essential to any project. Inappropriate documentation, contract selection and contract administration may lead to disaster. The form of construction contract selected for a project is key to the success and it is very important to select a contract that is appropriate in order to avoid disastrous consequences as Ramus et al. (2006) mentioned.

Vrijboef (1998) highlighted common causes of problems in construction procurement processes and projects. He highlighted the following:

- Inappropriate contract strategies,
- Inappropriate planning,
- Inappropriate documentation, and
- Inappropriate form of construction contract .

It is clearly brouht out by the literature that by not selecting an appropriate form of construction contract , a series of problems during construction may occur. So it is important that Project and construction managers have to select a proper contract to

encourage the client and contractors to work rationally together so as to achieve the best possible outcome in accordance to their common goal and within the expected risks and with minimal consequences (Walker & Rowlinson, 2008).

2.11 Familiarity of forms of contract

Hoffman (1998) mentioned that being familiar with one form of construction contract is seen as an advantage. This advantage increases the level of compliance to such forms of contract. However, the advantage of familiarity also favours the use of only one form of construction contract over another. At the same time, clients may change or adapt to other forms of contract as they become more and widely used in industry. The comfort and familiarity of a certain form of construction contract by clients may, at many times, play an important role in the final choice made by such client. For example, some clients in the construction of commercial buildings may be familiar with using JCT and have less experience with the NEC3. Some forms of construction contracts are well used by clients that are highly sophisticated, who are familiar with construction processes and have a better understanding of constriction processes (RICS, 2014).

In Australia, in a recent study, it was revealed that familiarity with a certain form of construction contract was one of the key drivers in selection of forms of construction contracts. Familiarity was the key reason in selecting a form of construction contract. In the same study, it was also highlighted that being familiar with a particular form of construction contract does not mean that one is fully informed. Some professionals say that they select a form of construction contract because their firm had used it when their firms were still in their early stages and were running relatively small projects. Such firms continue to use the same forms of construction contracts even after they had grown in size and were now running larger projects. Other professionals select a form of construction contract based on how the industry selects. If the industry widely uses one form, they also select such forms without really assessing the pros and cons of such choices (Sharkey et al., 2014).

Some forms of contract do not need a level of familiarity. For example, in the UK, the JCT's Minor Works Building Contract and Intermediate Building Contract can be used by clients with little or no experience. These forms of contract are such that the client

can depend on the engineer for guidance. The JCT Major Project Construction Contract is tailored for clients with experience a high level of sophistication. Such clients have to make complex decisions and have to manage multi-contract relationships. Advisers to clients on which form of construction contract to select have to assess the ability of the client to manage risk and bearing of obligations before they can recommend which form of construction contract to select. These advisors also need to consider the clients' comfort and familiarity with certain forms of construction contracts (RICS, 2014).

2.12 Summary of the literature review

In any construction project, the selection of an appropriate form of construction contract is of paramount importance as it may contribute to the success of the project. Based on the literature considered for this study, it can be concluded that some clients do make selections of contracts in an arbitrary manner. Literature also shows that there are no clear guidelines of selecting forms of construction contracts but there are consequences for not selecting an appropriate form of construction contract. In South Africa, the public sector as a whole currently uses 4 standard forms of contract, namely:

- FIDIC (French acronym for International Federation of Consulting Engineers)
- JBCC (Joint Building Contracts Committee)
- GCC (General Conditions of Contract for Construction Works)
- NEC (New Engineering Contract)

The literature also highlights the importance and uses of the abovementioned standardised forms of construction contracts. The extent of use of these standard forms of construction contracts has been shown in Section 3.2 (Literature Review). Furthermore, the role of the client in defining his objectives, goals and deliverables of the project has been brought out. In order for clients to realise such goals, objectives and deliverables, the clients need to make key contract decisions that will have an impact on the delivery and success of the project. One such important decision is the selection of a suitable form of construction contract.

The role of the advisor and consultant in influencing the client is has been discussed. The importance of having such advisors is clearly highlighted. Furthermore, according to the literature, during the process of selection, the client should have some form of background, a good level of understanding of the project, a certain level of skills and competencies, good judgement and some experience. The consequences of selecting an inappropriate form of construction contract have also been discussed.

Many scholars seem to agree with the fact that skills, experience and competencies are strongly linked to good contract choices and subsequently project success. However, that being said, it is still not easy to properly identify the factors that lead to clients' choices of forms of construction contracts. Many researchers have identified what is needed to make a good contract choice and yet little is said on what influences clients to select inappropriate forms of construction contracts.

2.13 Research gaps & problem statement

The literature that was surveyed for this study shows that a lot of research on what makes a good contract and which forms of contracts are suited for which type of works is available in abundance. The South African construction industry has regulatory bodies and authorities that show the extent of use, by sector, of the different forms of construction contracts. Statistical analysis of such trends of use by our construction sector is readily available.

However, not much focus has been put on clients. The question as to why clients select the forms of construction contracts they use has not really been answered. It is not clearly understood why clients make use of the forms of construction contracts they use and who or what influences them to make such choices. It is very common for clients to make contract selection decisions that are not based on facts or processes. It is also not clearly understood why clients behave in that way. Another less understood area of study is to determine who or which parties (clients or consultants) are the key drivers in contract selection decisions and processes. There are research gaps relating to what influences clients' behaviours, attitude and perceptions when it comes to selecting forms of construction contracts. The factors that may influence clients in selecting forms of construction contracts vary from a

wide range of possible theorised factors. This study will establish exactly which factors do influence clients to make the contract choices they make in Gauteng Province.

Chapter 3: Research Design and Methodology

3.1 Research Design

This chapter discusses the research design and framework that will be applied to this research study to achieve the specific objectives and research aims. The methods that have been selected in this study align with the specific objectives of the study and answer the research questions. The specific objectives of this study are as follow:

- To identify the factors that influence clients in the selection of forms of contract for construction projects,
- To establish which forms of contract are currently in use and determine their extent of use,
- To ascertain the extent to which standard forms of contract are used in their original state or modified.
- To determine who the drivers in contract decisions are.

As shown in Chapter 1 of this report, the main research questions that have been raised in this study are:

- What are the factors that influence clients' selection of forms of construction contracts?
- Who are the key drivers in contract selection decisions?

A number of non-demographic variables have been established in this study. The variables for this study are listed below and measuring them qualitatively will be of prime importance in answering the main research questions. They are as follow:

- Variable 1: Forms of construction contracts used,
- Variable 2: Selection processes,
- Variable 3: Who selects the contract, and
- Variable 4: Factors that are taken into account.

Research methodology is an approach used by a researcher to conduct the study (Leedy & Ormrod, 2010; Babbie & Mouton, 2008). Mouton (2001) sees research methodology as a focus on the process of research to be followed and the type of tools to be used. This chapter (Chapter 3) discusses the logic behind the research methods selected for the study. A systematic and logical approach will be outlined in

this chapter. The outline will link the research philosophy, approach, strategy of enquiry, method choice, time horizon and the data collection methods in order to meet the specific objectives and answer the research questions and to finally draw a conclusion (Yin, 1994).

According to Rowley (2002), the purpose of research design is to present an action plan for getting answers to the research questions and drawing conclusions. The research design should clarify what is to be achieved at the end of the study. This might also include defining the fundamental aspects of the research, such as the main question and hypothesis. Research methodologies have to reflect the wisdom and knowledge of the researcher so as to extract most of the valuable results of research using different available methods, whether combined or single form (Fellows & Liu, 2008; Doorewaard, et al., 2007). The sensitivity of the research methods that have been selected in this study match the research needs and are appropriate for this type of study. The use of qualitative, inductive case studies with an interpretivist paradigm in this study is necessary to enhance the understanding of the varying factors that influence clients' choices of forms of construction contracts (Dickson-Swift et al., 2007). This study involves researchers being placed closely to the real life experiences of the participants and it focusses on the emic and not the etic perspectives (Brodsky & Faryal, 2006).

3.2 Research Paradigm

The research process, according to researchers, has three dimensions, namely:

- **Ontology:** "*a branch of philosophy concerned with articulating the nature and structure of the world*" (Wand & Weber, 1993),
- **Epistemology:** '*the nature of the relationship between the researcher (the knower) and it denotes, the nature of human knowledge and understanding that can possibly be acquired through different types of inquiry and alternative methods of investigation*" (Hirschheim et al.,1995), and
- **Axiology:** "*Axiology allows the researcher to understand and recognise the role their values and opinion play in the collection and analysis of the research as opposed to eliminating or trying to balance the influence of it*." (Thomas, 2010).

A research paradigm is a round system of interrelated practices and ideas that define the nature of research along the critical three dimensions highlighted (TerreBlanche & Durrheim, 1999). According to Denzin & Lincoln (2005), a paradigm is defined as a set of beliefs or ideas which contain the epistemology of the researcher, ontology and methods which guide his/her process of action. Kuhn (1977) defines a paradigm as: "an integrated cluster of substantive concepts, variables and problems attached with corresponding methodological approaches and tools…" In summary, a paradigm simply implies a pattern, structure and conceptual framework of scientific and academic ideas and assumptions (Olsen et al., 1992). Thus, the selection of a suitable paradigm for study is of prime importance.

Based on the definitions of the term paradigm by Denzin & Lincoln (2005), TerreBlanche & Durrheim (1999) and Kuhn (1977); the research question is based on real-life occurrences (the selection of forms of construction contracts by clients in metropolitan municipalities in Gauteng), therefore the selection of the research paradigm is purely epistemological, that is, the relationship between the real world being investigated and the researcher (Hirschheim et al., 1995; Wand & Weber, 1993). An epistemological paradigm is well fitted for this study as it assumes that events are clearly understood along the mental process of interpretation that is mainly influenced by an interaction with social context. Those that engage actively in the research design and processes socially build knowledge by experiencing real life occurrences.

3.3 Research philosophy

The research will be based on one main philosophy, Interpretivism. The Interpretivist's focus is to explore complex phenomena with an aim to gaining knowledge and understanding. Interpretivism is an approach that makes use of the meaningful nature of respondents' characteristics and their participation in everyday life activities (Elster, 2007; Walsham, 1995). The main purpose of Interpretivist is to understand and interpret daily occurrences and experiences including the value people attach to the phenomena (Collis & Hussey, 2009; Rubin & Babbie, 2010). Reality is not perfectly understood due to the limitations human beings and the world complexities (Guba & Lincoln, 1994).

Interpretivism looks for meaning and what motivates and influences people's behaviour and the way they interact with others in the society (Whitley, 1984). Interpretivism denotes that research methods which assume the stance that people's knowledge of realities is a form of social construction by human actors and it specifically rules out scientific methods (Eliaeson, 2002; McIntosh, 1997). Interpretivism, naturally promotes the value and importance of qualitative information in pursuit of knowledge and understanding (Kaplan & Maxwell, 1994). Naturally, this philosophy is more concerned with the unique situations, in this case, the factors that influence clients to selects forms of construction contracts, and thus contributing to the underlying pursuit of contextual deep meanings (Myers, 1997).

Layder (1994) argued that the humanist approach which is an interpretivist approach gives more importance to "*action over structure*" and it is the primary goal of the researcher to see things from the perspective and viewpoint of the social human actors. The study seeks to understand, from the perspective and opinion of the social actor, the factors that influence clients to select forms of construction contract that they use in their organisations. The Interpretivism research philosophy is well fitted to the nature of knowledge and information which is sought and required by this study and will help to answer the research question and also to achieve the specific objectives.

3.4 Research approach

Qualitative research approaches are often said to use inductive methods or induce reasoning as it moves from a specific observation about an occurrence to a broader generalization and adding to theory. In this study, an inductive approach will be used. Inductive research uses the participants' views and opinions to generate broader themes and create a theory that connects the themes. The study will begin with some specific observations and measurements and then proceed to detecting some patterns in the collected data. The concluding results of the study may lead to some general conclusions (Creswell, 2003; Trochim, 2006).

Inductive approaches tend to offer truths by assuming and showing that if something is true for a specific case then it is generally true for all similar cases. In this study, three metropolitan municipalities in Gauteng will be considered. In line with the

inductive approach, the factors that influence clients' choices for forms of construction will be generalised to other metropolitan municipalities. Inductive approaches are also usually psychological in nature (Atta et al., 2015). Inductive research, which is qualitative in nature aims to present the realities through participants' eyes. Thus the inductive approach is well fitted to this study and links properly with the Interpretivism philosophy and the epistemological paradigm and it will help answer the research question and bring out the respondents opinions and perceptions as to what influences them to select the forms of construction contracts they use (Henwood & Pidgeon, 1993).

3.5 Research strategy

Qualitative research methods commonly use case studies as one of their strategies of inquiry. A Case study research strategy makes is possible for a researcher to closely study information within specific contexts. In many cases, a case study strategy selects a small or limited geographic area or a limited number of respondents as the subjects of research. A Case study explores and investigates current real-life occurrences through a detailed contextual examination of a limited number of conditions, and how they relate to each other (Creswell, 2009; Zainal, 2007). According to Yin (1984), a case study research strategy is an empirical examination that investigates a current occurrence within its real-life context when the boundary between occurrence and context are not clear and in which a number of information sources are used.

The advantages of using a case study are as follow:

- The examination of the information is mostly conducted and data collected within the area where activities take place (Yin, 1984),
- Case studies provide qualitative evidence (Zaidah, 2003),
- The results that are obtained in case studies help to describe real-life experiences and also clearly explain real-life complexities which may not be well captured through experiments (Zaidah, 2003).

A multiple-case design approach will be used in this study as it is easier to make generalisations from multiple-case approaches rather than in single approaches. This

approach has been adopted and will be used to study real-life events from a number of data sources through replication rather than sampling logic (Yin, 1984).

A case study is well fitted for this study as it will enable researcher to examine data at a small scale environment or at micro level, in this case, the three metropolitan municipalities in Gauteng. A case study is a practical solution in cases where big sample populations are difficult to access (Zainal, 2007). The case-study will help explain what factors influence clients to select the forms of construction contracts they use in their organisation. There metropolitan municipalities have been selected (multiple-case design) and the study will be able to make some generalisations. The case study will be conducted where the activity of selecting forms of construction contracts takes place.

3.6 Method Choice

Research is conducted through qualitative, quantitative, or mixed methods. In order to conduct this research, the researcher should decide within these three choices (qualitative, quantitative, or mixed methods). Research choices are types of qualitative, quantitative, or mixed methods designs that provide specific direction for procedures to be followed in a research design (Creswell, 2009). For this study, qualitative methods will be followed and the research will be a case study as shown in Table 3.1, which summarises the strategies of inquiry.

Table 3.1: Alternative Strategies of Inquiry (Source: Creswell, 2009)

Quantitative	Qualitative	Mixed Methods
• Experimental designs • Non-experimental designs, such as surveys	• Narrative research • Phenomenology • Ethnographies • Grounded theory studies • Case study	• Sequential • Concurrent • Transformative

It is more sensible to use a research method that uses qualitative techniques, to better the outcomes and conclusions. A humanistic way of solving research problems which is prevalent in Interpretivism research paradigms gives priority to action over structure and thus requires the researcher to view things from the

perspective of human respondents. An inductive approach which uses qualitative techniques is more suitable to examine the research problem in a natural setting so as to understand the feelings and the meanings of what is being said by the respondents (Layder, 1994).

3.6.1 Qualitative methods

A qualitative approach aims to gain insight and understanding of people's world view (Fellows & Lui, 2008). Qualitative writing has rich in writing, descriptive and narrative, as many researchers try to capture experience, perception, conversations, and meanings. This is research method that uses words and not numbers (Willis, 2008). Thus, the main reason for using a qualitative approach is the collection of evidence for the experiences of people and their perceptions.

According to Hancock et al. (2009), qualitative research methods involve the use of methods which are clear and auditable and in a systematic manner. The characteristics of a qualitative research approach are as follow:

- The research has to focus on how people or certain population groups behave and look at reality,
- The research takes into account complexity and it combines the real-world context and can take different viewpoints on board,
- The research examines the behaviour of people in natural settings and makes use of their accounts as data and there is usually no manipulation of data and variables,
- The research focuses on the reports and experiences which cannot be fully expressed in numeric form, and
- The research also focuses on descriptive approaches and interpretations and can lead to the development of new theories, or to an analysis or evaluation of an existing organisational process.

Kumar (2005), Jones & Kottler (2006) and Creswell (2009) also discussed some Qualitative research characteristics. They are as follow:

- **Natural setting:** qualitative research is normally conducted in settings that are natural, in other words, areas such as schools, workplaces, sports fields are preferred,

- **Descriptive:** qualitative methods are best at describing phenomenon using text and not numerics,
- **Processes:** the main aim of qualitative methods is emphasis on processes rather that the product, and
- **Inductive logic:** qualitative studies are often founded on inductive logic, in other words moving from specifics to generalisations.

3.6.2 Advantages and justification of using qualitative methods

The advantages of using qualitative methods according to Atieno (2009) are as follow:

- Qualitative methods allow the simplification and management of data without damaging the content and complex nature of such data,
- Qualitative research methods' goal is to generate newer ways of looking at existing information,
- Qualitative methods provide for a suitable response to research needs,
- Qualitative information can be represented in a quantitative way, numeric values can be allocated to certain meanings. The numeric values can be analysed and manipulated in order for the researcher to gain some knowledge and insight that help give explanations for the examination of some hypotheses, and
- Qualitative information requires qualitative judgement; numerics can't be explained without an understanding of the underlying assumptions.

Another advantage of qualitative research, according to Mack et al. (2005) is that of asking questions that are open-ended. Probing provides respondents with an opportunity to answer in their own way and in their own words, instead of pushing them to select from fixed answers, as done in quantitative research. Questions that are open ended can yield responses that:

- Have a rich meaning,
- Are unexpected and unanticipated by the investigator, and
- Are deep and explanatory in nature

Mack et al. (2005) also mentions another benefit of qualitative research. Qualitative research allows the investigator the flexibility to examine initial responses. In other

words, it is fine is, to ask "*why"* or "*how"*. The investigator should carefully listen to respondents and what they say, interact with them in line with their personalities. The investigators must also use probing methods by asking the respondents to elaborate on their responses.

The aim of this study is to determine what factors influence clients to make certain choices when selecting suitable forms of construction contracts for their projects. There is a possibility of a wide variance in the experiences of clients and the influence from their advisors, and hence such variances, perceptions and behaviours are covered by qualitative methods (Saunders et al., 2009). Therefore a qualitative research method is well fitted for this study and it fits well with the research philosophy and the research approach.

3.7 Time Horizons

In research, time horizon can be a one-time research (cross-sectional) or longitudinal. In one-time studies, the research is done in a specific point in time and the population sample is taken and analysed at a particular time period. A longitudinal study involves a particular occurrence that is researched at different periods of time (Kothari, 2004).

In this study, a cross-sectional time horizon was selected. The data was collected as a measurement that occurred at a single point in time. The advantages of cross-sectional time horizons is they avoid problems that relate to longitudinal time horizons, which are generally costly and consume time, eventually making participants to be less interested in participating in the study (Saunders et al., 2009).

3.8 Data collection, sampling & analysis

3.8.1 Literature Review

In this study primary and secondary literature resources were studied to gather theoretic information in order to provide an overview. In this study, both qualitative and quantitative approaches to literature were used (Creswell, 2007). Most of the literature analysed agrees with the type of methods that were used and it is significant for selecting the strategies for inquiries (Yin, 1994). Critically reviewing literature provides a foundation on which the study is built. The main aim of literature

review is to develop a thorough understanding and the capacity to obtain accurate and deep understanding into previous studies and the trends that are in place (Saunders et al, 2009).

3.8.2 Qualitative method: In-depth interview

An in-depth interview is a method used to draw a clear picture of the respondent's opinion and perspective on the study topic. During the in-depth interview, the respondent is seen as the expert. Interviews are very effective when used qualitatively as they get respondents to talk about their personal feelings and views, their opinions and their experiences. They afford researchers the opportunity to gain knowledge and insight into how respondents interpret and view the real world (Mack et al., 2005). In-depth interviews using open-ended questions with key respondent is a crucial part of many case studies, as the key respondent provides valuable information and insights into the study and can also point the researcher towards right direction (Saunders et al, 2009).

In this study, in-depth interviews were used to obtain the respondents opinion and perceptions and also gain insight into what influences them to select the forms of construction contracts they use. Interviews are well fitted for this study as they will enable valuable information that is required to answer the research question to be extracted from the respondents. Furthermore, in-depth interviews in case studies are more suitable to qualitative methods, which are the methods that have been selected for this study.

3.8.3 Study population and sampling

According to Vosloo (2014), *'a study population is the aggregation of elements from which the sample is actually selected*.*'* Sampling is defined as the process of choosing units with which you can provide practical means of collecting information for the study (Dickson, 2013). Naoum (1998) defines sampling as a sample or part of a population which is chosen to show what the rest are like. The selection of the sample is a very important part in the study. The characteristics of the sample must serve as a valuable representative of the main population group (Naoum, 1998).

For this study, a non-probabilistic sampling approach (Saunders et al. 2009) was used. A non-probability sampling technique provides the opportunity to purposively select a sample and to reach difficult-to-identify members of the population. The number of respondents for this study is relatively low, as such, judgment sampling will be used. The participants who will take part in the study will be selected using purposive or judgemental sampling. This method of sampling requires the use of personal judgment to select cases that might be best to answer the research questions and meet the research objectives (Saunders et al., 2009).

The intention is to choose respondents who are either involved or significantly influence the processes of selecting forms of construction contracts. Judgment sampling is often used for the selection of experienced and knowledgeable participants (Cozby, 2009). For this current study, topic-specific experts will be chosen as participants. The experts will be chosen based on their experiences and close involvement in selection of forms of construction contracts and contract strategy decisions in their organisations.

The study will focus on the three metropolitan municipalities in Gauteng Province, the City of Tshwane, the City of Johannesburg and Ekurhuleni Metropolitan Municipality. As mentioned in Chapter 1, the three metropolitan municipalities are among the biggest and largest client bodies of public infrastructure projects in Gauteng today. These metropolitan municipalities continue to invest in public infrastructure programmes and they contribute significantly to the construction sector, and rely heavily on the use of standard forms of construction contracts in their implementing of construction projects. As such, these metropolitan municipalities are suitable to be used as case studies (multiple case approaches) for cross-sectional studies (observational studies) to determine the factors that influence clients' choices of forms of construction contracts.

In order to provide justification for the respondents that will be selected, a selection criteria has been set and it is based on the following:

- Knowledge and experience in forms of construction contracts ,
- Participation in contract selection,

- Clients who enlist services of consultants/engineers (external service providers),
- Clients who have some form of experience with certain forms of construction contracts commonly in use.

According to Saunders et al. (2009), for studies where the researcher aims to understand common behaviour within a homogeneous sample, 12 respondents are enough. According to Patton (2002), homogeneous sampling has a focus on unusual cases because the information collected about the unusual outcomes will help you to understand the most and to will help answer the research question. This type of sampling is often based on the theory that the findings from such extreme cases will be useful and relevant in explaining more similar cases.

However, 12 respondents may not be enough to make generalisations. Creswell (2007) shows that for such studies, at least 20 respondents are adequate. Guetterman (2015) also suggested that for inductive studies, the average sample size is about 18. The chosen method of sampling is appropriate due to the limited number of sources of data for the study. In-depth interviews were conducted with all the respondents. A small sample can yield a study with depth and significance depending on the initial research questions and how the researcher conducts the research analysis (Speedling, 1981).

Judgement sampling can be more efficient than probabilistic sampling methods if applied in an appropriate manner (Bernard, 2002). Judgement sampling is well fitted for this study as it will allow for the selection of respondents that best answer the research question. This is primarily because a random respondent (in this case clients and in-house experts) may not be as informed as an expert who is purposely selected (Tremblay, 1957). There are some limitations such as funds which make the purposive sampling very suitable (Karmel & Jain, 1987; Topp et al., 2004). The number of respondents for the qualitative data collection is shown in Table 3.2 below.

The target population in these three metropolitan municipalities are suitable for this study as they are clients of construction projects, are involved in construction projects and are involved (directly or indirectly) in selection of forms of contracts.

Table 3.2: Number of respondents to be interviewed in study

Geographic Area	**Qualitative Interview**
City of Tshwane Metropolitan Municipality	12 respondents
City of Johannesburg Metro (including associated agencies, JRA, JDA, etc.)	11 respondents
Ekurhuleni Metropolitan Municipality	12 respondents
TOTAL	**35 Respondents**

The respondents will be individuals with experience in civil engineering, building and infrastructure development projects. The respondents will also be individuals who are involved in selection of forms of construction contracts.

The respondents which were selected have the following job titles in no particular order:

- Executive Director
- Director
- Deputy Director
- Investment Manager
- Programme/Development Manager
- Senior Project Manager/Chief Project Manager
- Project Manager
- Construction Manager

3.8.4 Pilot studies

Pilot studies are small scale pre-tests of instruments that will be used for research. Such instruments include qualitative in-depth interviews. Pilot studies are applicable to all research methods including mixed methods, quantitative and qualitative (Janghorban et al., 2013). For this study, a pilot study was conducted to determine the suitability of the qualitative in depth questions thaw would be used for the in-depth interviews.

3.8.5 Research Instruments

The research instruments have been designed. The instruments were tested in the pilot study before they can be applied to the sampled population of atleast three

individuals. The purpose of the pilot study is to check if the questions are clear, understandable and unambiguous. For this study, the purpose of the instruments was to determine behavioural variables on what influences clients or their organisations to behave in a certain way with reference to selecting forms of construction contracts (Saunders et al., 2009). The complete questions are shown in Appendix C.

The open-ended qualitative interview questions are as follow:

- *How many years of professional experience do you have in relation to contracts, infrastructure projects and selection of forms of construction contracts?*
- *Which standard form of construction contract is mostly used in your organisation?*
- *How frequently do you select this particular form of construction contract and why?*
- *What types of projects do you use these forms of construction contracts for?*
- *What factors influence you to select particular forms of construction contracts?*
- *Who makes the decision as to which of forms of construction contract to use?*
- *How the decision is made and by what processes is the particular form of construction contract selected?*
- *To what extent are the forms of construction contracts used in their original form, or amended?*
- *Which areas of the standard forms of construction contracts do you amend?*

3.8.6 Validity and reliability

Reliability and Validity examine the fitness of measurement and data collection (Khalid et al., 2012). Some qualitative studies begin to question the relevance of validity in qualitative research. In the management research field, reliability and validity are generally seen as the basis for accepting of a given piece of study as knowledge (Rowley, 2002).

In order for the study to be trustworthy, the following will be applied:

- **Credibility:** Engagement with the data was done intensively in order to demonstrate a clear link between the information and the interpretations (Vosloo, 2014);
- **Dependability:** The main purpose of this step was to show consistency and stability in the process and method of inquiry. Enough care was taken to ensure the study is traceable, logical, and written in a manner that gives a detailed step-by-step guide of the study processes that were followed (Riege, 2003);
- **Authenticity:** This process involves developing a research question that is based on a substantial theoretical basis (Vosloo, 2014); and
- **Confirming:** According to Vosloo (2014), this is a process of audit which is implemented by working backwards and forward throughout the study process. This is to confirm that the data and interpretations of the research findings are sound.

3.8.7 Data Analysis

For analysing the qualitative data, Qualitative Content Analysis will be used in this study. This method is used with a view to explore the meanings of what is being said by respondents. Qualitative Content Analysis according to Hsieh & Shannon (2005) is a research technique used to evaluate and interpret in a subjective manner, the meaning and content of textual information in a classification that is systematic and by using of codes and identifying patterns and themes.

Many researchers around the world view Qualitative Content Analysis as a technique that has flexibility when it comes to analysing information that is in text form (Cavanagh, 1997). This technique is from a group of methods that are used to analyse textual information. The techniques according to Rosengren (1981) are as follow:

- Impressionist analysis,
- Interpretive analysis,
- Systematic analysis,
- Textual analysis, and
- Intuitive analysis

The Qualitative Content Analysis will help obtain specific information about the behaviours, values, opinions and ideas of sample selected from the populations groups. Furthermore, Qualitative Content Analysis allows the researcher convert qualitative data to quantitative data (Saunders et al., 2009). The use of Qualitative Content Analysis will help in answering the research question.

3.9 Ethical Considerations

Research ethics relates to questions about how the research is formulated, clarified, designed and gaining access to collect, process, storing and analysing data and write up a research report of the findings in a moral and responsible way. This means that care has to be taken that the research design is both methodologically and morally sound to all those who are involved (Zikmund, 2000; Saunders et *al.* 2009). Ethical considerations involve obtaining permission to conduct a study, with the participation of selected experienced participants, the general community as well as the processes used to analyse information obtained (Keeves, 1997).

Partington (2003) defines ethics as a philosophical term derived from the word ethos (Greek language) that means '*custom'* and has a connotation of a code that conveys high moral values and integrity. The following key ethical issues in line with Saunders et *al.* (2009) were considered:

- The privacy of possible and actual participants was be ensured,
- The participation was be on a voluntary basis,
- Consent was obtained and participants will not be deceived,
- Confidentiality was maintained throughout the process,
- The data was analysed in a way which did not result in embarrassment, harm or discomfort to the respondents, and
- The behaviour and objectivity of the researcher was of a good and high moral standard.

Precautionary measures were taken to avoid any possible harm to respondents in the light of the research theme concerning the factors that influence clients to make certain choices when selecting forms of contract. Confidentiality was ensured. Appendices A, B and D contain the information document about the study to participants, ethics consent form and Ethics Clearance certificate respectively.

Chapter 4: Data Presentation, Analysis and Results

4.1 Background

This chapter briefly summarises the methods used for the study and it is followed by a detailed analysis of the responses. The findings that are discussed in this chapter are in relation to the study that was conducted to determine factors that influence clients' selection of forms of construction contracts. The study focused on the three metropolitan municipalities in Gauteng (City of Tshwane, City of Johannesburg and Ekurhuleni Metropolitan Municipality). In total, 35 respondents were identified and only 20 responded to the study. Babbie (1973) and Baruch (1999) stated that a 50% - 56% response rate is regarded as acceptable; hence the results in this research are acceptable as the response rate is 57%.

For this study, qualitative research methods were used. A non-probabilistic sampling technique was used to sample the population (Saunders et al., 2009). As highlighted by Saunders et al. (2009), a non-probability sampling technique provides the opportunity to purposively select a sample and to reach difficult-to-identify members of the population. Expert sampling, which is another method of purposive sampling, was selected for this study (Etikan et al., 2016). This method calls for the use of experts or specialists in a certain field of study. This type of sampling technique can be useful if there is somewhat a shortage of observational evidence (Etikan et al., 2016).

4.2 Rationale of questions

An interview questionnaire was administered to 35 respondents from the three metropolitan municipalities mentioned above. The questionnaire consisted of nine open ended questions. The questions and the rationale of each question are discussed below:

4.2.1 Question 1: *How many years of professional experience do you have in relation to contracts, infrastructure projects and selection of forms of construction contracts?* This question was aimed at establishing or determining the professional experience and background of each respondent in relation to the selection of forms of construction contracts. This question also aims at providing an indication of how much knowledge each respondent has and an indication of respondents' suitability for this study.

4.2.2 Question 2: *Which standard form of construction contract is mostly used in your organisation?* This question was aimed at determining which forms of construction contracts are currently in use for some or most of the projects that the respondents are involved in. This question also helps to answer one of the specific objectives of the study.

4.2.3 Question 3: *How frequently do you select this particular form of construction contract and why?* This question aims to establish, in a qualitative way, the extent and frequency of use of the forms of construction contracts mentioned in Question 2.

4.2.4 Question 4: *What types of projects do you use these forms of construction contracts for?* The aim of this question is to establish where or in which projects are these forms of construction contracts used (civil engineering projects, housing etc.).

4.2.5 Question 5: *What factors influence you to select particular forms of construction contracts?* The aim of this question is to answer the main research question. This question aims at providing clarity as to what really influences clients to select the forms of construction contracts in Question 2.

4.2.6 Question 6: *Who makes the decision as to which of forms of construction contract to use?* This question aims to establish who exactly makes the decision or decides which form of construction contract to use and it helps to answer the second main question and the fourth specific objective.

4.2.7 Question 7: *How is the decision made and by what processes is the particular form of construction contract selected?* This question aims at determining if there are formal or structured processes used to make the form of construction contract in Question 2.

4.2.8 Question 8: *To what extent are the forms of construction contracts used in their original form, or amended?* The aim of this question is to determine if the form of construction contract selected in Question 2 is used in its original or amended form when applied to the type of projects mentioned in Question 4.

4.2.9 Question 9: *Which areas of the standard forms of construction contracts do you amend?* This question is aimed at providing an understanding of which areas are amended if there are amendments.

4.3 Respondents information and background

The respondents' position and metropolitan municipality are shown in Table 4.1 below. The background of the respondents as shown in Table 4.1 varies and all the respondents cover the three metropolitan municipalities in Gauteng (City of Tshwane, City of Johannesburg and Ekurhuleni Metropolitan Municipality). Figure 4.1 shows the distribution of respondents between all three metropolitan municipalities. Of the 20 respondents, 9 (45%) are from the City of Tshwane, 6 (30%) are from the City of Johannesburg while 5 (25%) are from Ekurhuleni Metropolitan Municipality.

Table 4.1: Respondents basic information

Respondent Number	Position	Municipality
Respondent#1	Senior Project Manager	City of Tshwane
Respondent#2	Project Manger	City of Tshwane
Respondent#3	Deputy Director (Project Management Unit)	City of Tshwane
Respondent#4	Project Manager	City of Tshwane
Respondent#5	Project Manager	City of Tshwane
Respondent#6	Construction Manager	City of Tshwane
Respondent#7	Chief Construction Manager	City of Tshwane
Respondent#8	Project Manager	City of Johannesburg
Respondent#9	Project Manager	City of Tshwane
Respondent#10	Programme /Development Manager	Johannesburg Development Agency
Respondent#11	Project Manager	Johannesburg Water
Respondent#12	Director (Construction and Contracts Management Unit)	City of Tshwane
Respondent#13	Investment Manager	Johannesburg Water
Respondent#14	Manager (Project Management Unit)	Ekurhuleni Metropolitan Municipality
Respondent#15	Project Manager	Ekurhuleni Metropolitan Municipality
Respondent#16	Senior Project Manager	City of Johannesburg
Respondent#17	Senior Project Manager	City of Johannesburg
Respondent#18	Project Manager	Ekurhuleni Metropolitan Municipality
Respondent#19	Project Manager	Ekurhuleni Metropolitan Municipality
Respondent#20	Project Manager	Ekurhuleni Metropolitan Municipality

Their positions also vary from project managers, senior project managers, deputy directors (project management unit), directors and development managers. All the respondents are involved in the process of selecting forms of construction contracts in their respective departments/unit/sections. All the respondents are currently involved in construction projects. The respondents are in the fields of roads and stormwater infrastructure, water and sanitation and housing and building projects.

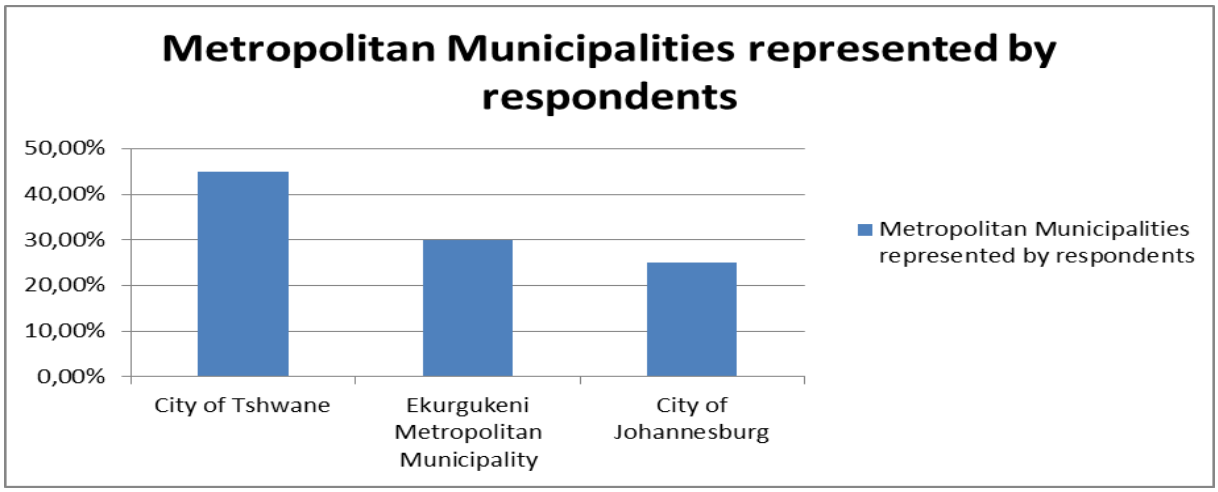


Figure 4.1: Metropolitan municipalities represented by respondents

Figure 4.2 shows the respondents' positions. Of the 20 respondents, 50% are project managers while 20% are senior project managers. The remaining 30% are construction managers, deputy director, director, investment managers and programme managers.

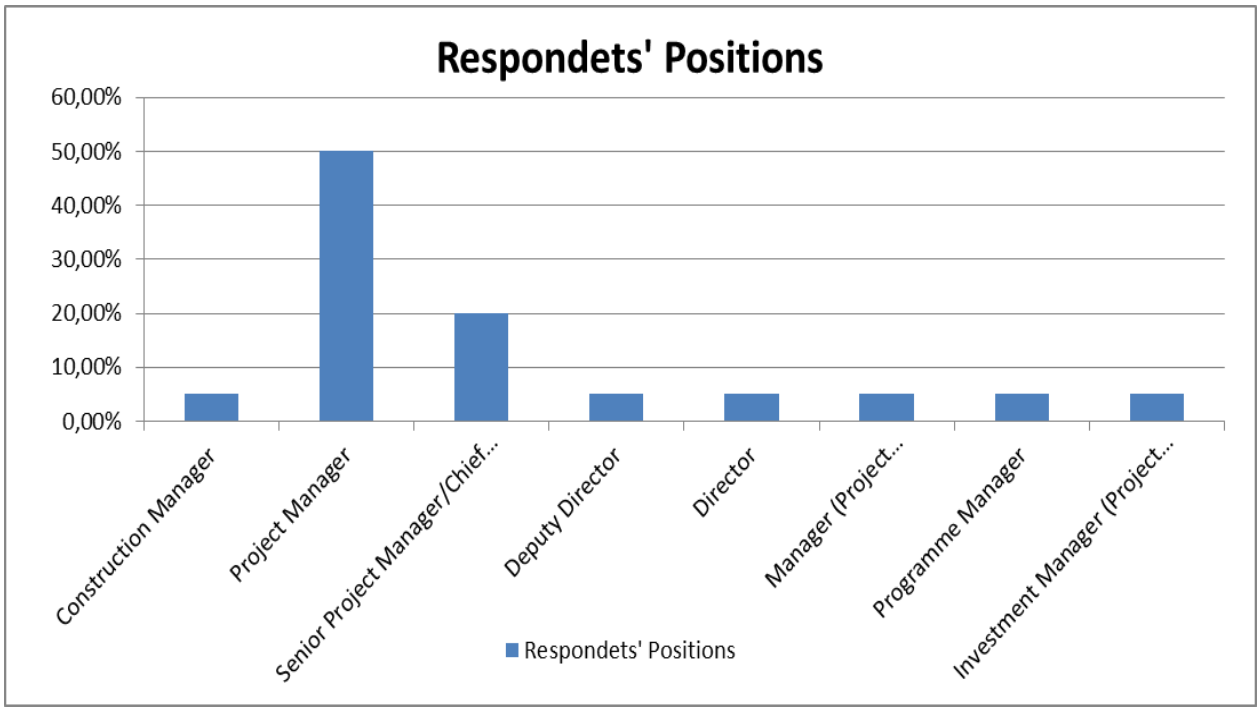


Figure 4.2: Respondents' positions

The respondents' background and professional experience in the construction industry in local government is shown in Table 4.2 below. Their years of experience are also shown.

Table 4.2: Respondents experience in relation to selecting forms of construction contracts

Respondent Number	Total Years of experience	Background: Field of expertise and professional experience
Respondent #1	17	Dams, Stormwater and Roads: Project and Contract Management, Project implementation and Project Planning.
Respondent #2	14	Roads and Stormwater Infrastructure: Project and Contract Management, Construction Management, Design and Site Supervision.
Respondent #3	17	Water and Sanitation: Project and Contract Management, Procurement and Tendering, Cost Management.
Respondent #4	05	Water and Sanitation: Project and Contract Management, Capital Budgeting, Construction Finance and Programme Management.
Respondent #5	15	Housing & Building: Project and Contract Management, Pricing, Estimating and Costing.
Respondent #6	12	Roads and Stormwater Infrastructure: Project and Contract Management, Site Supervision, Construction Management.
Respondent #7	30	Roads and Stormwater Infrastructure: Construction Management, Civil Engineering Design, Procurement & Tendering, Cost Management and Financial Management.
Respondent #8	12	Roads, Stormwater Infrastructure and Building: Project and Contract Management, Civil Engineering Design.
Respondent #9	08	Housing & Building: Project and Contract Management, Site Supervision, Construction Management, Procurement and Tendering.
Respondent #10	09	Multi-Disciplinary Projects: Project and Contract Management, Procurement, Tendering, Construction Management, Cost Management.
Respondent #11	20	Water and Sanitation: Project and Contract Management, Civil Engineering Design, Tendering and Procurement.
Respondent #12	22	Roads, Stormwater Infrastructure, Water and Sanitation: Project and Contract Management, Procurement, Tendering and Civil Engineering Design.
Respondent #13	12	Water and Sanitation: Project and Contract Management, Civil Engineering Design, Procurement and Tendering, Financial Management.
Respondent #14	16	Roads and Stormwater Infrastructure: Project and Contract Management, Tendering and Procurement, Civil Engineering Design.
Respondent #15	09	Roads and Stormwater Infrastructure: Project and Contract

		Management, Tendering and Procurement, Civil Engineering Design.
Respondent #16	16	Roads and Stormwater Infrastructure: Project and Contract Management, Tendering and Procurement
Respondent #17	10	Housing & Building: Project and Contract Management, Site Supervision, Construction Management, Procurement and Tendering.
Respondent #18	11	Housing & Building: Project and Contract Management, Site Supervision, Construction Management, Procurement and Tendering.
Respondent #19	16	Water and Sanitation: Project and Contract Management, Civil Engineering Design, Procurement and Tendering, Financial Management.
Respondent #20	14	Housing & Building: Project and Contract Management, Site Supervision, Construction Management, Procurement and Tendering.

The total years of experience of the respondents in relation construction project management have been shown in Table 4.2. All the 20 respondents have an average of 14.25 years of total work experience. All of the respondents have project and contract management experience. All the respondents have reasonable experience in the selection of forms of construction contracts and their applications to construction projects. This also strengthens their credibility and suitability as respondents to this study. Figure 4.3 shows the respondents total years of experience of the respondents and summarises the data in Table 4.2.

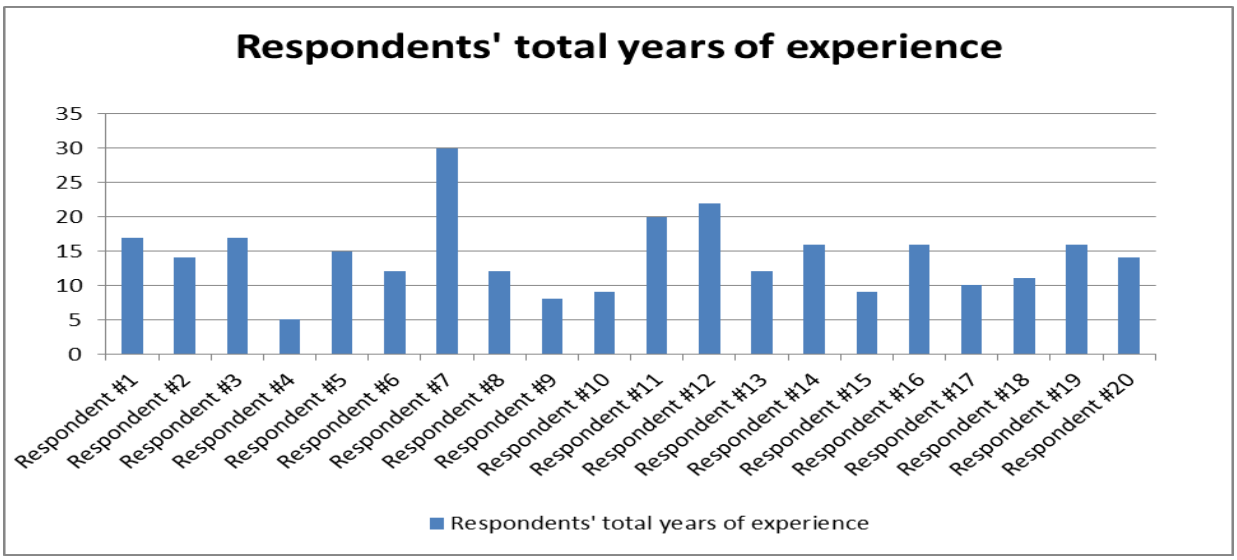


Figure 4.3: Respondents' total years of experience

Of the 20 respondents, 9 are involved in roads and stormwater projects across the 3 metropolitan municipalities and this represents 45% of the total respondents. Of the 20 respondents, 6 are involved in water, sanitation and bulk water pipeline projects across the 3 metropolitan municipalities and this represents 35% of the total respondents. Of the 20 respondents, 5 are involved in housing projects across the 3 metropolitan municipalities and this represents 25% of the total respondents. Figure 4.4 shows the respondents field of expertise and their background in relation to Table 4.2.

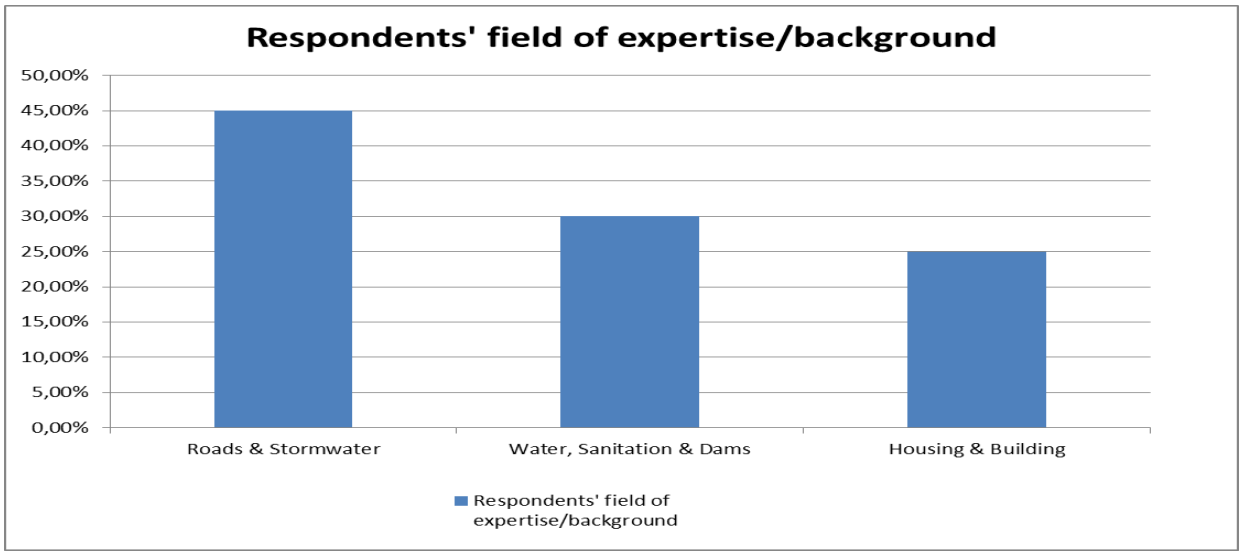


Figure 4.4: Respondents' field of expertise/background

The experience of the respondents also varies from tendering, procurement, project planning and implementation, site supervision, costing, estimating, civil engineering design and financial management. In all these different areas of expertise, it is accepted that a project manager comes across and/or uses forms of construction contracts. These expertise also strengthen the suitability of the 20 respondents to this study. The respondents' years of experience in relation to selecting forms of construction contracts is not the same as the total years of experience shown in Table 4.2. In this section, the number of years of experience relates specifically to the number of years in which the respondent has been directly or indirectly involved in selecting forms of construction contracts for the infrastructure projects that they have been directly involved in. Table 4.3 shows the respondents' years of experience in relation to selection of forms of construction contracts for infrastructure projects. Figure 4.5 shows the distribution of the years of experience with relevance to selecting forms of construction contracts for all the 20 respondents in relation to Table 4.3.

Table 4.3: Respondent's years of experience in relation to selecting forms of construction contracts

Respondent Number	Years of experience in relation to selecting forms of construction contracts
Respondent #1	13
Respondent #2	7
Respondent #3	9
Respondent #4	5
Respondent #5	5
Respondent #6	10
Respondent #7	20
Respondent #8	08
Respondent #9	06
Respondent #10	07
Respondent #11	15
Respondent #12	20
Respondent #13	05
Respondent #14	14
Respondent #15	09
Respondent #16	14
Respondent #17	8
Respondent #18	10
Respondent #19	9
Respondent #20	12

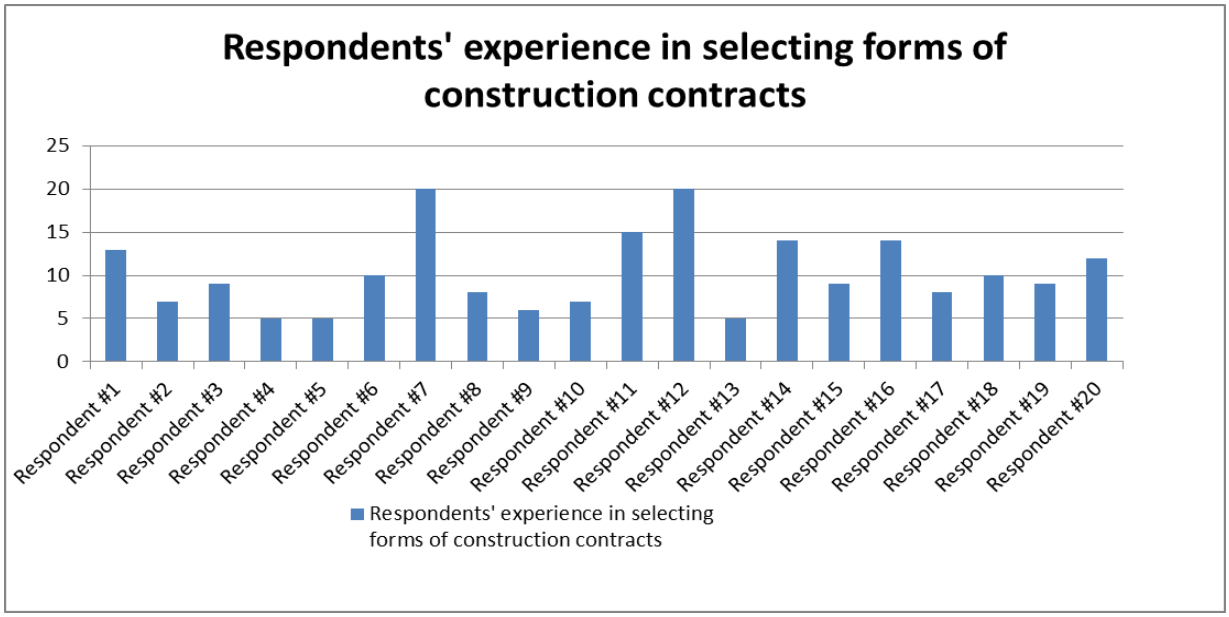


Figure 4.5: Respondents' years of experience in selecting forms of construction contracts

From Figure 4.5 above, the average years of experience in selecting forms of construction contracts for all 20 respondents are 10.3. The minimum is 5 years for respondents #4, #5 and #13. The maximum is 20 years for respondents #7 and #20. Tables 4.1 to 4.3 clearly show the respondents' background and their suitability for this study to answer the research question.

4.4 Data analysis of responses in relation to specific objectives

The following section shows the analysis of the interview responses in relation to the specific objectives of the study.

4.4.1 Factors influencing clients in the selection of construction contracts.

As mentioned earlier, the aim and the first specific objective of this study was to get to an understanding of what really influences clients to select the forms of contract they use in their organisations. Sharkey et al. (2014) listed some factors that might influence clients to select forms of construction contracts. They have identified the following factors:

- Familiarity,
- Suitability of form of construction contract ,
- Ease of use,
- Balance of risk,
- Mandate/recommendation by organisation and
- Common in industry.

For this question, the responses were analysed in line with these theorised factors highlighted by Sharkey et al (2014). Table 4.4 below shows the summarised responses of the factors that influence clients to select forms of construction contracts.

Table 4.4: Factors influencing clients' selection of forms of construction contracts

Respondent Number	Factor(s)
Respondent #1	The respondent mentioned that familiarity with the GCC as the main factor that influences them to select the GCC form of construction contract.
Respondent #2	The respondent mentions that they are influenced by supply chain policies which mandate them to use the GCC.
Respondent #3	The respondent is influenced by the fact that the industry well understands the

	GCC and everyone uses it.
Respondent #4	The respondent is influenced by the outcome of assessing the project requirements. Such outcomes influence the form of construction contract to be selected.
Respondent #5	The respondent is influenced by consultants who are appointed to run design and manage the contract. The consultants are more familiar with the GCC and hence influence the client to select it. The client being familiar with only the GCC easily endorses recommendation.
Respondent #6	The respondent mentioned that familiarity with the GCC as the main factor that influences them to select the GCC form of construction contract.
Respondent #7	The respondent mentioned that familiarity with the GCC as the main factor that influences them to select the GCC form of construction contract.
Respondent #8	The respondent is influenced by consultants who are appointed to run design and manage the contract. The consultants are more familiar with the GCC and hence influence the client to select it. The client being familiar with only the GCC easily endorses recommendation.
Respondent #9	The respondent mentioned that familiarity with the GCC as the main factor that influences them to select the GCC form of construction contract.
Respondent #10	The respondent is influenced by consultants who are appointed to run design and manage the contract. The consultants are more familiar with the GCC and hence influence the client to select it. The client being familiar with only the GCC easily endorses recommendation.
Respondent #11	The respondent is influenced by consultants who are appointed to run design and manage the contract. The consultants are more familiar with the GCC and hence influence the client to select it. The client being familiar with only the GCC easily endorses recommendation.
Respondent #12	The respondent is influenced by consultants who are appointed to run design and manage the contract. The consultants are more familiar with the GCC and hence influence the client to select it. The client being familiar with only the GCC easily endorses recommendation.
Respondent #13	The respondent is influenced by consultants who are appointed to run design and manage the contract. The consultants are more familiar with the GCC and hence influence the client to select it. The client being familiar with only the GCC easily endorses recommendation.
Respondent #14	The respondent is influenced by consultants who are appointed to run design and manage the contract. The consultants are more familiar with the GCC and hence influence the client to select it. The client being familiar with only the GCC easily endorses recommendation.
Respondent #15	The respondent is influenced by the suitability of the form of construction contract for the type of projects that they implement.

Respondent #16	The respondent is influenced by the suitability of the form of construction contract for the type of projects that they implement.
Respondent #17	The respondent is influenced by consultants who are appointed to run design and manage the contract. The consultants are more familiar with the GCC and hence influence the client to select it. The client being familiar with only the GCC easily endorses recommendation.
Respondent #18	The respondent is influenced by consultants who are appointed to run design and manage the contract. The consultants are more familiar with the GCC and hence influence the client to select it. The client being familiar with only the GCC easily endorses recommendation.
Respondent #19	The respondent is influenced by consultants who are appointed to run design and manage the contract. The consultants are more familiar with the GCC and hence influence the client to select it. The client being familiar with only the GCC easily endorses recommendation.
Respondent #20	The respondent is influenced by the suitability of the form of construction contract for the type of projects that they implement.

Table 4.4 above shows the responses that all 20 respondents have given in answering the main research question. The main factor that influences most respondents is familiarity. However, another factor appears in most of the respondents' answers. While familiarity influences more respondents, there is also the influence of consultants. According to Latham (1994) forms of construction contracts are selected by the client, normally on the advice of the engineer, who is viewed as the expert in this area. Of the 20 respondents, 14 (70%) mentioned that they are mostly influenced by familiarity. However, 10 of the 14 respondents mentioned that while familiarity is a factor that influences them, the advice of the consultants/engineers who have been appointed to design and manage the project is of greater significance.

The respondents are familiar with the GCC. While that being so, their consultants/engineers are more familiar with the GCC. The consultants will usually recommend the GCC and the client being familiar with the GCC will easily endorse such a recommendation. In most cases, according to the respondents, the recommendation by the consultant will be accepted without question because both parties are familiar with the GCC and the consultant, according to Latham (1994) is seen as more knowledgeable than the client.

The remaining 6 respondents mentioned the following:

- 1 respondent (5%) mentioned that assessing project needs is what influences his/her organisation to select a particular form of construction contract,
- 1 respondent (5%) mentioned that the GCC is common in the industry and as such that influences their decision to use it,
- 1 (5%) respondent mentioned that their organisation's supply chain policy mandates the use of the GCC,
- 3 (15%) respondents mentioned that the suitability of the GCC to civil engineering projects influences their choice, and
- None of the respondents mentioned the balance of risk or ease of use as the main factor that influences their choice.

Figure 4.6 shows the factors that influence clients' selection of forms of construction contracts.

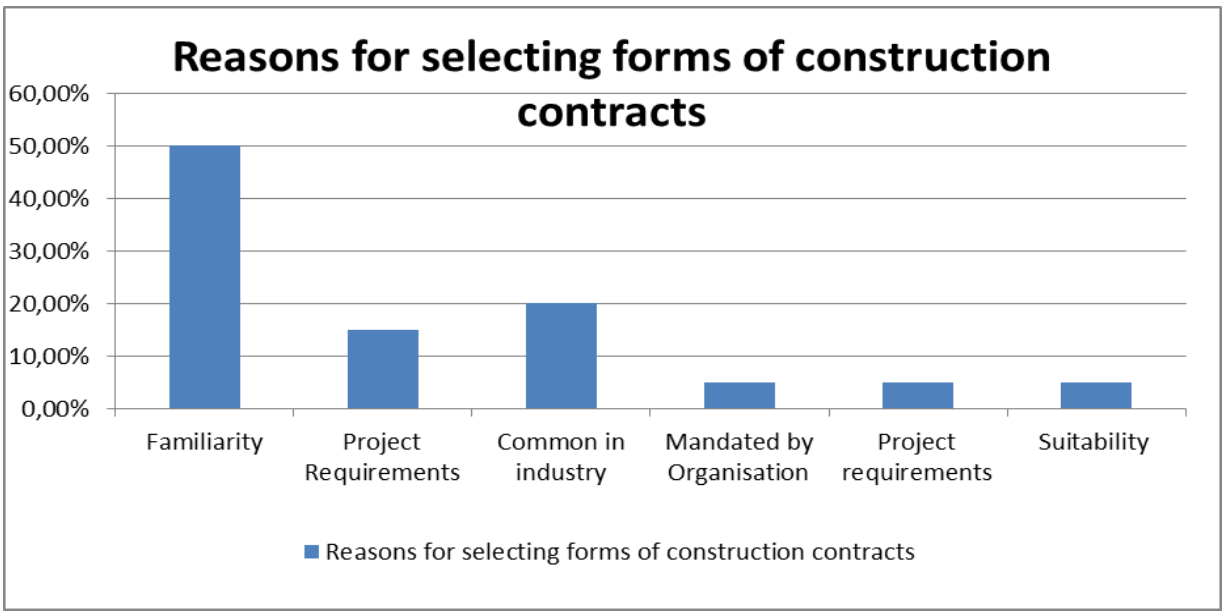


Figure 4.6: Factors influencing clients' selection of forms of construction contracts

In relation to the last part of Question 3 (How frequently do you select this form of construction contract and why?), the main reason for selecting a form of construction contract, according to 50% of the respondents is familiarity. Table 4.5 shows the summarised reasons why clients select the forms of contracts they use.

Table 4.5: Reasons for selecting forms of construction contracts

Respondent Number	Reason for selection
Respondent #1	Respondent is more familiar with the GCC and is more comfortable with it.

	Respondent has only used the GCC in their 13 years of experience in relation to selecting forms of construction contracts.
Respondent #2	In their organisation the GCC form of construction contract is specified in long-term fixed contracts which forces project managers to use it to administer their contracts. The use of this form of construction contract is mandated by supply chain.
Respondent #3	In their organisation, the GCC is more common. All fellow project managers use it and everyone knows how to use it.
Respondent #4	In their department they first asses the suitability of forms of construction contracts before selecting the most suitable one to use and this will vary from project to project.
Respondent #5	In their organisation they mostly use the GCC because their consultants advise them to do so. Most of their consultants are familiar with the GCC.
Respondent #6	They use the GCC because all of their works are civil engineering and according to them the most suitable form of construction contracts suitable for civil works is the GCC.
Respondent #7	They use the GCC because all of their project managers are very familiar with it. Respondent #7 further says that the GCC has been used in the past for many years. The NEC3 is also used regularly for the professional services providers.
Respondent #8	Respondent is only familiar with the GCC and has only worked with the GCC even for building projects.
Respondent #9	Respondent uses the GCC because it is more common in the industry. Most project managers and contractors know it and have used it more frequently on other projects.
Respondent #10	Respondent uses the GCC because of its suitability for both civil engineering and building projects. Furthermore the ease of use in administering contracts is another reason why Respondent #10 always selects the GCC.
Respondent #11	Respondent uses the GCC because of its suitability for civil engineering works and its ease of use during contract administration.
Respondent #12	Respondent uses the GCC for all of their projects. As a Director, respondent has noticed that all the project and contract managers under his department are more familiar to the GCC; furthermore, all their consultants are also familiar with the GCC. It wold cost more to switch to a different form of construction contract.
Respondent #13	Respondent uses the GCC because of its suitability for civil engineering works and its ease of use during contract administration.
Respondent #14	Respondent mentions that the GCC is more common in the industry and that is exactly why they use it.
Respondent #15	Respondent mentions that the GCC is more common in the industry and that is exactly why they use it.
Respondent #16	Respondent uses the GCC for all of their projects. The NEC3 is used for

	framework contracts. As a Deputy Manager, the project managers under respondent's sub-section are all familiar with the GCC.
Respondent #17	The respondent mostly uses the GCC in their department. The respondent is familiar with the GCC and that is why they select it. Their consultants use it and are also familiar with it.
Respondent #18	The respondent mostly uses the GCC in their department. The respondent is familiar with the GCC and that is why they select it. Their consultants use it and are also familiar with it.
Respondent #19	The respondent mostly uses the GCC in their department. The respondent is familiar with the GCC and that is why they select it. Their consultants use it and are also familiar with it.
Respondent #20	The respondent uses the GCC always. The suitability of the form of construction contract is the reason the respondent uses this form of construction contract.

Out of the 20 respondents, 10 respondents mentioned that the reason they select the GCC is because they are familiar with it. This familiarity also stretches to other members of staff in their respective departments/organisations. In simple terms, 50% of the respondents mention that they select the GCC form of construction contract because they are familiar with it.

Out of the 20 respondents, 4 mentioned that they select the GCC because it is more common in the construction industry. They further say that most of the contractors and the consulting engineers and project managers in most municipal construction projects are well versed with the GCC. This means that 20% of the respondents select forms of construction contracts because they are common in the industry and the assumption is that *"everyone knows and uses it"*. Of the 20 respondents, 3 (15%) respondents mention that they select the GCC because of its ease of use during contract administration.

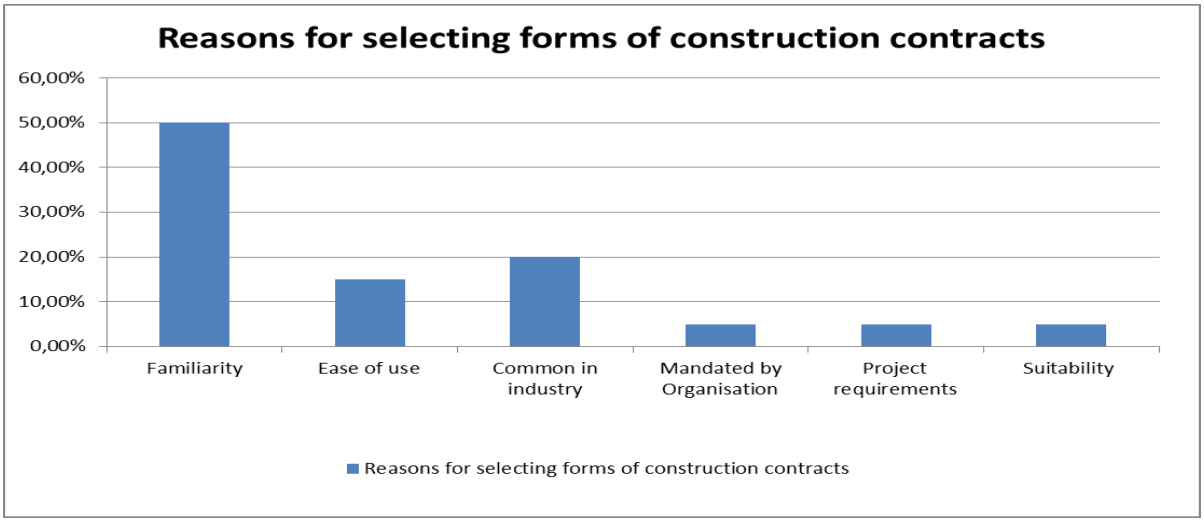


Figure 4.7: Aggregation of the reasons for selecting forms of contract

While 1 (5%) respondent mentions that they select the GCC because of its suitability for civil engineering projects. Furthermore 1 respondent (5%) mention that they use the GCC because it is mandated by their organisation's supply chain policies. As mentioned earlier, 1 (5%) respondent mentioned that their reason of selecting a form of construction contract is dependent on the project requirements. Figure 4.7 below shows the aggregation of the responses to the last part of Question 3 as to why clients select the forms contract in Table 4.4.

4.4.2 Forms of construction contracts in use in municipalities in Gauteng and their extend of use

The second specific objective of this study was to establish which forms of construction contracts are currently in use across the 3 metropolitan municipalities and determine the extent of use. Table 4.6 shows a summary of the forms of construction contracts that are currently in use.

Table 4.6: Forms of construction contracts commonly in use across the three metropolitan municipalities

Respondent Number	**Primary form of construction contract mostly used**	**Secondary form of construction contract commonly used**
Respondent #1	General Conditions of Contract (GCC) (2010/2015)	None
Respondent #2	General Conditions of Contract (GCC) (2010/2015)	None
Respondent #3	General Conditions of Contract (GCC) (2010/2015)	None
Respondent #4	International Federation of Consulting Engineers	New Engineering Contract

	(FIDIC)	NEC3,
Respondent #5	General Conditions of Contract (GCC) (2010/2015)	Joint Building Contracts Committee (JBCC)
Respondent #6	General Conditions of Contract (GCC) (2010/2015)	None
Respondent #7	General Conditions of Contract (GCC) (2010/2015)	CIDB, NEC3 (Framework contracts)
Respondent #8	General Conditions of Contract (GCC) (2010/2015)	None
Respondent #9	General Conditions of Contract (GCC) (2010/2015)	Joint Building Contracts Committee (JBCC)
Respondent #10	General Conditions of Contract (GCC) (2010/2015)	Joint Building Contracts Committee (JBCC)
Respondent #11	General Conditions of Contract (GCC) (2010/2015)	None
Respondent #12	General Conditions of Contract (GCC) (2010/2015)	New Engineering Contract (NEC3)
Respondent #13	General Conditions of Contract (GCC) (2010/2015)	None
Respondent #14	General Conditions of Contract (GCC) (2010/2015)	None
Respondent #15	General Conditions of Contract (GCC) (2010/2015)	None
Respondent #16	General Conditions of Contract (GCC) (2010/2015)	New Engineering Contract (NEC3)
Respondent #17	General Conditions of Contract (GCC) (2010/2015)	Joint Building Contracts Committee (JBCC)
Respondent #18	General Conditions of Contract (GCC) (2010/2015)	None
Respondent #19	General Conditions of Contract (GCC) (2010/2015)	None
Respondent #20	General Conditions of Contract (GCC) (2010/2015)	None

Table 4.6 clearly shows that the General Conditions of Contract (GCC) 2010 or the 2015 edition, which replaced the 2010 edition from 18 September 2016, is the most commonly used form of construction contract in the infrastructure departments (water and sanitation, roads and stormwater and housing) across the three metropolitan municipalities across Gauteng. The use of this from of contract, according the

responses from all 20 respondents across various departments in all three metropolitan municipalities ranges from roads and stormwater projects to water and sanitation projects and stretches to housing departments in these municipalities.

Of the 20 respondents, 19 (95%) respondents say the GCC is their most commonly used form of construction contract in their organisation. Only Respondent #4 differed with all the other 19 respondents. In his/her organisation, the FIDIC form of construction contract is used. Respondent #4 is in the water and sanitation field. According to Respondent #4, in their department they use the FIDIC form of construction contract for pump station and reservoir projects that include mechanical and electrical works as well as civil engineering works. They further use the NEC3 family of contracts for framework and professional services contracts.

Other respondents also mentioned that sometimes they make use the JBCC form of construction contract for building projects and this in particular involves Respondents #5 and #9 because they are in housing departments. However, there are other respondents who are in housing and building departments who make use of the GCC. Respondents #5, #9, #17, #18 and #20 are in the housing departments, they still use the GCC as their primary form of construction contract.

Respondent #9 has also used the JBCC for building projects but the primary form of construction contract in their department is the GCC. Figure 4.8 shows the distribution of use of the 4 most common forms of construction contracts. The figure shows that the JBCC and the NEC3 are not primarily used across the 3 metropolitan municipalities, but rather, the GCC is the most commonly used form of construction contract.

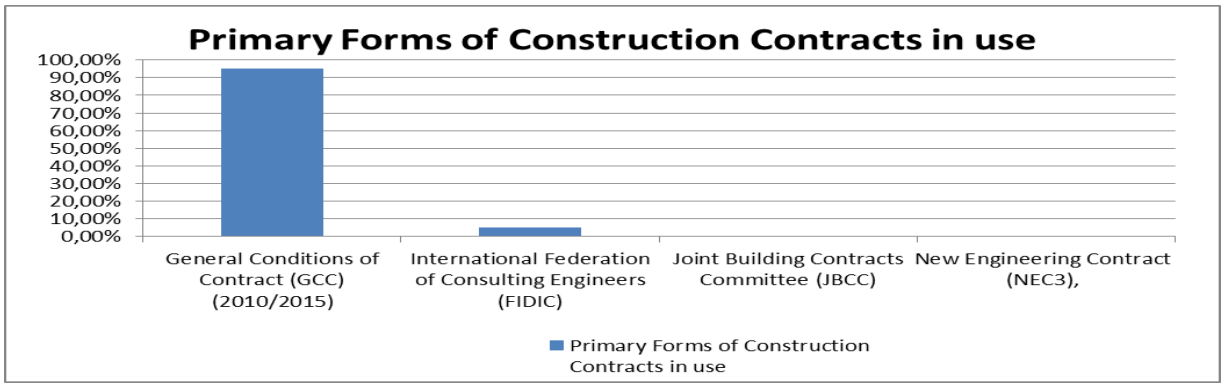


Figure 4.8: Forms of construction contracts primarily in use across the 3 metropolitan municipalities

Figure 4.9 shows the secondary forms of construction contracts that are sometimes used by the respondents' organisations. About 50% (10 respondents) of the respondents do not use any other form of construction contract while 20% of the respondents have used the JBCC before for other building projects but the GCC remains the primary form of construction contract. Furthermore, about 20% of the respondents make use of the NEC3 form of construction contracts as framework contracts but still use the GCC as their primary form of construction contracts for construction work packages. The FIDIC and the CIDB forms of construction contracts are secondarily used by about 5% of the respondents each.

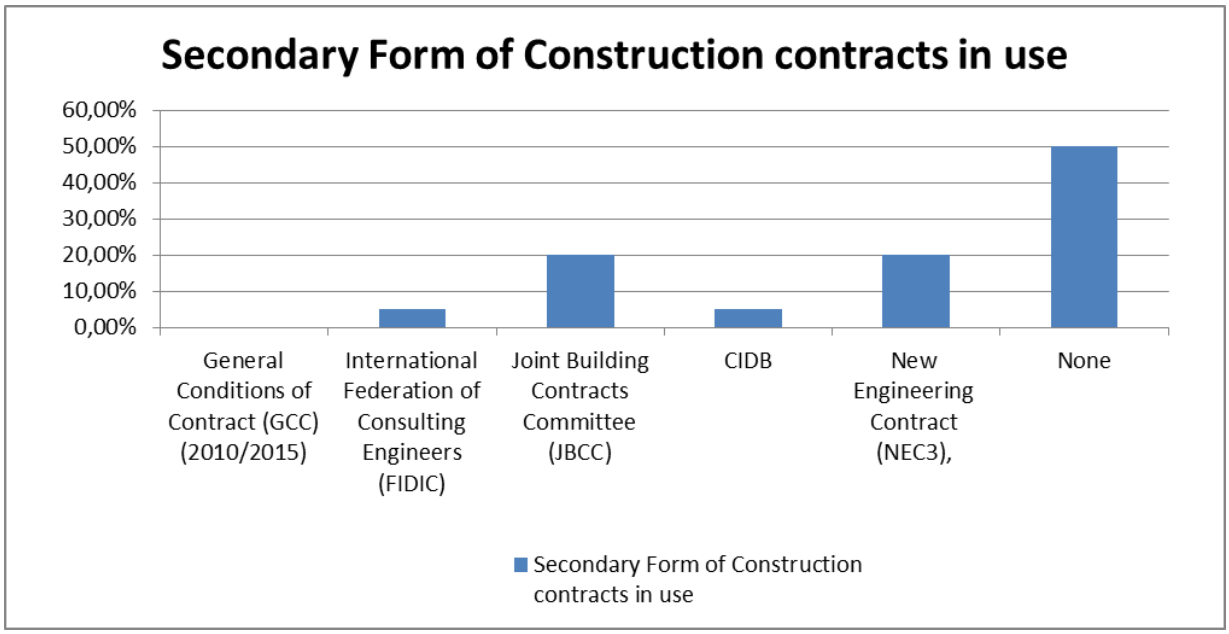


Figure 4.9: Forms of construction contracts secondarily in use across the 3 metropolitan municipalities

The aim of the first part of Question 3 was to establish the frequency of use of forms of construction contracts selected by all the respondents in Question 2. Table 4.7 shows the frequency of use and summarised reasons as to why they make such choices.

Table 4.7: Frequency of use standard form of construction contracts

Respondent Number	Frequency of use
Respondent #1	Always
Respondent #2	Always
Respondent #3	Always
Respondent #4	Sometimes, depending on type of project
Respondent #5	Mostly
Respondent #6	Always

Respondent #7	Mostly
Respondent #8	Always
Respondent #9	Mostly
Respondent #10	Mostly
Respondent #11	Always
Respondent #12	Mostly
Respondent #13	Always
Respondent #14	Always
Respondent #15	Always
Respondent #16	Mostly
Respondent #17	Mostly
Respondent #18	Always
Respondent #19	Always
Respondent #20	Always

From the responses shown in Table 4.7 it is clear that 60% of the respondents always use the same form of construction contract. According to Figure 4.8, the form of construction contract it is mostly used by the respondents is the GCC. This means that most of the respondents always use the GCC in their organisations. About 35% of the respondents (7 respondents) mentioned that they mostly, not always, use the same form of construction contract.

Of the 20 respondents only 1 respondent (Respondent #4), who represents 5% of the total responses, mentioned that the use of a particular form of construction contract depends on the type of project. According to Respondent #4, each and every project is assessed and based on the project type and characteristics a certain form of construction contract will be selected and it is usually one between the FIDIC, JBCC and NEC. Figure 4.10 shows the frequency of use of the forms of construction contracts selected in Question 2.

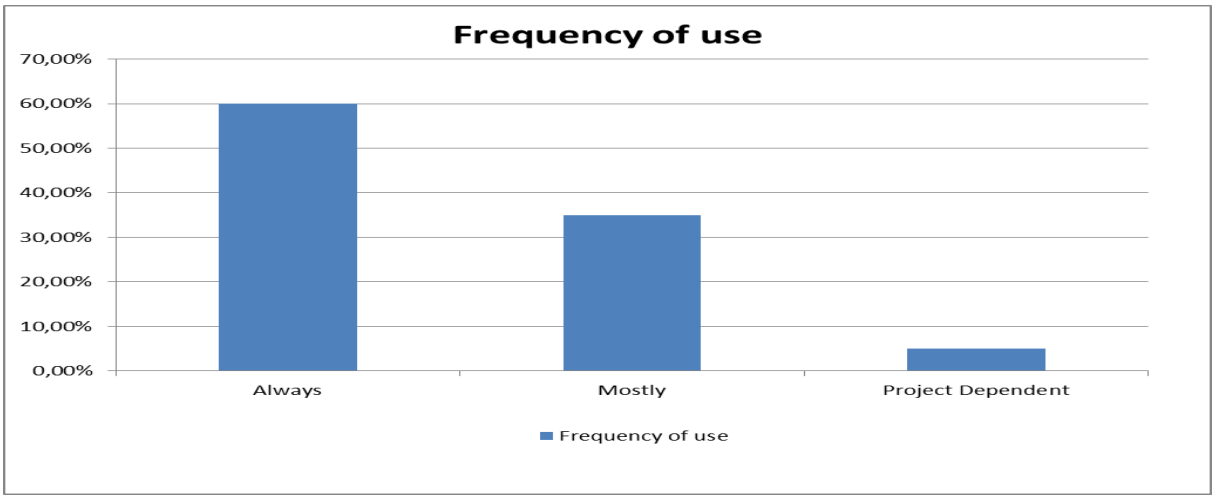


Figure 4.10: Frequency of use

As mentioned earlier, the aim of Question 4 was to establish the areas (types of project) that are covered by the forms of construction contracts that are mentioned in Question 2. Figure 4.11 shows they types of projects which the selected forms of construction contracts are used for across the three metropolitan municipalities.

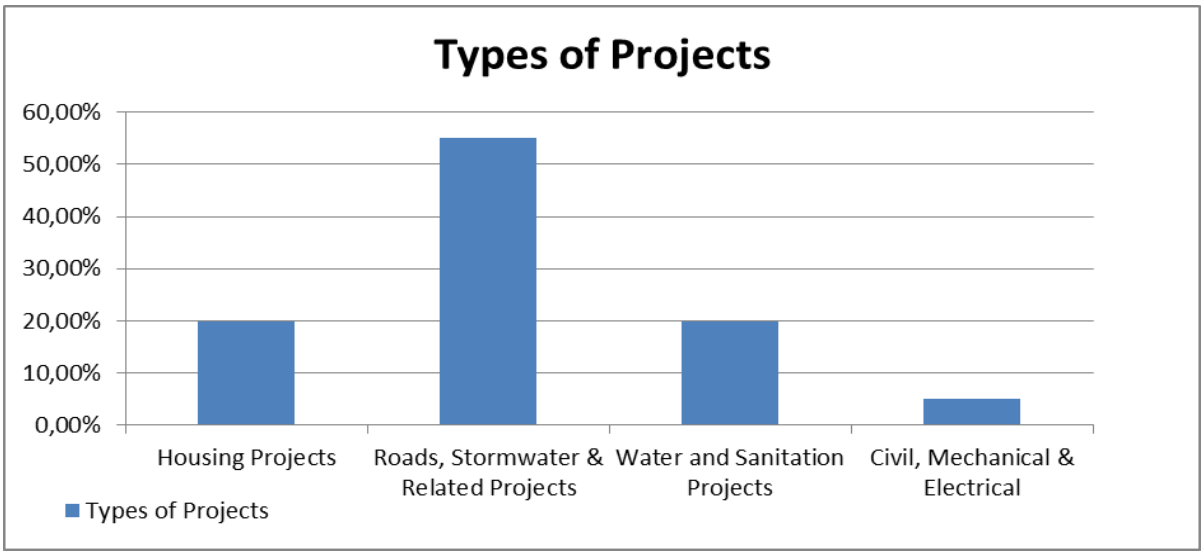


Figure 4.11: Types of projects which the selected forms of construction contracts are used

Figure 4.11 shows that most of the forms of construction contracts, according to the respondents are used for roads, stormwater and related works at 55% and it is followed by housing and water projects at 20% each and lastly 5% are used for electrical projects.

4.4.3 Forms of contracts used in original or amended form

The third specific objective was to ascertain the extent of which standard forms of construction contracts are used in their original state or modified. The aim of this question is to determine if the forms of contract selected in Question 2 are used in their original form when applied to the type of projects mentioned in Question 4. Table 4.8 below shows a summary of whether the forms of construction contracts that are used are in their original forms or amended. The analysis does not include the extent of amendments. For this study, the respondents were not asked to explain the level of amendments, but rather only the sections that they ament and this is shown in Question 9.

Table 4.8: Extent to which forms of construction contract are used in their original form

Respondent Number	**Extent of use (original or amended)**
Respondent #1	Amended.
Respondent #2	Amended.
Respondent #3	Amended.
Respondent #4	Amended.
Respondent #5	Original form, no amendment.
Respondent #6	Amended.
Respondent #7	Original form, no amendment.
Respondent #8	Amended.
Respondent #9	Original form, no amendment.
Respondent #10	Amended.
Respondent #11	Amended.
Respondent #12	Amended.
Respondent #13	Original form, no amendment.
Respondent #14	Amended.
Respondent #15	Original form, no amendment.
Respondent #16	Amended.
Respondent #17	Amended.
Respondent #18	Amended.
Respondent #19	Amended.
Respondent #20	Amended.

The responses showed in Table 4.8 and Figure 4.12 show the extent to which forms of construction contracts are used. According to the respondents, most of the selected forms of construction contracts are amended. Of the 20 respondents, 15, which represent 75% indicated that forms of construction contracts in their

organisations are amended. Of the 20 respondents, 5 (25%) indicated that in their organisation, the forms of construction contracts are used in their original form without any amendment. The question as to why these forms of construction contracts amended was not asked. From the result it is clear that the practice of using amended forms of contract is common in municipal construction projects.

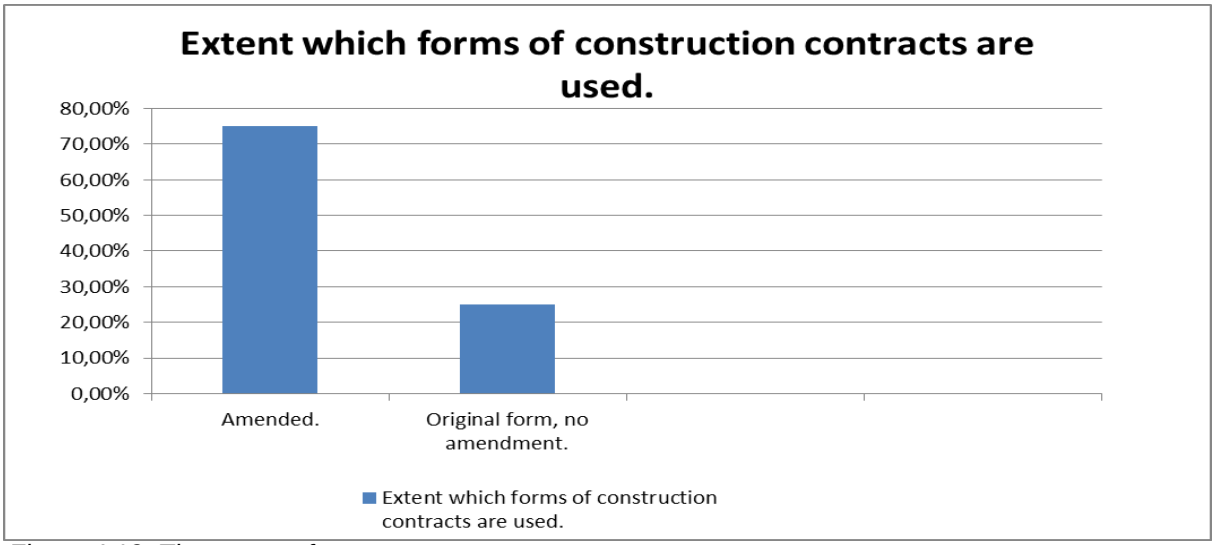


Figure 4.12: The extent of use

Table 4.9 shows a summary of the sections/areas of forms of construction contracts which are amended. Some respondents mentioned that they amend more than 1 section.

Table 4.9: Sections/clauses that are amended

Respondent Number	Sections amended
Respondent #1	Performance Guarantees/Performance Security.
Respondent #2	General risk assumption.
Respondent #3	Insurance, commencement of works and duties of the engineer.
Respondent #4	Penalties.
Respondent #5	Original form, no amendment.
Respondent #6	Preliminary matters.
Respondent #7	Original form, no amendment.
Respondent #8	General risk assumption.
Respondent #9	Varies from project to project.
Respondent #10	Original form, no amendment.
Respondent #11	Penalties, payment periods.

Respondent #12	Differs per project.
Respondent #13	Original form, no amendment.
Respondent #14	Penalties.
Respondent #15	Original form, no amendment.
Respondent #16	Extension of time, Performance Guarantees/Performance Security and insurances.
Respondent #17	Performance Security and insurances.
Respondent #18	Penalties.
Respondent #19	Penalties.
Respondent #20	Insurance, Performance Guarantees/Performance Security.

The results show that 5 of the 20 respondents use the forms of construction contracts in their original state. This represents 25% of the respondents. The other 15 respondents (75%) make amendments to their forms of construction contracts. The results further show that 25% of the respondents amend the penalty clause while 20% of the respondents amend the performance guaranty clause. A further 10% show that they amend the insurance clause. It is also important to note that some respondents change more than 1 section. The commencement of works, engineer's duties, preliminary matters and the extension of time clauses were each amended by 5% of respondents.

Figure 4.13 below shows a summary and ranking of the sections/clauses which are amended.

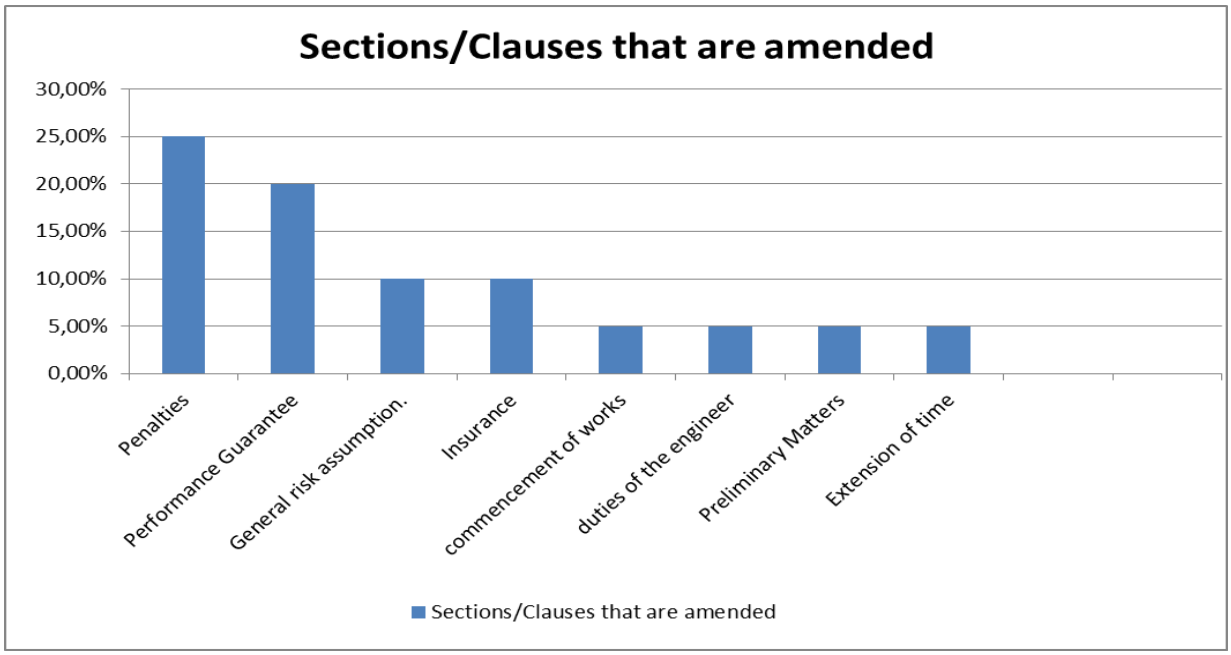


Figure 4.13: clauses that are amended

Of the 20 respondents, 75% (15) amend various clauses from their forms of construction contracts that they use for their capital projects in their organisations. The sections/clauses that are amended vary and are listed below from highest to lowest:

- Penalties,
- Performance Guarantee,
- General risk assumption,
- Insurance,
- commencement of works,
- duties of the engineer,
- Preliminary Matters, and
- Extension of time.

4.4.4 Drivers of contract decisions

The fourth specific objective of this study was to determine who the decision makers are. Sometimes, it may not be possible to establish as to who exactly makes the decision as to which form of construction contract to use because in some organisations it involves more than one individual. In some responses the respondents indicated that there are more than 1 party involved and as such responses have been captured. Table 4.10 below shows the summary of responses.

Table 4.10: Respondents' response to "who" makes the decision

Respondent Number	Who makes the decision
Respondent #1	Project Management Team, Consultant
Respondent #2	Supply Chain Management
Respondent #3	Project Management Team, Consultant
Respondent #4	Project Manager
Respondent #5	Project Management Team, Consultant and Executive Director
Respondent #6	Head of Contract Management, Senior/Chief Project Manager
Respondent #7	Project Management Team, Supply Chain Management
Respondent #8	Project Management Team, Consultant
Respondent #9	Senior/Chief Project Manager, Consultant
Respondent #10	Supply Chain Management
Respondent #11	Senior /Chief Project Manager, Consultant
Respondent #12	Senior Project Manager, Project Manager

Respondent #13	Programme Manager, Project Management Team and Supply Chain Management
Respondent #14	Project Management Team
Respondent #15	Project Management Team, Consultant
Respondent #16	Project Management Team, Consultant and Executive Director
Respondent #17	Project Management Team, Consultant
Respondent #18	Project Management Team, Consultant
Respondent #19	Project Management Team, Supply Chain Management
Respondent #20	Project Management Team, Supply Chain Management

The responses shown in Table 4.10 show that generally, there is more than one party involved in the selection. That being said, the project manager is always involved in this process. Despite the project manager's involvement, the influence of the consultant is clearly seen. Of the 20 respondents, 10, which represents 50% of the respondents have consultants in the team that decide. In line with responses of Question 6 of the interview, the influence of the consultants is clearly visible. However, the influence of senior management (executive director) is not as strong as compared to the consultants influence in the process. Only 2, which represents 10% of the respondents mention that in their organisation the executive level of management is involved in the process.

Out of the 20 respondents, 4, which represents 20% mentioned that their supply chain department was the leader in the decision making process. Despite the limitations of having multiple parties of more than 1 individual involved in the process, according to the respondents, in 50% of the cases, the consultants were primarily responsible for the decision. Figure 4.14 shows the decision makers. This also correlates with the factors that influence clients' choices. The consultants have a significant influence in the decision making process.

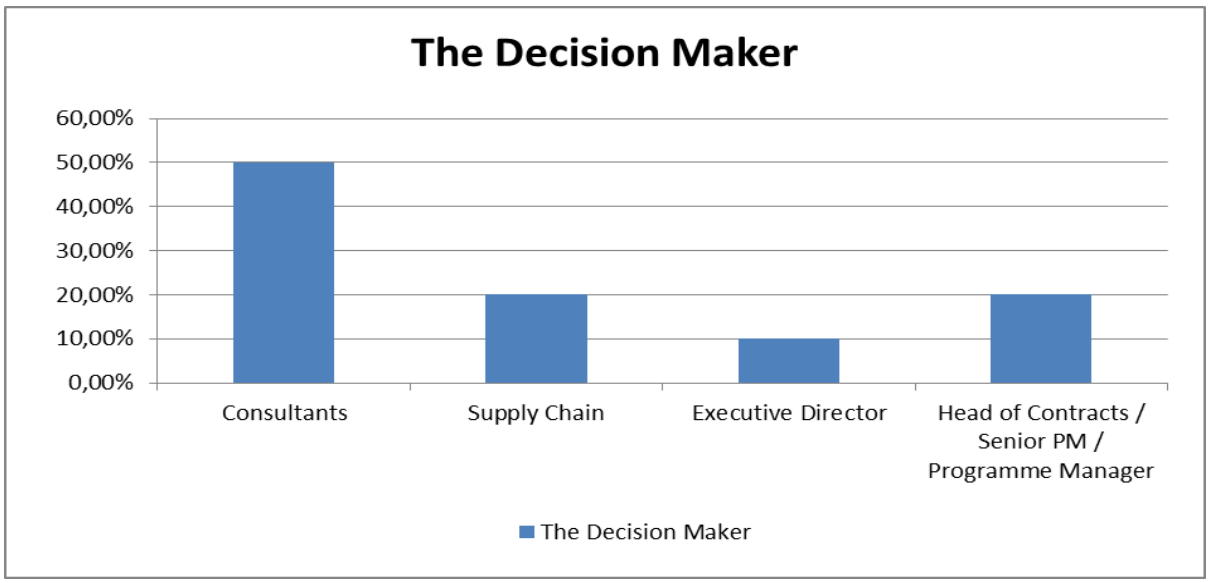


Figure 4.14: The primary decision makers

The aim of Question 7 was to establish if there are formal or structured processes used to select the forms of contract mentioned in Question 2 and also to determine how the decision is made. It is very important to understand if there are any processed followed when selecting forms of contract. Understanding the processes also helps to further clarify what influences clients to select the forms of construction contracts they use. Table 4.11 shows the summary of the processed followed by the 20 respondents.

Table 4.11: Processes followed when making decision on forms of construction contracts

Respondent Number	How decisions is made	Processes Followed
Respondent #1	The decision is made between project manager and consultant and finalised. The project manager is familiar with the GCC. Both parties agree to use the GCC.	No specific or structured process.
Respondent #2	Supply chain management senior officials decide which form of construction contract is suitable and fix this selection into long-term contracts which compels all project managers in departments which are involved in construction to use it.	No specific or structured process.
Respondent #3	Consultant makes the recommendation to client (represented by project manager) and client reviews, usually approves the form of construction contract. The client is already familiar with the GCC. Both parties agree to use the GCC.	No specific or structured process.
Respondent #4	The project manager makes an assessment of the	An analysis of the

	project requirements and makes a decision on the outcome. Consultants sometimes assist with project requirements	project requirements is conducted and the outcomes of the analysis yield the decision.
Respondent #5	The consultant makes a recommendation then senior management (executive director) accepts and implements the recommendation. Both consultant and client are familiar with the GCC; the decision is made to use it.	No specific or structured process.
Respondent #6	The senior project manager/chief project manager decides and informs the project team of the form of construction contract. The senior project manager/chief project manager is already familiar with the GCC so he/she decides to use it.	No specific or structured process.
Respondent #7	Supply chain management officials together with project team decide which form of construction contract to be used and incorporate such form of construction contract into the tender documentation. Project management team are familiar with the GCC and both parties agree to use the GCC.	No specific or structured process.
Respondent #8	Consultant makes the recommendation to client (represented by project manager) and client reviews, usually approves the form of construction contract. Because the client is already familiar with the GCC, he/she makes the decision to use it when consultant makes a recommendation.	No specific or structured process.
Respondent #9	The consultant and the senior project manager decide. Both client and consultant are familiar with the GCC. The consultant makes the recommendation to use the GCC and the chief project manager approves recommendation.	No specific or structured process.
Respondent #10	Supply chain management officials together with project team decide which form of construction contract to be used and incorporate such form of construction contract into the tender documentation.	An analysis of the project requirements is conducted and the outcomes of the analysis yield the decision.
Respondent #11	The consultant and the senior project manager decide. The consultant makes the recommendation and the chief project manager approves	No specific or structured process.

	recommendation.	
Respondent #12	The decision is made by the senior project manager and the project management team during the planning stage. The consultant has an influence. Because the senior project manager and the project management team are familiar with a particular form of construction contract which has been recommended by consultant, they make the decision to use it.	No specific or structured process.
Respondent #13	The Bid Initiation Committee lead by the Programme Manager and the project management team make the decision based on the project requirements. The programme manager, based on his experience and influence from consultants, will recommend the form of construction contract linking it with project requirements.	An analysis of the project requirements is conducted and the outcomes of the analysis yield the decision.
Respondent #14	The project management team (influenced by consultants) together with supply chain management will make the decision on which forms of construction contract to select after discussing the project requirements.	An analysis of the project requirements is conducted and the outcomes of the analysis yield the decision.
Respondent #15	Consultant makes the recommendation to client (represented by project manager) and client reviews, usually approves the form of construction contract.	No specific or structured process.
Respondent #16	The consultant makes a recommendation then senior management (executive director) accepts and implements the recommendation.	No specific or structured process.
Respondent #17	Consultant makes the recommendation to client (represented by project manager) and client reviews, usually approves the form of construction contract.	No specific or structured process.
Respondent #18	Consultant makes the recommendation to client (represented by project manager) and client reviews, usually approves the form of construction contract.	No specific or structured process.
Respondent #19	The project management team (influenced by consultants) together with supply chain management will make the decision on which forms of construction contract to select after discussing the project requirements.	An analysis of the project requirements is conducted and the outcomes of the analysis yield the decision.
Respondent #20	The project management team (influenced by consultants) together with supply chain management	An analysis of the project requirements is

	will make the decision on which forms of construction contract to select after discussing the project requirements.	conducted and the outcomes of the analysis yield the decision.

The responses shown in Table 4.1 show that usually, there are no specific or structured processes followed when selecting forms of construction contracts. Of the 20 respondents, 14 which represent 70% of the respondents mentioned that their organisations do not follow specific processes while the remaining 30% (6 respondents) mention that in their organisations the process of selecting forms of construction contracts is done through assessing the project requirements together with their supply chain departments. The outcomes of the assessment will usually lead them to a decision as to which form of construction contract to select. Respondent #4 in particular, as the project manager, makes the assessment without the influence of their supply chain management department or senior management.

The results also show that the 14 (70%) respondents who do not have structured or formal processes will usually make the decisions based on the two factors:

- Their familiarity with a particular form of construction contract (usually the GCC), and
- The recommendation, by their consultant of the form of construction contract which the client is familiar with (usually the GCC).

Having established a common ground on the form of construction contract that both parties are comfortable using, both parties agree to make use of it. After such an agreement, usually verbal, a decision is made. In such cases, there are no official procedures in place to guide clients how to select forms of construction contracts.

The results also show that of the 20 respondents, 6 respondents (30%) have indicated that the decision of which form of construction contracts to is made at the level of project manager and consultant without involving senior management and /or supply chain management. A further 6 respondents (30%) highlight that the decision involves senior management and the consultants but does not include supply chain management. There is also 1 respondent (5%) who mentioned that the project manager makes the decision without consulting senior management and supply

chain management. The remaining 7 respondents (35%) mentioned that when the decision is made, supply chain management and the project management team are involved.

Respondent #2 mentions that although supply chain management is involved in how the decision is made, there are no formal processes. The forms of construction contracts are mandated by supply chain management and are fixed. As such project managers are compelled to use them for all their construction projects without having to evaluate their suitability on every project. Figure 4.15 shows the summary of the respondents' responses to the processes followed when selecting a form of construction contracts.

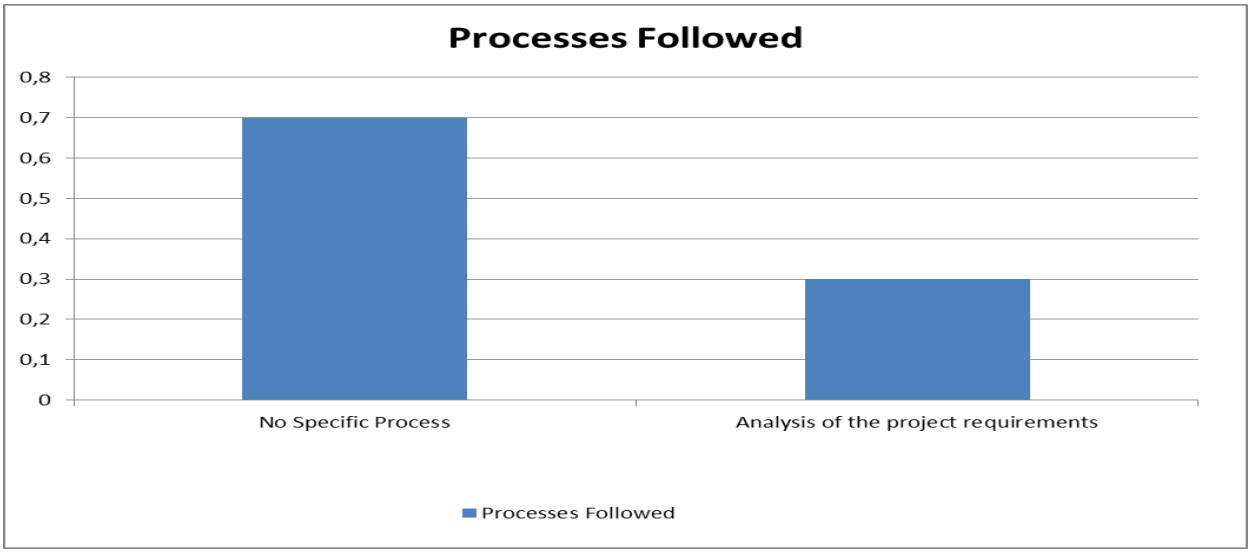


Figure 4.15: Processes followed

The discussion of the data analysis and the results is presented in Chapter 5.

Chapter 5: Discussion of Results

Within this chapter a collaboration of specific objectives within this study will be linked to the findings illustrated in the previous chapter, which showed the data analysis and the results (Chapter 4). To echo; the objectives of this research report are to:

- identify the factors that influence clients in the selection of forms of contracts for construction projects,
- establish which forms of contracts are currently in use,
- verify and validate the extent to *which* standard forms of construction contracts are being utilized in in their original state or modified, while lastly,
- determine who the drivers in contract decisions may be.

5.1 Factors influencing clients' choices in the selection of forms of contract for construction projects

The factors that are likely to influence clients' choices in selecting forms of construction contracts were highlighted by Sharkey et al., (2014) in their study for the Australian construction industry. Keeping that in mind, the interview questionnaire and responses within this research report are structured in line to the factors highlighted by Sharkey et al., (2014). The factors are as follow:

- Familiarity,
- Suitability of form of construction contract,
- Ease of use,
- Balance of risk,
- Mandate/recommendation by organisation and
- Common in industry.

The results have shown that familiarity (20%) and influence by consultants (50%) are the prominent factors that influence clients' choices in selecting forms of contracts. In Sharkey et al., (2014), there is no mention of influence by consultants. However, during the analysis of the respondents' responses, 50% of the respondents mentioned the influence by their consultants. In other words, their consultants have an influence in the decision of which form of construction contract to select. Based on this analysis, a new factor has emerged. While some of the respondents mentioned familiarity as what influences them, the influence of the consultant has a greater impact on clients' selection of forms of construction contracts. The

consultants are viewed as experts (Latham, 1994) and anything they say or suggest is usually received and accepted without question.

These respondents (50%) have mentioned that they themselves are familiar with the GCC; just as their consultants are also familiar with the GCC. During the planning stage, consultants recommend the use of the GCC because they (consultants) are also familiar with the GCC. In hindsight both parties (consultants and clients) are accustomed to the same form of construction contract, being the GCC. The recommendation by the consultant to make use of the GCC is readily accepted by the client without question. The reasons why consultants use or prefer the use of the GCC is currently not in line with the study objectives of this research, such a question will favour a more complex research project at a higher level (PhD).

From the above, it is clear that while most clients and their consultants are familiar with the GCC, it does not mean that they are well informed about the form of construction contract that they are familiar with. In all the responses of the clients (50%) who are influenced by consultants, there is not one client who mentions that they were informed about the form of construction contract they were familiar with. However, these clients are familiar with the GCC mainly because they have made use of it before or their organisations have been using it for an extensive period of time in most if not all of their projects.

It is only 15% of the clients who mentioned suitability of the form of construction contract as a reason and a factor that influences their decision to select the particular form of construction contract they use. Of all the respondents, not a single one mentioned *"balance of risk"* as a factor. This means that clients do not necessarily asses or evaluate balance of risks during the planning and design stages. The following factors scored very low in the list of factors influencing clients'' selection of forms of construction contracts:

- Ease of use (5%),
- Common in industry (5%), and
- Mandated by supply chain (5%).

The two factors that are have been brought out by the respondents have some disadvantages.

Familiarity of only one form of construction contract results in the consistent use of only one form of construction contract for all project types. Some of the clients who mentioned familiarity as a factor and a reason mention that they use one form of construction contract for projects of varying complexities (low to high). Some other clients who have changed employers have continued to use the same form of construction contract even when they moved to a different organisation or department. This according to Sharkey et al. (2014) results in *"stubbornness"* and reluctance to try other forms of construction contracts. The influenced by consultants, in this study, is an indication that some clients seem to heavily rely on consultants when making serious contract decisions. According to some researchers, such reliance on consultants for contract decisions may lead unforeseeable negative consequences (Bower, 2003; Ogunsanmi, 2013; Eriksson & Westerberg 2012; Oyedele, 2012).

5.2 Forms of contracts currently in use in the three metropolitan municipalities

The results of the study have shown that that General Conditions of Contract (GCC 2010/2015) form of construction contract is widely used in the metropolitan municipal sector. The use of this form of construction contract stretches across different project types and sectors. The three sectors which were included in this study across the three metropolitan municipalities in the Gauteng Province of the Republic of South Africa are:

- Water and sanitation,
- Roads and stormwater, and
- Housing & housing services and utilities.

These three sectors are primarily the areas of construction which metropolitan municipalities undertake in their efforts to deliver services to communities under their jurisdiction. According to the CIDB (2013, 2014 & 2015), the FIDIC was the most popular for metropolitan councils. Figures 5.1, 5.2 and 5.3 show the findings presented by the CIDB.

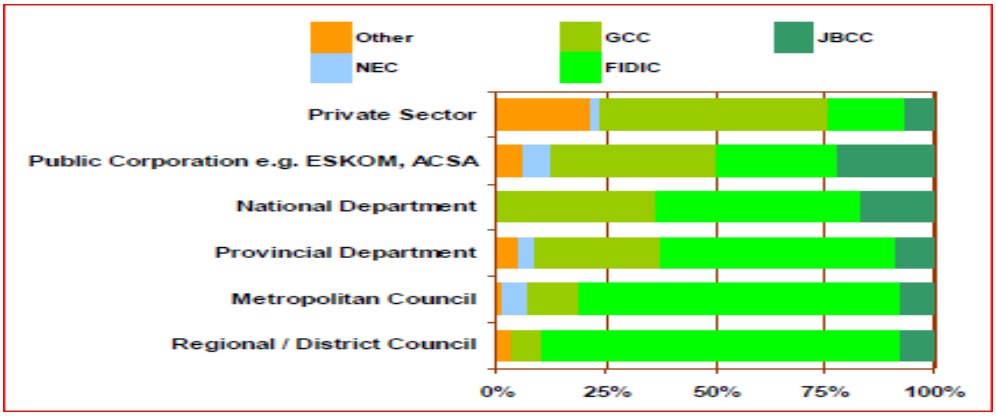


Figure 5.1: Procurement Indicators (CIDB, 2013)

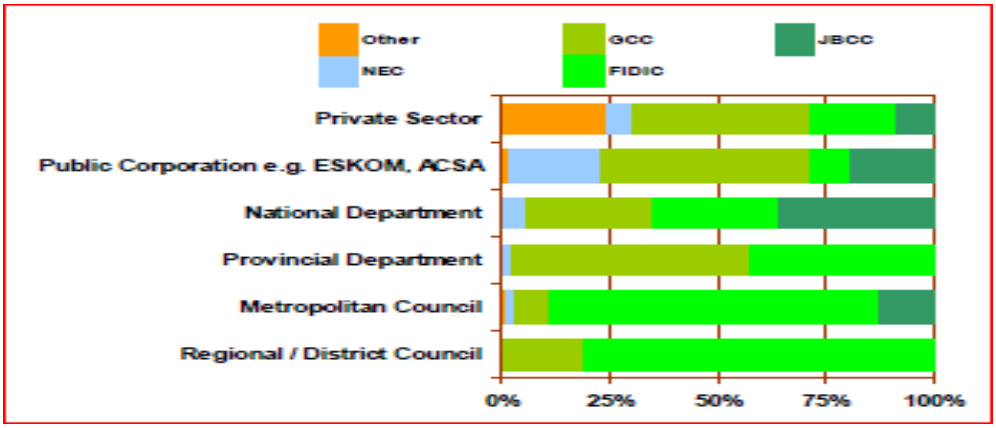


Figure 5.2: Procurement Indicators (CIDB, 2014).

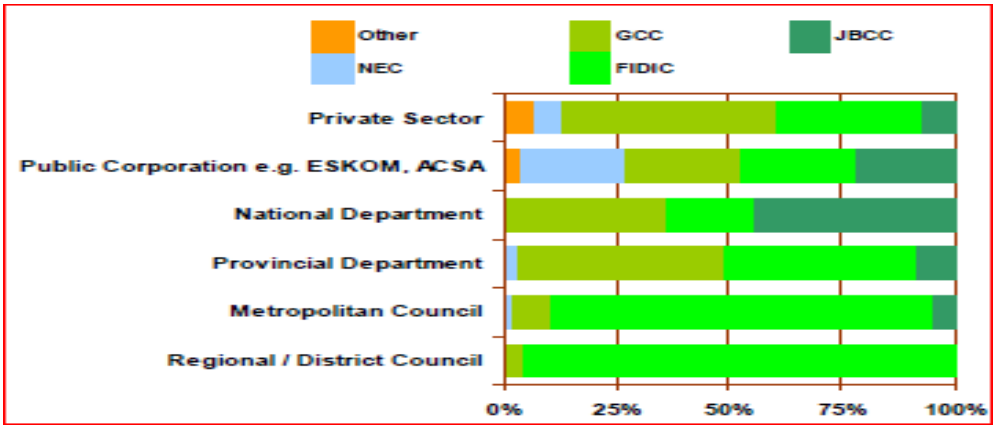


Figure 5.3: Procurement Indicators (CIDB, 2015)

The CIDB's summary findings showed that in the last 3 years, the FIDIC form of construction contract (French acronym for International Federation of Consulting Engineers) was the most popular for metropolitan councils in South African in the last 3 years (2013, 2014 and 2015). South Africa has 8 metropolitan councils. For this study, 3 metropolitan councils/municipalities were sampled. The results showed that the General Conditions of Contract (GCC 2010/2015) form of construction contract is

the most popular form of construction contract in use in the 3 metropolitan councils that were sampled. Furthermore, when analysing the frequency of use of the GCC, 60% the respondents showed that they always use the GCC while 35% said that they use the GCC mostly. It is only 5% of the respondent who mentioned that form of construction contract that they select depends on the project itself.

The CIDB's results indicate a use of the FIDIC of over 75% as shown in Figures 5.1, 5.2 and 5.3. The results for this study show a slightly different picture for the 3 metropolitan municipalities that were sampled. However, the results of this study are not enough to conclude that the CIDB's statistics do not reflect the actual use of the forms of construction contracts. Further quantitative studies need to be conducted.

5.3 State of use of forms of construction contracts

The results of this study show that that the majority of the clients use the GCC form of construction contract in an amended form. The study shows that most of the clients amend different clauses of the GCC form of construction contract. The practice of amending applies to all project types across the three metropolitan municipalities. The results indicate that the most amended clauses in order of most amended clause to the least are shown below:

- Penalties,
- Performance Guarantee,
- General risk assumption,
- Insurance,
- commencement of works,
- duties of the engineer,
- Preliminary Matters, and
- Extension of time.

The question as to why standard forms of construction contracts are amended was not part of the study. However, Sharkey et al. (2014) suggested the general reasons why some clients amend standard forms of construction contracts. The reasons are as follow:

- Risk transfer: some clients are conservative, more especially when they previously experienced unfavourable conditions on a previous project and desire certainty of transferring risk;
- Statutory requirements: Some clients amend forms of construction contracts because of statutory requirements, for example, occupational health and safety requirements and the issuing of performance guarantees;
- Ease of administration: Some clients amend forms of construction contracts to make allowance for more easier and efficient contract administration processes;
- Poorly drafted standard forms: Other clients are of the opinion that the currently available forms of construction contracts are poorly drafted and hence need amendments.

It is reasonable to conclude that some of the reasons given by Sharkey et al. (2014) are true for the respondents that participated in this study. By looking into the clauses that the respondents amend in standard forms of construction contracts in their organisations, there are some similarities between the general reasons mentioned above and the clauses that are mentioned in this study. More research has to be conducted to establish and determine the extent in which amendments are done and more specific reasons.

5.4 The drivers of contract selection decisions

The results of this study have shown that consultants are key drivers of contract decisions. In the public sector it is common to make use of professional services rendered by consultants. The organisations represented by the 20 respondents are also a part of the public sector, local government in particular. The practice of making use of consultants also applies in local government. The following list shows the key people/parties who are basically the decision makers, although there are other people involved in the process:

- Consultant (50%);
- Supply Chain (20%);
- Head of contracts / Senior Project Manager / Programme Manager (20%), and
- Executive Director (10%).

All of the clients that who participated in this study have a solid background and reasonable experience in the project management environment. As mentioned earlier, the experience of the respondents varies from tendering, procurement, project planning and implementation, site supervision, costing, estimating, civil engineering design and financial management. The combined experience of all the respondents covers roads and stormwater, water and sanitation and building projects. The results show that the respondents have on average, 14.5 years of work experience in project management. All of the respondents have a built environment qualification. Although all the clients are reasonably experienced, about half of them still rely on consultants to make decisions on which forms of construction contracts to use.

The answer as to why most clients still rely on consultants was not part of the study. According to some researchers, there more qualified and experienced clients are, the more they participate actively in contract decisions. In this study, the clients appear to be well experienced and well suited for the positions in their respective organisations, however, some of the clients, although involved in the process of selecting forms of construction contracts, are not as fully involved in the process as their experience and background would allow them to be. It is true that consultants play an important role in a project; however, clients still heavily rely on consultants for making decisions in projects.

Some researchers believe that clients' background and experience are very important to the success of public sector projects. Furthermore, researchers also say that the level of experience and background of clients greatly influence the selection of a form of construction contract (Hillebrandt, 1984; Xia & Chan, 2010). That being said, the results of the study shows that some of the respondents, although are skilled and experienced, still do not exercise their competencies and experience but would rather wait for the consultant to recommend a form of construction contract and they (respondent) endorse it.

It is not all clients who heavily rely on consultants. The results also show that some clients are still the drivers of decisions. The results have showed that of the 20 respondents, about 30% of them have their senior project managers and executive

directors make the decisions. These senior officials in the respondents' organisations usually have reasonable experience and hold built environment qualifications. These senior officials make the decision after having assessed the project needs, goals and objectives.

This practice is in agreement with what some researchers have said about skills, experience and competencies of clients in public sector projects. Some researchers highlighted that experienced clients are aware of their work culture and want to be more involved in all construction processes. Their experience, background and attitude have an impact on their level of participation in selections of forms of contracts (Dhanushkodi, 2012). This is true for the 30% clients who do not rely on consultants for selecting forms of construction contracts. Of the 20 respondents, 20% mentioned that their supply chain were the key drivers of decisions relating to which form of construction contract to select. This is in line with what other researchers have suggested.

Chapter 6: Conclusions & Recommendation

6.1 Conclusions

6.1.1 Background of research

This study focused on determining the factors that influence clients' selection of forms of construction contracts. The study was conducted in the 3 metropolitan municipalities in Gauteng (City of Tshwane, City of Johannesburg and Ekurhuleni Metropolitan Municipality).

The specific objectives of the study were as follow:

- To identify the factors that influence clients' choices in the selection of forms of contract for construction projects,
- To establish which forms of construction contracts are currently in use and determine their extent of use,
- To ascertain the extent to which standard forms of contract are used in their original state or modified, and
- To determine who the drivers in contract decisions are.

The respondents were selected though purposive judgement and covered the following positions in the 3 metropolitan municipalities:

- Construction Manager
- Project Manager
- Senior Project Manager/Chief Construction Manager
- Deputy Director
- Director
- Manager (Project Management Unit)
- Programme Manager
- Investment Manager (Project Management Unit).

The main research question was answered the 4 specific objectives of the study were also achieved. The main research questions were as follow:

- What are the factors that influence clients' selection of forms of construction contracts?
- Who are the key drivers in contract selection decisions?

The study adopted a qualitative approach. The qualitative survey was drafted and designed in line with relevant literature. The study showed that clients in the three metropolitan municipalities are experienced, the average years of experience is 14.25 years. Their background show that the clients are reasonably experienced and are backed up by a built environment qualification. The respondents' information showed that these clients experience and background ranged from project management, tendering, costing, financial, financial management and procurement.

6.1.2 Factors influencing clients choice of forms of construction contracts

The factors that were raised by the respondents' factors were similar to those brought out by the literature. Adding to those, a new factor appeared, i.e., the influence by the consultant. The factors that were determined in this study, that influence clients' selection of forms of construction contracts in order of importance are as follow:

- Influence by consultants
- Familiarity
- Suitability
- Ease of use
- Common in Industry
- Mandated by organisation

6.1.3 Forms of construction contracts in use

Of all the respondents, not one mentioned balance of risk, although it is one of the theorized factors listed in the literature. The study also showed that the General Conditions of Contract (GCC 2010/2015) were the most common form of construction contract in use in the 3 metropolitan municipalities where the study was conducted. The study also showed that 60% of the respondents always use the GCC while 35% mostly use it. The results further showed that the respondents use the General Conditions of Contract for the following projects:

- Roads & Stormwater projects,
- Water & Sanitation projects,
- Housing infrastructure projects, and
- Building projects

6.1.4 Extent of use (original or amended)

The study also showed that the General Conditions of Contract were usually used in an amended form. The clause that was mostly amended is the penalty clause.

6.1.5 Drivers of contract selection decisions

The study also showed that the consultants were the leading driver when it comes to making the decisions and that some clients rely heavily on consultants for decisions in projects. In 50% of the cases, the consultant was the one who makes the decision for the client despite the client being capable, experienced and qualified to make decisions on which forms of construction contract to select. Other clients (30%) make the decisions themselves and applying their experience, background and qualifications. In some cases (20%), the supply chain department makes the decision.

6.1.6 Conclusions from the study

It can be concluded, from this study and the results that the main factors that influence clients to select forms of construction contracts without any analysis or assessment are the influence of the consultant and familiarity. Public sector clients are experienced and have enough background and are qualified to make decisions as to which forms of construction contract to select, however they are still dependant on consultants. Most clients heavily rely on consultants to make contract selection decisions in the municipal or local government sector, as such; consultants are usually the drivers behind contract selection decisions. The factors that influence clients to select the forms of construction contracts they mainly use in their organisations are similar to those of other countries.

6.2 Recommendations

The recommendations that come out of this study are as follow:

- Clients need to be more involved in all construction processes, especially during the procurement stages;
- Clients need to rely less on consultants when it comes to assessing, evaluating and selecting forms of construction contracts;
- The construction industry has a wide range of forms of construction contracts and clients need to try other forms of construction contracts;

- Familiarity, though it may be a good factor, it may also be a negative factor as it may deny clients the opportunity to try other forms of construction contracts, hence clients need to be careful of relying on their familiarity with a particular form of construction contract always;

6.3 Contributions to the body of knowledge

This study has contributed the following to the body of knowledge:

- This study has helped to bring about an understanding on factors that influence clients' selection of forms of construction contracts in the municipal sector;
- The study has helped to identify the leading factors that influence clients when making selections of forms of construction contracts in their organisations;
- This study helped with providing a better understanding of the reasons why clients select the forms of construction contracts they use for their projects.

6.4 Suggestion of further studies

The following studies should be carried out in the future:

- Why are public sector clients heavily reliant on consultants?
- What are the factors that influence consultants' choices in selecting forms of construction contracts?

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Appendices

- **Appendix A: Information Document**
- **Appendix B: Research Ethics Consent Form (Clients)**
- **Appendix C: Qualitative Research Questions (Clients)**
- **Appendix D: Ethics Clearance Approval**

Appendix A: Information Document

INFORMATION DOCUMENT

Study title:

Factors Influencing Clients' Choice of Standard Form Construction Contracts: A case study of three metropolitan municipalities in Gauteng Province of South Africa

Introduction

I, Hosana H Ndlovu, under the supervision of Prof S Laryea, am currently doing research on factors that influence clients' selection of forms of construction contracts in the public sector. This study is conducted so as to gain more understanding to this matter. In this study we want to understand what exactly influences clients when making certain choices when selecting forms of construction contracts. It is common for clients to make selections without understanding and as to why such forms of construction contracts are selected. As such, sometimes there are negative consequences for not selecting an appropriate form of construction contract.

Invitation to participate

I am inviting you to take part in a research study (or asking for your permission to include you in this research study).

What is involved in the study?

This study is a descriptive and narrative research which aims to understand certain behaviors, values, experiences and opinions of clients and industry professionals. The study will be completed by 30 March 2017. The participants are expected to make available only 30 minutes of their time for a qualitative research questionnaire. The study will use Qualitative methods to answer the main research question. There is no prior preparation required and there are no tests.

Risks

There are absolutely no risks involved. The participants will not be embarrassed or publicly humiliated. The results will be published in a dissertation research report and will be made available to the participants should they wish to access them. The

results will be stored in a secured place and not made available to the general public. Participants can anonymously participate if they wish to do so. This is purely an academic exercise and the researcher will not benefit financially from the research.

Benefits

The study will be of benefit to the construction industry as it will enlighten clients and consultants of the need to carefully analyse forms of construction contracts against the type of projects that they are undertaking.

Alternative procedures or courses

None

The participant will be given pertinent information on the study while involved in the project and after the results are available.

Participation is voluntary

Participation is voluntary. Participants can request to pull out or refuse to participate in this study. There are no losses or expenses that will be incurred by the participant. There are no penalties for pulling out of the study.

Reimbursements

There will be no reimbursement of any costs. Participants will not incur any cost.

Confidentiality:

Efforts will be made to keep personal information confidential. Absolute confidentiality cannot be guaranteed. Personal information may be disclosed if required by law. The participants and/or their organizations may inspect and/or copy the research records for quality assurance and data analysis including groups such as the Research Ethics Committee (where appropriate).

Contact details of researcher

For further information / reporting of study related adverse events please contact the researcher at the following email and cell number:

Email: 1558237@students.wits.ac.za

Cell: +27 72 140 4985

Contact details of REC administrator

In order to reporting of complaints and problems about the manner in which the study is conducted, please contact: **Dr. Kola Ijasan**

Email: kola.ijasan@wits.ac.za

Tel: 011 717-7681

Appendix B: Research Ethics Consent Form (Clients)

Research Ethics Consent Form (Clients)

Researcher	**Mr Hosana H Ndlovu**
Study Topic	**Factors Influencing Clients' Choice of Standard Form Construction Contracts: A case study of three metropolitan municipalities in Gauteng Province of South Africa**
Institution	**University of the Witwatersrand**
Participant Name (Participant may remain anonymous)	
Occupation of participant	
Organisation	

Please Initial Box

1. I confirm that I have read and fully understand the data sheet for this study and have been given the opportunity to ask any question. ☐

2. I fully understand that I voluntarily participate and that I can freely to withdraw at any time, without giving reasons. ☐

3. I consent to take participate in the above study. ☐

4. I agree to the interview or to participate in the study ☐

5. I agree to the use of anonymised quotes in publications ☐

Important Information for participants

a. Participants may withdraw from participation at any time without giving reasons
b. Should participants wish to withdraw, there are no consequences. Furthermore, participants will not suffer any loss of harm. Participants will not be prejudiced in any way.
c. The participants will be informed of the results of the findings of the study.
d. The information will be kept in a safe computer with a password.
e. The information will not be made public.
f. The interviews are interactive; there is no physical contact or collecting of any physical specimens (blood samples, saliva, hair, etc.)
g. The following ethical practices shall apply:
    - The privacy of possible and actual participants will be ensured,
    - The participation will be on a voluntary basis,
    - Consent will be obtained,
    - Participants will not be deceived,
    - Confidentiality will be maintained throughout the process,
    - The data will be analysed in a way which will not result in embarrassment, harm or discomfort to the respondents, and
    - The behaviour and objectivity of the researcher must be of a good and high moral standard.

Signed: _____ (Participant)

Name: _____ (Participant)

(Participant may remain anonymous if they wish to)

Date: ____/____/_____

Researcher Signature: _____

(Date):____/_____/_____

Appendix C: Qualitative Research Open-Ended Questions (Clients)

Qualitative Research Open-Ended Questions (Clients)

Researcher	**Mr Hosana H Ndlovu**
Study Topic	**Factors Influencing Clients' Choice of Standard Form Construction Contracts: A case study of three metropolitan municipalities in Gauteng Province of South Africa.**
Institution	**University of the Witwatersrand**
Participant Name (Participant may remain anonymous)	
Occupation of participant	
Organisation	

Introduction

Briefly describe your professional experience, background and your position.

Questions 1

How many years of professional experience do you have in relation to contracts, infrastructure projects and selection of forms of construction contracts ?

Questions 2

Which standard form of construction contract is mostly used in your organisation?

Questions 3

How frequently do you select this particular form of construction contract and why?

Questions 4

What types of projects do you use these forms of construction contracts for?

Questions 5

What factors influence you to select particular forms of construction contracts?

Questions 6

Who makes the decision as to which of forms of construction contract to use?

Questions 7

How the decision is made, and by what processes is the particular form of construction contract selected?

Questions 8

To what extent are the forms of construction contracts used in their original form, or amended?

Questions 9

Which areas of the standard forms of construction contracts do you amend?

Appendix D: Ethics Clearance Approval

SCHOOL OF CONSTRUCTION ECONOMICS AND MANAGEMENT RESEARCH ETHICS COMMITTEE

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER** CEM/16/08/NH/MSC
PROJECT TITLE	Factors Influencing Clients' Choice of Standard Form Construction Contracts: A case study of three metropolitan municipalities in Gauteng Province of South Africa
INVESTIGATOR	Ndlovu Hosana **1558237**
SCHOOL/DEPARTMENT	**SCHOOL OF CONSTRUCTION ECONOMICS AND MANAGEMENT**
DATE CONSIDERED	1/8/2016
DECISION OF THE COMMITTEE	Approved conditionally with respect to the declaration and forwarded minor corrections
EXPIRY DATE	8th August 2017
DATE 09 August 2016	**CHAIRPERSON** _____ Dr. Kola Ijasan

cc: Supervisor : **Prof S Laryea**

DECLARATION OF INVESTIGATOR (S)

To be completed in duplicate and **ONE COPY** returned to the Secretary Mrs. M. Sithole at the CEM reception desk.

I fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to completion of a yearly progress report.**

_____ _____/_____/_____

Signature **Date**