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AN INVESTIGATION INTO THE MANAGEMENT OF SUCCESSFUL EMERGING GENERAL BUILDING AND CIVIL ENGINEERING CONTRACTORS IN GAUTENG

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699591

A research report submitted to the
Faculty of Engineering and the Built Environment,
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Johannesburg,
in partial fulfilment of
the requirements for the
degree of Master of Science in Engineering

APRIL 2017

DECLARATION

I declare that this research report is my own unaided work. It is being submitted in partial fulfilment of the requirements for the Degree of Master of Science to the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination to any other University.

……

NEIL GOVENDER

12th day of April 2017

ABSTRACT

The construction industry in South Africa has an array of challenges. These challenges make it difficult for emerging contractors to establish and maintain successful companies. The purpose of this report is to establish why there are so few successful emerging contractors in the construction industry. In this study, the success of an emerging contracting company was judged by the survival of that company for a minimum period of five years and an improvement in the company's CIDB grade by at least three levels during its existence. Structured interviews were conducted with a sample of 10 successful emerging contractors in Gauteng. The study found that technical capacity is one of the components of successful emerging contracting companies. It also found that technical capacity, inconsistent work opportunities and financial constraints are challenges that affect contractors when trying to increase their CIDB grade. The successful emerging contractors in the study utilised various strategies to overcome challenges in the industry, however, these strategies were flexible for changing circumstances and new opportunities.

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LIST OF ACRONYMS

AsgiSA	Accelerated and Shared Growth Initiative for South Africa
CDP	Contractor Development Programme
CE	Civil Engineering
CIDB	Construction Industry Development Board
CSIR	Council for Scientific and Industrial Research
ECSA	Engineering Council of South Africa
GB	General Building
GDP	Gross Domestic Product
ICA	Infrastructure Consortium of Africa
ILO	International Labour Office
JSE	Johannesburg Stock Exchange
JV	Joint Venture
NCDP	National Contractor Development Programme
NDP	National Development Plan
NEF	National Empowerment Fund
NGP	New Growth Path
NQF	National Qualifications Framework
PDI	Previously Disadvantaged Individuals
RoC	Register of Contractors
SACPCMP	South African Council for Project and Construction Management Professionals
SAMAF	South African Micro Finance Apex Fund
SIP	Strategic Integrated Projects
SME	Small and Medium-sized Enterprise
SMME	Small, Medium and Micro-sized Enterprise
WBHO	Wilson Bayly Holmes-Ovcon

CHAPTER 1: INTRODUCTION

1.1 Background

Economic growth in South Africa is closely linked to infrastructure development particularly economic infrastructure (Perkins, Fedderke and Luiz, 2005). Economic infrastructure includes "infrastructure that promotes economic activity such as roads, highways, railroads, airports, sea ports, electricity, telecommunications, water supply and sanitation" (Fourie, 2006:530-556).

The South African government has recognised the significance of infrastructure development and its impact on economic growth. Therefore, it has outlined the importance of infrastructure development programmes in key policy documents such as the New Growth Path (NGP) and the National Development Plan (NDP). The NGP, which was adopted in 2011 as the framework for economic policy in South Africa, identified infrastructure as one of the key "job drivers" in the country (DED, 2011:27-28). The NDP, which "aims to eliminate poverty and reduce inequality by 2030", has acknowledged that the provision of infrastructure will "facilitate economic activity that is conducive to growth and job creation" (NPC, 2013:24-39). The NDP also states, "South Africa needs to maintain and expand its electricity, water, transport and telecommunications infrastructure to support economic growth and social development goals" (NPC, 2013:159). In light of the foregoing, the NDP has outlined a strategy whereby key infrastructure will be developed, whilst "maintaining their long-term affordability and sustainability" (NPC,2013:40).

Construction of the various projects that are implemented as part of South Africa's infrastructure development programme will primarily be undertaken by local construction companies. The infrastructure development programme provides an opportunity for smaller construction companies to get involved in projects and develop their businesses. However, the construction industry in South Africa is highly competitive and it is becoming increasingly difficult for smaller contractors to obtain projects (Windapo & Cattell, 2011:2). The structure of the construction industry in South Africa is similar to others around the world, whereby a few large companies occupy the top end of the market, whilst the bottom end is saturated with a vast number of smaller companies (Ofori, 2009:1-3). In South Africa, these smaller companies are referred to as emerging contractors. An emerging contractor is defined as "an enterprise that is owned, managed and controlled by previously disadvantaged persons and which is overcoming business impediments arising from the legacy of apartheid" (CIDB, 2013:3).

Projects that are implemented through the infrastructure development programme will require contractors to be registered with the Construction Industry Development Board (CIDB) and have a CIDB grade. The CIDB is a statutory body that has been established by parliament, “it is tasked with providing strategic leadership to stakeholders in order to stimulate sustainable growth, reform and improvement of the construction industry, for effective delivery and the industry’s enhanced role in the country’s economy” (CIDB, 2007).

All contractors that tender for projects administered by the national government, provincial government, municipalities or state owned enterprises must be registered with the CIDB. Contractors have the option to register in five different classes of work, namely General Building, Civil Engineering, Mechanical Engineering, Electrical Engineering and Specialist Work. Contractors are graded according to their financial capacity and works capability. If a contractor is registering for a CIDB grade greater than 6, an assessment into the number of professional engineers within the company will also be undertaken.

The CIDB grade of a contractor plays a critical role when tendering for projects, as it determines the maximum project value that a contractor may undertake. Table 1.1 provides a breakdown of the various CIDB grades with the corresponding maximum project value that a contractor can undertake.

Table 1.1: Summary of contractor CIDB grades and corresponding project value

CIDB Grade	Maximum Project Value
1	R 200,000.00
2	R 650,000.00
3	R 2,000,000.00
4	R 4,000,000.00
5	R 6,500,000.00
6	R 13,000,000.00
7	R 40,000,000.00
8	R 130,000,000.00
9	No Limit

Source: CIDB (2013:d)

According to the CIDB Register of Contractors (RoC), approximately 85% of contractors who are registered have a Level 1 CIDB grading (CIDB, 2015). In terms of the CIDB regulations Grade 1 contractors can only undertake work that has a maximum value of R200 000. Figure 1.1 shows the distribution of contractors in the South African construction industry.

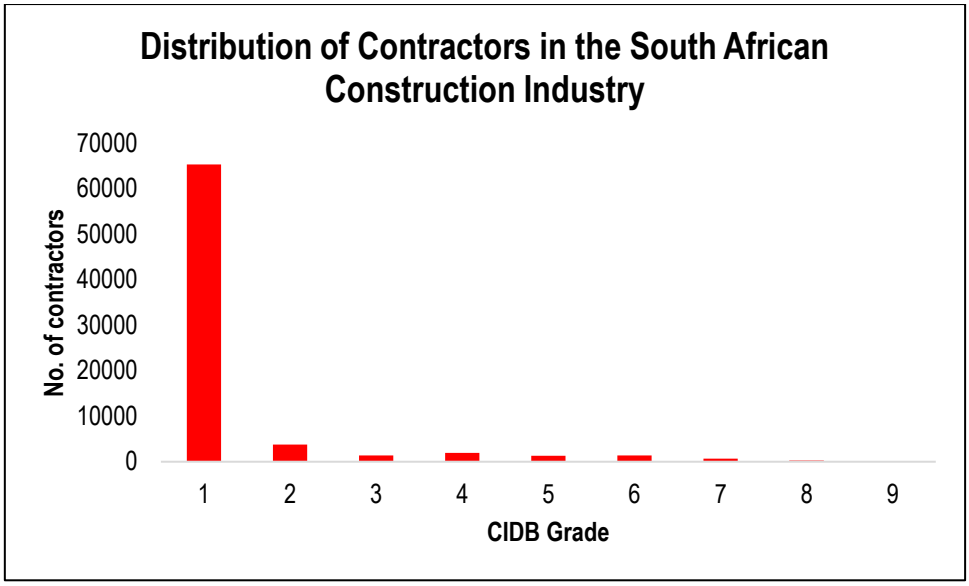


Figure 1.1: Distribution of contractors in the construction industry

Despite the large quantity of contractors in the lower CIDB grades, less than 1% of the national infrastructure budget is spent on projects executed by contractors with CIDB grades between 1 and 2 (CIDB, 2015). Approximately 0.003% and 0.013% of the national infrastructure budget is spent on projects executed by Grade 1 General Building and Civil Engineering contractors respectively (CIDB, 2015). The lack of expenditure by government on projects executed by contractors in the lower CIDB grades has resulted in a large quantity of these contractors either never being awarded a project or being forced to quote exceptionally low prices to obtain a project (Kolver, 2007:2-3). According to Kolver (2007:1), the current situation whereby contractors with higher CIDB grades dominate the industry and have a distinct advantage when tendering for projects is unhealthy.

This problem is further exacerbated by national government, as they prioritise the rollout of multimillion rand projects such as the Strategic Integrated Projects, which effectively exclude contractors with low CIDB grades from tendering for these projects. Emerging contractors are excluded from tendering for multimillion rand projects because their low CIDB grades prohibits them from undertaking projects that have a high value.

The South African government has stressed the importance of transforming the construction industry to enable greater participation and development of emerging contractors (Ntuli & Allopi, 2013:91). Transformation of the industry is critical to ensure that work opportunities are distributed amongst companies across the various CIDB grades and not concentrated amongst the large companies in the higher CIDB grades. In light of the various challenges facing emerging contractors in the construction industry, the CIDB and the Department of Public Works developed the National Contractor Development Programme (NCDP), which

aims to assist and develop previously disadvantaged individuals (PDIs) and emerging contractors in South Africa (CIDB, 2011:3). “The objective of the NCDP is to increase the capacity, equity ownership, sustainability, quality and performance of CIDB registered contractors” (CIDB, 2011:1).

1.2 Problem Statement

According to the CIDB RoC, approximately 85% of contractors are listed as Grade 1 contractors. The low volume of contractors with high CIDB grades shows that despite the mechanisms that have been introduced by government and the CIDB to assist emerging contractors in developing their businesses, very few have been successful. This is reinforced by Kolver (2007) who states that very few emerging contractors that have entered the construction industry have transitioned into successful companies. This study seeks to understand why there are so few emerging contractors that have been successful in the construction industry and establish how some emerging contractors have become a success in the industry.

This research is important as it will assist policy makers in understanding the reasons for the multitude of failed contracting enterprises and enable drafting of policy that can assist in developing emerging contractors into successful contracting enterprises. A thriving construction industry with successful contracting firms will facilitate employment creation and growth of the economy

The primary research question is outlined below: -

- Why are there so few successful emerging contractors in South Africa?

The secondary research questions that are addressed in this study are as follows: -

- What are the challenges that emerging contractors face when they try to improve their CIDB grade?
- What strategies are used by successful contractors to counter the challenges in the construction industry?
- Is technical capacity a fundamental requirement for a construction company to become successful?

1.3 Research Aim and Objectives

1.3.1 Aim

- The primary aim of the study is to determine why there are so few successful emerging contractors in South Africa.

1.3.2 Objectives

The objectives of this study are as follows: -

- To determine the challenges faced by emerging contractors when attempting to improve their CIDB grade;
- To investigate strategies employed by successful emerging contractors to overcome challenges in the industry;
- To determine if there is a link between technical qualifications and being a successful contractor; and
- To investigate the effectiveness of governments interventions in assisting emerging contractors.

1.4 Significance of the Study

Small and medium-sized Enterprises (SMEs) play a significant role in achieving long-term growth and development targets in the South African economy (Adendorff, Appels & Botha, 2011:41). Most emerging contractors in South Africa are classified as SMEs. Approximately 90% of emerging contractors on the CIDB RoC are either Grade 1 or 2 contractors (CIDB, 2015). The high number of emerging contractors in the construction industry with low CIDB grades is unsustainable despite the ostensible policy, as the majority of these companies are never awarded any projects and therefore do not grow. These companies subsequently offer minimal value to the construction industry and the economy.

The growth and development of emerging contractors is intrinsically linked to their CIDB grades. The CIDB grading is based on a company's financial competence and works capability. An emerging contractor can only increase their CIDB grade once they have reached an adequate level of growth and profitability. Consequently, if an emerging contractor does not increase their CIDB grade, they are restricted to projects with a limited value that corresponds to their CIDB grade.

Despite the rapid expansion of the construction industry post 1994, very few emerging contractors have grown into larger companies. The growth of emerging contractors will enable

them to undertake larger and more complex projects. By working on larger projects, emerging contractors will get the necessary exposure and experience that will enable them to develop their businesses further. However, due to the large number of emerging contractors in the construction industry, it is extremely difficult to acquire work. Many emerging contractors have to quote exceedingly low prices that yield small profits just to be appointed on projects. There are also various other challenges prevalent in the industry that impede the development of emerging contractors. These challenges are highlighted in the literature review.

Considering the important relationship between CIDB grades and the growth and development of emerging contractors, this study seeks to identify the challenges that contractors face when attempting to increase their CIDB grades. The challenges faced by emerging contractors provide an insight into the shortcomings within the construction industry and the policies implemented by the CIDB. For growth and development of emerging contractors to be realised, these challenges need to be overcome. Furthermore, the study seeks to investigate strategies that have been employed by successful emerging contractors to counter the challenges present in the industry. These strategies will provide a guideline on the approach that needs to be implemented by emerging contractors to be successful in the construction industry. Finally, the study determines if there is an intrinsic link between technical capacity and having a successful construction company. This is particularly significant, as most studies undertaken thus far have only focused on the effective management of construction companies. Recent studies conducted by Thwala and Phaladi (2009), Windapo and Cattell (2011), Mofokeng (2012) and Ntuli and Allopi (2013), have all focused on the management aspect of emerging contractors.

The development of emerging contractors into larger successful contracting companies will ultimately create a more inclusive construction industry, where a larger percentage of companies benefit from infrastructure projects.

1.5 Limitations

This study only deals with emerging Civil Engineering and General Building contractors that are situated in Gauteng and registered on the CIDB RoC. Due to the homogenous nature of the population, the results should be generalisable with other successful emerging contractors in Gauteng with a CIDB grade 4-6. However, if the research is to be generalised on a national scale or amongst other CIDB grades, further samples of successful contractors from the various provinces and other CIDB grades will have to be taken.

1.6 Structure of the report

Chapter 1: Introduction

Chapter 1 outlines the problem investigated in this study and the significance of the investigation.

Chapter 2: Literature review

Chapter 2 provides a detailed literature review of the research topic. The literature review looks at various aspects pertaining to the construction industry, emerging contractor development, strategic management of successful construction companies and the importance of technical capacity in the construction industry. The major findings from the literature review and the impact that those findings has on the approach that is followed is also presented.

Chapter 3: Research methodology

Chapter 3 details the methodology used during the study. The research philosophy underpinning this study is outlined thereafter, a brief discussion on qualitative and quantitative methods is presented. The research design is also discussed and addresses issues such as reliability, validity and data analysis.

Chapter 4: Research results

The results that were obtained during the research are presented in Chapter 4. An overview of successful emerging contractors is provided based on data supplied by the CIDB. Thereafter, results from the structured interviews and the Authors observations during municipal projects are presented.

Chapter 5: Analysis and discussion of results

Chapter 5 includes an analysis and discussion of the results that were produced during the structured interviews. The data collected and presented in the Chapter 4 were analysed in relation to the various research questions.

Chapter 6: Conclusions and recommendations

Chapter 6 provides conclusions and recommendations that should be implemented in light of the findings from the study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature pertaining to the construction industry in South Africa. The role of emerging contractors in the construction industry is assessed. Thereafter, two main aspects of the CIDB are critically analysed, namely the grading system for contractors and the Contractor Development Programmes (CDPs). The various challenges in the industry are also explored together with the various strategies used by contractors to overcome those challenges. A brief overview of the tendering process and targeted procurement is then presented. Lastly, the management practices of successful construction companies and the importance of technical capacity in the construction industry are assessed.

2.2 SMEs in the construction industry

Several studies have proposed various definitions to describe SMEs. For the purpose of this study, an SME is defined as an emerging contractor with a maximum of 200 full-time employees, a maximum annual turnover of R20 million and a maximum gross asset value of R4 million. The characteristics of a typical construction SME, as outlined in the National Small Business Act 102 of 1996 (DTI, 1996:15) is provided in Table 2.1:

Table 2.1: Characteristics of small and medium-sized construction companies

Sector	**Size**	**Total full-time equivalent of paid employees** *Fewer than:*	**Total annual turnover** *Less than:*	**Total gross asset value** *Less than:*
Construction	Small	50	R5 million	R1 million
	Medium	200	R20 million	R4 million

Source: DTI (1996:15)

SMEs have the ability to substantially influence economic growth, especially in developing countries (Moloi, 2013:8). SMEs contribute between 52 and 57% of the Gross Domestic Product (GDP) in South Africa (Mahembe, 2011:7). More than 90% of companies in the South African construction industry are SMEs (CIDB, 2015). Many of these SMEs are regarded as emerging contractors. An emerging contractor is defined as “an enterprise that is owned,

managed and controlled by previously disadvantaged persons and which is overcoming business impediments arising from the legacy of apartheid" (CIDB, 2013:3).

2.3 Supporting legislation for SMEs in South Africa

Most emerging contractors operate with inadequate financial, managerial and technical capacity (CIDB, 2012:1). As such, they require support from government and the CIDB to grow and develop. Post 1994, the South African government recognised the importance of having a strong SME base in the economy and thus promulgated various initiatives in an attempt to create an enabling environment that promotes the growth of SMEs.

The Department of Trade and Industry (DTI) played an active role in facilitating the emergence of SMEs. Following the *White Paper on National Strategy for the Development and Promotion of Small Business in South Africa* in March 1995, the DTI sought to simplify the process involved with the registration of businesses and introduced various mechanisms to support SMEs. Some of the support mechanisms included the establishment of the Khula Enterprise Finance in 1996, the National Empowerment Fund (NEF) in 1998 and the South African Micro Finance Apex Fund (SAMAF) in 2005. The three aforementioned funds provide finance to SMEs. SAMAF was established to provide access to micro-loans; Khula Enterprise Finance was established to provide access to financing products and credit guarantee schemes; whilst the NEF provides financing options for start-up companies and mainly focuses on Black Economic Empowerment deals (DTI, 2005:2-9).

In addition to financial support, the government provided business development services to SMEs via the Small Enterprise Development Agency (SEDA) that was established in 2004. Business development services are defined as "those non-financial services and products offered to entrepreneurs at various stages of their business needs; these services are primarily aimed at skills transfer or business advice" (Edgcomb & Girardo, 2012:4).

Government also launched the Accelerated and Shared Growth Initiative (AsgiSA) in 2006 to accelerate growth in the country and reduce unemployment. AsgiSA outlined four primary focus areas that are essential for the promotion of small business and enterprise growth. The focus areas include: -

- Access to more procurement opportunities for SMEs from government departments and parastatals;
- Easing the regulatory burden on SMEs by reviewing labour laws and tax administration affecting small businesses;

- Easier access to finance, particularly venture capital; and
- Reducing cash flow problems that are often experienced by SMEs doing business with government.

Source: DTI (2005,17)

Despite the significant investment by government into the promotion of SMEs, most of these companies − particularly in the construction industry − have been unsuccessful. According to Mahembe (2011:7), South Africa has one of the lowest survival rates for construction SMEs in the world.

2.4 The construction industry in South Africa

Gounden (2000:2.2) defined the construction industry as "a broad conglomeration of industries and sectors that add value in the creation and maintenance of fixed assets within the built environment".

The construction industry in South Africa is highly volatile and cyclical in nature which is similar to the construction industry in other parts of the world. The industry is heavily reliant on government for investment and implementation of infrastructure projects. Failure by government to rollout projects has a major impact on emerging contractors, particularly if they do not have any projects in progress. Figure 2.1 shows the annual construction GDP growth forecast from 1994 to 2014, which demonstrates the cyclical nature of the industry.

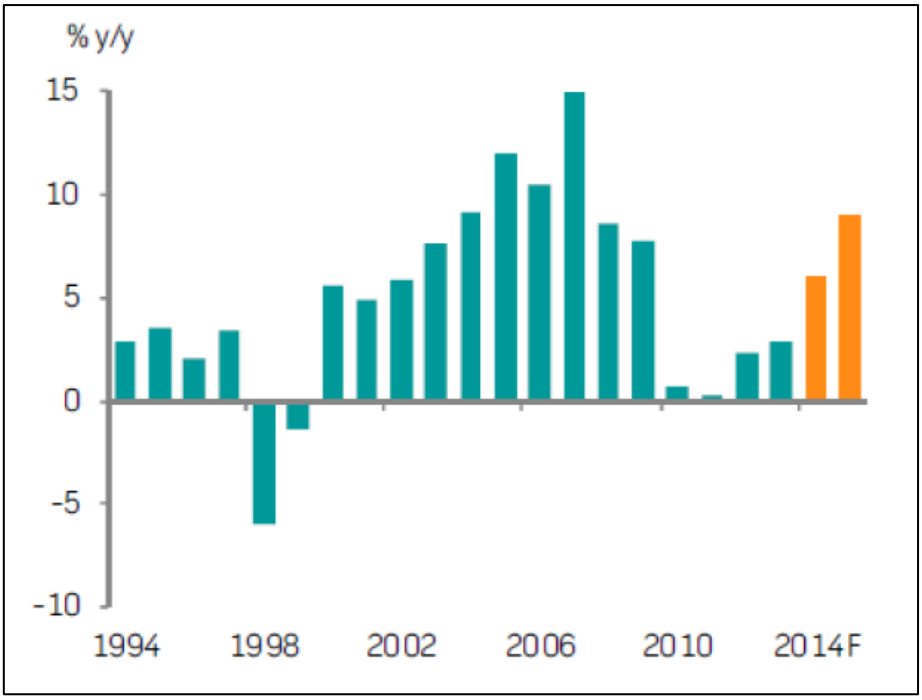


Figure 2.1: Annual construction GDP growth forecast in South Africa

Source: FNB (2014:8)

The construction industry has distinct characteristics that differentiate it from other industries. Enshassi, Al-Hallaq and Mohamed (2006:1-14) stated that the construction industry is a fragmented industry that is sensitive to economic cycles and has a high rate of business failures. According to Ofori (2009:1), several aspects make the construction industry unique. Firstly, the construction industry is one of the few industries where there is such a large variation in the size and diverse nature of projects. Secondly, in most countries there are very low barriers of entry for aspiring contractors to enter the industry. This has a major implication on the award of projects as it enables a contractor without any technical experience to be awarded a project. Thirdly, there is a "lack of economies of scale" due to the diverse range of projects and the large amount of material input into each project (Ofori, 2009:1).

The South African construction industry is similar to other construction industries throughout the world, as it is categorised by having a large component of small companies and a small component of big companies. The big companies are able to undertake complex projects since they have extensive financial and technical resources. The small companies, many of which face financial, managerial and technical constraints, undertake projects that are low in value with minimal profit margins. Most of these companies are never exposed to larger projects and as a result are unable to further their growth and development in the industry. (CIDB, 2012:1-3).

Gounden (2000) produced an explicit list of the strengths and weaknesses of the construction industry. Some of the primary strengths of the construction industry in South Africa, as postulated by Gounden (2000:2.8), are given below:

- Sound macro-economic policy: Policies implemented by government, such as the NDP and the NGP, all indicate that construction will form a major component of the economy. To this end, government has announced the implementation of a multibillion rand infrastructure programme;
- Strong domestic financial services sector: Despite government's endorsement and pledge to invest into the construction sector, the wellbeing of the financial services sector is essential, as they provide funding for infrastructure projects. Government institutions such as the Development Bank of Southern Africa and the Independent Development Corporation also play an important role when financing construction projects;
- Rich in resources: Most construction materials can be procured in South Africa. Therefore, there is very limited dependence on the import of construction materials;
- Regulatory framework: South Africa has a strong base of institutional organisations and bodies in place to assist emerging contractors. The CIDB is an organisation that regulates the construction industry. The role of the CIDB is explored further in this research;
- Research and development facilities: The construction industry has several research bodies such as the Council for Scientific and Industrial Research (CSIR) and built environment faculties at several tertiary learning institutions that have provided valuable insight and research into the industry; and
- Strong consulting capabilities: There is a large base of consulting companies with capacity to provide support to contractors in the industry.

Gounden (2000:2.10) also explored the weaknesses of the construction industry in South Africa. Some of the major weaknesses that he identified are outlined below:

- Emerging market vulnerability: Since South Africa is considered an emerging market it is susceptible to currency speculation. This affects the lending rate of the Reserve Bank, which means that contractors borrowing money need to service a higher interest rate when repaying debt;
- Fluctuating construction demand: Due to the cyclical nature of the construction industry there are fluctuating periods of demand;
- Public sector capacity constraints: The shortage of technical capacity in the public sector causes delays in the efficient rollout of projects;

- Critical skills shortage in the industry due to many people leaving the industry either as a result of retirement or for better prospects in other sectors of the economy;
- Flexible labour practices whereby larger companies use “labour only sub-contractors”. This creates a problem when larger companies “auction” the labour only sub-contract to the company with the lowest price. This practice is detrimental to emerging sub-contractors as they are forced to quote prices with significantly reduced profit margins to obtain work; and
- Ownership patterns: The ownership patterns in the industry are dictated along racial lines. The majority of large and medium-sized construction companies in South Africa are owned by the white population group. This is a legacy of the apartheid era and the limited access to tertiary opportunities for the non-white population group because of the cost of education.

Government has recognised the ability of the construction industry to assist in growing the economy and has committed itself to a multibillion rand infrastructure development programme. The implementation of this programme presents opportunities for emerging contractors to undertake more projects that will allow them to develop the financial and technical aspects of their businesses. However, despite government’s commitment to infrastructure development, there has been a slowdown in the construction industry. “Forecasts from the JSE’s Construction and Materials Index suggest that the South African construction sector is struggling mainly due to muted economic growth and a slowdown in the government’s multibillion rand infrastructure plan” (SACPN, 2014). The limited number of projects being implemented by government has resulted in the larger construction companies expanding their operations into the rest of Africa, whilst still trying to get as many projects as possible in South Africa. Smaller construction companies have also felt the impact, as there are fewer opportunities for these companies to act as sub-contractors on large projects, and increased competition in the industry has made it very difficult to obtain work. Bigger companies have also begun tendering for smaller projects to increase their market share (Ofori, 2009:2-3). This situation is detrimental to emerging contractors, as they have to quote low prices with reduced profit margins just to compete for projects. The slowing economy has placed further strain on emerging contractors and exacerbated difficulties associated with obtaining credit from financial institutions and suppliers.

2.5 The role of the CIDB

The CIDB is a statutory body that has been established by parliament, “it is tasked with providing strategic leadership to stakeholders in order to stimulate sustainable growth, reform

and improvement of the construction industry, for effective delivery and the industry's enhanced role in the country's economy" (CIDB, 2007).

Furthermore, the Construction Industry Development Board has been mandated through the CIDB Act 38 of 2000 to do the following:

- Promote the contribution of the construction industry in meeting national construction demand and in advancing—
  (i) national, social and economic development objectives;
  (ii) industry performance, efficiency and competitiveness; and
  (iii) improved value to clients;
- Provide strategic leadership to construction industry stakeholders to stimulate sustainable growth, reform and improvement of the construction sector;
- Determine and establish best practice that promotes—
  (i) improved industry stability;
  (ii) improved industry performance, efficiency and effectiveness;
  (iii) procurement and delivery management reform;
  (iv) improved public sector delivery management;
  (v) national social and economic objectives, including—
    (aa) growth of the emerging sector;
    (bb) labour absorption in the construction industry;
    (cc) improved labour relations; and
    (dd) positive safety, health and environmental outcomes;
  (vi) human resource development in the construction industry;
- Promote best practice through the development and implementation of appropriate programmed and measures aimed at best practice and improved performance of public and private sector clients, contractors and other participants in the construction delivery process;
- Promote uniform application of policy with regard to the construction industry throughout all spheres of Government;
- Promote, establish or endorse—
  (i) uniform standards; and
  (ii) ethical standards,
  that regulate the actions, practices and procedures of parties engaged in construction contracts;
- Promote sustainable growth of the construction industry and the participation of the emerging sector therein;

- Promote appropriate research on any matter related to the construction industry and its development;
- Implement policy on construction industry development;
- Advise the Minister on policy and programmed which impact on construction industry growth and development: and
- Promote any other related objective.

Source: RSA (2000:6)

The aforementioned list was revised by the CIDB in the *Strategic Plan 2011/12 to 2015/16* document that was produced in 2011 (CIDB, 2011a:11). The revised list has been outlined below:

- **Provide strategic leadership** to construction industry stakeholders to stimulate sustainable growth, reform and improvement of the construction sector;
- **Promote *sustainable* growth** of the construction industry and the participation of the emerging sector in the industry;
- Determine, establish and **promote improved performance and best practice** of public and private sector clients, contractors and other participants in the construction delivery process;
- **Promote** uniform application of policy throughout all spheres of government and promote uniform and ethical standards, construction procurement reform, and **improved procurement and delivery management** – including a code of conduct; and
- **Develop** systematic methods for monitoring and regulating the performance of the industry and its stakeholders, including **the registration of projects and contractors.**

It is interesting to note that the revised mandate published by the CIDB in 2011 has elevated the “improved performance of contractors” to third on the list, whereas in 2000 it was less of a priority. This indicates the increased importance of contractor performance in the construction industry.

2.6 CIDB contractor grading system

The Construction Register Services programme was established and gazetted in June 2004. The main component of the Construction Register Services programme is the RoC, which is a database of all the contractors in the construction industry. It is a requirement for all contractors that want to tender for projects administered by national government, provincial government, municipalities or state owned enterprises to be registered on the database.

Contractors involved in home building, labour-only contractors, sub-contractors and contractors who do not carry out work in the public sector as main contractors are not obliged to register on the database.

Contractors have the option to register in five different classes of work, namely General Building, Civil Engineering, Mechanical Engineering, Electrical Engineering and Specialist Work. Contractors are then graded according to their financial capability and works capability. If a contractor is registering for a CIDB grade greater than 6, an assessment into the number of professional engineers within the company will also be undertaken. A contractor may register as a potentially emerging enterprise if the company is owned, managed and controlled by previously disadvantaged individuals. The main advantage of being a potentially emerging enterprise is that these companies are usually given preference during the award of projects and for the selection CDPs.

The CIDB grade of a contractor plays a critical role when tendering for projects, as it determines the maximum project value that a contractor may undertake. Table 2.2 provides a breakdown of the various CIDB grades with the corresponding maximum project value that a contractor can undertake.

Table 2.2: Summary of contractor CIDB grades and corresponding project value

CIDB Grade	Maximum Project Value
1	R 200,000.00
2	R 650,000.00
3	R 2,000,000.00
4	R 4,000,000.00
5	R 6,500,000.00
6	R 13,000,000.00
7	R 40,000,000.00
8	R 130,000,000.00
9	No Limit

Source: CIDB (2013:d)

The CIDB previously utilised two methods to determine the grade of a contractor namely Method A and B. Method A was based on financial capacity and works capability and was applicable to contractors in all grades. Method B was based on available capital and the number of registered professional engineers within a company. Method B was only applicable to contractors applying for a CIDB grade of 5 and above (CIDB, 2011c:3). The CIDB has

subsequently scrapped Method B and currently only uses Method A to evaluate contractors, however, both methods have been outlined below.

Financial capability and works capability of a contractor are two of the most important considerations when determining CIDB grades. Contracting is a cash intensive business due to the nature of construction projects. Many projects fail due to contractors experiencing cash flow problems because of poor financial planning. Therefore, the CIDB carefully analyses the financial capability of contractors. Financial capability relates to two fundamental aspects, namely the financial history of the company and the amount of capital available to the company. When assessing a company's financial history, the CIDB examines two aspects. Firstly, the turnover of a company in the two financial years preceding the submission of the application and secondly, the amount of capital available to a company. The amount of capital available to a company is determined by assessing liquid cash resources, loans and any financial sponsorships.

The works capability of a contractor is determined by assessing the largest project completed by the contractor, a maximum of 5 years prior to the submission of the application. Table 2.3 provides a detailed breakdown of the financial and works capability requirements for contractors being assessed using Method A and B.

Table 2.3: Financial and works capability requirements for contractors

CIDB Grade	Method A			Method B
	Financial Capability		Works Capability	
	Best Annual Turnover	Available Capital	Value of Largest Completed Project	Available Capital
2	-	-	R130,000.00	N/A
3	R1,000,000.00	R100,000.00	R450,000.00	N/A
4	R2,000,000.00	R200,000.00	R900,000.00	N/A
5	R3,250,000.00	R650,000.00	R1,500,000.00	R1,300,000.00
6	R6,500,000.00	R1,300,000.00	R3,000,000.00	R2,600,000.00
7	R20,000,000.00	R4,000,000.00	R9,000,000.00	R8,000,000.00
8	R65,000,000.00	R13,000,000.00	R30,000,000.00	R26,000,000.00
9	R200,000,000.00	R40,000,000.00	R90,000,000.00	R80,000,000.00

Source: CIDB (2013:d)

Table 2.3 shows that when evaluating a contractor using Method A, the available capital required is half the amount required, when compared to a contractor being evaluated using Method B.

Method A enables the CIDB to evaluate the track record of a company. The contractor is required to submit the following documents: -

- Letters of Award: These letters must be on an official letterhead of the client and include the tender number, contract amount and must be signed;
- Sub-contracting: All claims of sub-contracting work must be accompanied by a sub-contract agreement;
- Joint ventures: All joint venture work must include the joint venture agreement;
- Certificates of completion: Must be on the letterhead of the client, signed and dated;
- Certificates of Payment: Final payment certificates must be included and have the final contract value; and
- If work was completed for a private sector client, the contractor's bank statements that reflect payments from the client must be submitted.

Source: CIDB (2013:h)

Table 2.4 shows the minimum number of registered professional engineers that a contractor must have within their full-time staff compliment, when being evaluated using Method A and B.

Table 2.4: Minimum number of registered professionals required for registration in a class of construction works

		Minimum number of full time Registered Professional(s) for registration in a class of construction works			
CIDB Grade	**Maximum Project Value**	**Method A**		**Method B**	
		General Building (GB)	Civil Engineering (CE)	General Building (GB)	Civil Engineering (CE)
4	R4,000,000.00	-	-	-	-
5	R6,500,000.00	-	-	1	1
6	R13,000,000.00	-	-	2	2
7	R40,000,000.00	1	1	4	4
8	R130,000,000.00	2	2	6	6
9	No Limit	3	3	8	8

Source: CIDB (2012a:4)

From the Table 2.4, It is evident that Method B is more stringent when compared to Method A. No reason has been provided by the CIDB for removing Method B as a form of contractor evaluation.

Method A makes it apparent that the CIDB only deems it necessary to have professionally registered persons on projects that have a value greater than R13,000,000.00. This is surprising seeing that approximately 74% of all Civil Engineering and General Building projects are undertaken by contractors with a CIDB grade from 1 to 6 (CIDB, 2015).

2.7 Distribution of Civil Engineering and General Building projects amongst contractors in South Africa

Table 2.5 and Table 2.6 provide a breakdown of the total number of General Building and Civil Engineering contractors in each grade of the construction industry in South Africa and Gauteng, respectively. Both tables emphasise the skewed distribution of contractors in the construction industry.

Table 2.5: Total number of General Building contractors in the construction industry in South Africa and Gauteng

CIDB Grade	No. of contractors	
	South Africa	Gauteng
1	57,442	21,470
2	2,114	572
3	626	154
4	867	206
5	586	167
6	699	203
7	344	130
8	125	59
9	47	32

Source: CIDB (2014a)

Table 2.6: Total number of Civil Engineering contractors in the construction industry in South Africa and Gauteng

CIDB Grade	No. of contractors	
	South Africa	Gauteng
1	26,636	7,898
2	1,572	249
3	957	105
4	930	205
5	699	162
6	799	227
7	446	154
8	156	75
9	75	49

Source: CIDB (2014a)

From Table 2.5 and Table 2.6 it is evident that there is a vast oversupply of contractors in the lower grades of the construction industry due to the low barriers of entry into the industry. Approximately 91% and 83% of General Building and Civil Engineering contractors in South Africa are registered as Grade 1 contractors.

Table 2.7: Distribution of General Building projects in South Africa according to value

CIDB Grade	Year							
	2007	2008	2009	2010	2011	2012	2013	2014
9	46.87	47.31	48.96	49.90	50.93	51.46	50.11	49.55
8	28.74	25.82	24.32	24.14	21.08	23.40	28.32	30.87
7	14.76	16.11	16.28	14.94	15.06	13.86	12.47	12.04
6	4.32	5.29	4.63	5.77	7.11	5.78	4.80	4.27
5	1.88	2.38	2.71	1.90	3.00	2.16	1.75	1.51
4	1.82	1.81	1.78	1.94	1.64	1.79	1.45	1.10
3	1.37	1.06	0.87	1.21	1.02	1.39	0.92	0.58
2	0.21	0.18	0.28	0.17	0.15	0.16	0.17	0.08
1	0.03	0.04	0.16	0.02	0.00	0.01	0.01	0.00

Note: All values expressed as percentages

Source: CIDB (2015)

Table 2.8: Distribution of Civil Engineering projects in South Africa according to value

CIDB Grade	Year							
	2007	2008	2009	2010	2011	2012	2013	2014
9	62.87	51.90	27.63	53.97	50.93	26.19	42.60	38.39
8	13.12	20.46	30.28	21.36	21.08	32.07	25.27	28.40
7	10.07	14.06	21.79	12.94	15.06	22.60	14.20	17.52
6	5.88	6.55	9.50	5.18	7.11	9.12	8.85	7.39
5	3.68	3.37	4.42	2.78	3.00	4.07	3.92	3.77
4	2.63	2.37	3.83	2.55	1.64	3.54	3.17	2.95
3	1.53	1.16	1.99	1.10	1.02	2.22	1.78	1.44
2	0.21	0.12	0.41	0.11	0.15	0.18	0.22	0.12
1	0.0158	0.01	0.14	0.01	0.00	0.01	0.01	0.01

Note: All values expressed as percentages

Source: CIDB (2015)

Table 2.7 and Table 2.8 reflect the distribution of General Building and Civil Engineering projects in South Africa based on project value. The distribution provided in the tables above are indicated as percentages because the CIDB does not have confidence in the actual values of the projects. Table 2.7 and Table 2.8 show that in terms of the value of projects implemented, approximately 90% of General Building projects and 84% of Civil Engineering projects, were undertaken by contractors with a CIDB grade between 7 and 9. This shows that grade 7, 8 and 9 contractors generate the majority of the money in the construction industry. Furthermore, a mere 0.03% and 0.016% of projects in terms of value, were undertaken by Grade 1 General Building and Civil Engineering contractors respectively. This demonstrates that although there is an abundance of Grade 1 contractors, they undertake a trivial amount of work.

Table 2.9: Distribution of General Building projects implemented annually in South Africa

CIDB Grade	Year						
	2009	2010	2011	2012	2013	2014	2015
9	3.40	3.08	1.47	5.52	4.86	5.04	2.29
8	7.28	4.92	5.59	5.21	7.06	11.67	1.31
7	11.17	20.62	17.35	15.64	14.13	18.83	9.48
6	21.84	19.69	22.35	16.87	19.21	19.10	25.49
5	13.11	16.00	15.44	16.87	15.67	14.32	21.24
4	18.45	17.23	19.85	16.87	17.22	11.94	23.86
3	8.74	10.77	7.79	9.82	8.17	7.69	14.05
2	16.02	7.69	10.15	13.19	13.69	11.41	2.29
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: All values expressed as percentages

Source: CIDB (2015)

Table 2.10: Distribution of Civil Engineering projects implemented annually in South Africa

CIDB Grade	Year						
	2009	2010	2011	2012	2013	2014	2015
9	1.82	5.02	3.94	3.08	3.14	4.17	10.00
8	10.91	6.76	7.88	8.73	5.94	7.21	14.00
7	11.17	12.16	10.88	11.68	11.87	12.77	16.50
6	20.78	22.78	21.95	20.41	17.23	14.66	25.50
5	15.58	14.09	17.45	12.20	15.72	7.96	12.50
4	14.81	11.20	13.70	14.38	7.22	12.14	3.50
3	13.51	18.15	16.70	18.74	30.03	28.19	10.50
2	11.43	9.85	7.50	10.78	8.85	12.90	7.50
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: All values expressed as percentages

Source: CIDB (2015)

Table 2.9 and Table 2.10 illustrate the distribution of General Building and Civil Engineering projects respectively, that are implemented annually in South Africa. No information was available from the CIDB on the number of projects implemented by Grade 1 contractors. Table 2.9 and Table 2.10 show that approximately 55% and 45% of the General Building and Civil Engineering projects respectively, were undertaken by contractors with a CIDB grade between 4 and 6. Table 2.9 shows that in 2015 only 2.29% of projects were undertaken by CIDB Grade 2 contractors. This is alarming seeing that there are more than 2,000 Grade 2 contractors. In terms of Civil Engineering projects, it is interesting to note that a large amount of projects are implemented by Grade 3 and 6 contractors.

Table 2.11: Number of General Building contractors in each grade nationally and the distribution of projects implemented

Contractor Grade	2013		2014		2015	
	No. of GB Contractors	% of Projects	No. of GB Contractors	% of Projects	No. of GB Contractors	% of Projects
1	27 541	0.00	41 903	0.00	57 442	0.00
2	1 448	13.69	1 708	11.41	2 114	2.29
3	442	8.17	546	7.69	626	14.05
4	603	17.22	707	11.94	867	23.86
5	516	15.67	570	14.32	586	21.24
6	526	19.21	623	19.10	699	25.49
7	233	14.13	281	18.83	344	9.48
8	84	7.06	104	11.67	125	1.31
9	33	4.86	40	5.04	47	2.29

Source: CIDB (2015)

Table 2.12: Number of Civil Engineering contractors in each grade nationally and the distribution of projects implemented

Contractor Grade	2013		2014		2015	
	No. of CE Contractors	% of Projects	No. of CE Contractors	% of Projects	No. of CE Contractors	% of Projects
1	13 413	0.00	19 700	0.00	26 636	0.00
2	1 064	8.85	1 272	12.90	1 572	7.50
3	579	30.03	746	28.19	957	10.50
4	613	7.22	790	12.14	930	3.50
5	567	15.72	647	7.96	699	12.50
6	638	17.23	730	14.66	799	25.50
7	275	11.87	346	12.77	446	16.50
8	91	5.94	124	7.21	156	14.00
9	46	3.14	62	4.17	75	10.00

Source: CIDB (2015)

Table 2.11 and Table 2.12 provide a comparison for the number of contractors in each grade and the number of projects that are implemented in that respective grade. Both tables indicate that there is increased competition in the lower contracting grades due to the large number of contractors competing for work. The current situation, whereby an overwhelming majority of contractors occupy the lower CIDB grades, where limited projects are implemented, will ultimately result in the failure of many of these businesses. Although both tables above make it appear as if projects are well distributed amongst the CIDB grades it is important to remember that in terms of the value of projects, approximately 90% of General Building projects and 84% of Civil Engineering projects, were undertaken by contractors with a CIDB grade between 7 and 9 (CIDB, 2015).

As shown in Table 2.11 and Table 2.12 less than 2% of the National RoC consists of contractors that are in Grades 7, 8 and 9. These contractors are able to undertake larger, more specialised projects with the advantage of having less competition when tendering for projects. The complexity of some large projects, result in work packages that cannot be sub-divided into smaller portions. Consequently, smaller contractors are unable to benefit by means of a sub-contracting arrangement. Many large projects also require a high level of business management, technical acumen and financial solvency, these capabilities are only found amongst the contracting companies with high CIDB grades (Windapo & Cattell, 2011:ii). All the issues mentioned above suggest that the current situation in the construction industry is unsustainable for contractors with low CIDB grades.

2.8 Tendering process and the award of projects

For construction companies to undertake projects implemented by government, they must follow the legislated procurement processes which includes tendering for work. The tender process allows government to advertise projects and request bids from suitably qualified companies. This process gives government the opportunity to assess all the interested bidders and choose the best company with the lowest price, that has the capability to execute the project.

The evaluation of tenders is undertaken using various methods. The four common methods utilised by the public sector have been set out below:

1. Financial offer: Ranks tenderers with the lowest price scoring the highest points;
2. Financial offer and preferences: Ranks tenderers with the lowest price scoring the highest points. If tenderers are eligible for preference points, then these points can also be claimed;
3. Financial offer and quality: A quality evaluation is undertaken to determine if the bidder has the required capabilities to execute the project. If the bidder passes the quality evaluation, then the financial offers are compared, whereby the bid with the lowest price receives the highest points; and
4. Financial offer, quality and preferences: A quality evaluation is undertaken to determine if the bidder has the capability to undertake the project. If the bidder passes the quality evaluation, then the financial offers are compared and the bid with the lowest price receives the highest points. If tenderers are eligible for preference points, then these points can also be claimed.

Source: CIDB (2010:8)

The tendering process in South Africa is generally regarded as the fairest method to procure services. However, a significant emphasis is placed on price. This approach may work in other sectors of the economy but it is not well suited to the construction industry. Construction work, especially complex projects, requires experienced contractors with the ability to undertake these projects. Although price is an important component when adjudicating tenders, it is important to appoint a contractor with experience and credible references. Some building projects (such as bridges and multi-storey buildings) and Civil Engineering projects (such as water retaining structures i.e. dams and reservoirs) require specialist skills that are usually expensive and result in companies tendering higher prices. Moore (2015:54) states his reservations about whether traditional procurement methods is the best approach to public sector construction projects. He asserts that clients who decide to appoint a company based on price, eventually terminate the appointment because of a lack of performance by the contractor. Furthermore, it then costs the client more to appoint another contractor to rectify the mistakes of the previous contractor as work is of such a poor quality that additional funds either needs to be spent on repair work or completely redoing the existing work (Moore, 2015:29).

Most construction projects are evaluated based on financial offer, quality and preferences. In this regard, it is important that the quality evaluation is undertaken by a team of professionals that have the ability to assess the technical competence of contractors. This will ensure that companies without the required technical experience and skills to undertake a project are disqualified prior to the evaluation of financial offers. Far too often, evaluation of tenders pertaining to construction projects are undertaken by personnel in the supply chain. Most personnel in the supply chain, throughout government, are usually administrators who do not understand the complexities of construction projects. Having competent, technically qualified personnel assess the technical component of construction tenders would ensure that only companies with the capacity to undertake the project have their financial bids evaluated.

2.9 Targeted procurement in South Africa

Targeted procurement has been defined as “a system of procurement that provides employment and business opportunities for marginalised individuals and communities, enables procurement to be used as an instrument of social policy in a fair, equitable, competitive, transparent and cost-effective manner” (DPW, 2001).

Targeted procurement has been used in the construction sector to address “skewed ownership patterns” and encourage “wider participation in public sector construction

opportunities" (Gounden, 2000:4.14,9.2). Currently, the socio-economic objectives that are being addressed in the construction industry via targeted procurement include promoting the development of Small Medium and Micro-sized Enterprises (SMMEs), implementing affirmative action to address previous marginalisation of the non-white population and the creation of work opportunities for poor communities.

In the past, projects were structured to favour the appointment of technically competent, well-established companies, and developmental objectives were not taken into consideration when implementing these projects. This approach did not facilitate the development and participation of construction companies that fell in into the SMME category (Watermeyer, Gounden, Letchmiah & Shezi, 1998:2).

In 1995, the 10-point plan was introduced by government to assist SMMEs to play a more active role in public sector procurement. The plan outlines ten strategies that relate to the procurement policy and is listed below: -

1. Improving access to tendering information;
2. The development of tender advice centres;
3. Broadening the participation base for contracts less than R7,500;
4. The waiving of security / sureties on construction contracts having a value less than R100,000;
5. The unbundling of large projects into smaller contracts;
6. The promotion of early payment cycles by government;
7. The development of a preference system for small and medium-sized enterprises owned by historically disadvantaged individuals;
8. The simplification of tender submission requirements;
9. The appointment of a procurement ombudsman; and
10. The classification of building and engineering contracts.

Source: RSA (1997)

The list outlined above shows that there are ample opportunities for SMMEs to get involved in public sector procurement. However, it fails to mention technical competence and experience as a requirement when tendering for work. Perhaps, technical competence and experience was omitted from the list because it was assumed that SMMEs would not have the required experience and skills as they are "start-up" companies. It seems that the list provided above is the root cause for the absence of technical requirements in most of the CIDB policies.

Targeted procurement enables the 10-point plan to be implemented "in an efficient and effective manner". It also allows government to implement projects in the construction industry,

whilst being able to develop specific sectors within the construction industry (Watermeyer, Gounden, Letchmiah & Shezi, 1998:5).

Watermeyer, Gounden, Letchmiah & Shezi (1998:10) suggested that the use of targeted procurement gives the client the opportunity to unbundle the project in various ways, namely:-

- Unbundling projects into smaller quantities that will enable more contractors to get a share of the work and will result in more contractors getting exposure;
- Compelling main contractors to sub-contract work to targeted enterprises during the duration of the project;
- Requesting joint venture bids between targeted emerging contractors and established contractors; and
- Third party management that supports companies that are unable to operate as main contractors.

Targeted procurement ensures that a wide variety of contractors benefit when projects are implemented by government. The use of targeted procurement also ensures that the objectives of projects are achieved in the most economic manner, whilst ensuring that targeted groups are given an opportunity to work on projects. Targeted procurement can be used as an effective tool to develop emerging contractors and give them exposure to larger projects.

Targeted procurement is implemented, using a combination of three mechanisms, namely the classification of contracts, resource specifications and development objectives/price mechanisms (Watermeyer, Gounden, Letchmiah & Shezi, 1998:5-10). The three mechanisms have been outlined below:

2.9.1 Contract classification

Contracts are classified based on the contracting parties, the risk to each party and the quantity of resources required to execute the works. The purpose of contract classification is to enable contracts to be packaged into smaller components that will enable greater participation by emerging contractors (Watermeyer, Gounden, Letchmiah & Shezi, 1998:6-8).

Contract classification should be used in more projects to facilitate a greater number of emerging contractors gaining experience on projects.

2.9.2 Resource specifications

Resource specifications enable the client to define which resources need to be procured via targeted enterprises (Watermeyer, Gounden, Letchmiah & Shezi, 1998:5-6). It can also be used to enable the main contractor to structure their resources to provide opportunities to targeted labour.

Resource specifications can be used by client bodies to stipulate to contractors that all labour and materials in the project must be procured from the area where the project is being undertaken. This will benefit and empower local communities during the project.

2.9.3 Development objective

Development objectives entails meeting the socio-economic objectives of the project. Tenderers are awarded preference points for their price and ability to meet the socio-economic objective of the project (Watermeyer, Gounden, Letchmiah & Shezi, 1998:8-10). The use of development objectives gives government an opportunity in advance, to prioritise the socio-economic areas that must be developed by the successful tenderer during the project.

Development objectives encourage companies to make “optimum economic use” of the following aspects during the contract: -

- Local labour;
- Targeted labour;
- Local resources;
- Affirmable Business Enterprises (SMMEs which are owned and controlled by blacks); and
- Targeted Enterprises.

Source: Watermeyer, Gounden, Letchmiah & Shezi (1998:8)

Watermeyer, Gounden, Letchmiah & Shezi (1998:8) stated that market forces and affordability play a major role in defining the level at which a company can comply with the socio-economic objectives of a contract. Although emerging contractors receive a direct preference in most public-sector tenders, these companies still need to submit tenders that are technically competent with a low price.

2.10 Challenges facing contractors

Emerging contractors face several challenges that threaten their survival in the construction industry. If these challenges are not overcome, South Africa will continue to see a large number of emerging contractors fail in the industry.

Ntuli and Allopi (2014:570) states that there are distinct features in the construction industry that make companies susceptible to failure. These include; trading within a highly uncertain environment, pricing a product before it is produced, making assumptions on the duration of projects, adopting a competitive tendering approach and having an over capacitated market because of low barriers of entry (Ntuli & Allopi, 2014:570).

Ofori (2009:3) identified important features within the construction industry that have adverse implications on emerging contractors. These include; the low level of bargaining power of contractors, discontinuity of work that results when projects are complete, financing of projects whereby contractors are paid via interim payments and the high level of administrative approvals that are required before contractors are considered for a project. Furthermore, Wong and Thomas (2010:2) stated that high competition, low profit margins, high risk and the unpredictability in the demand of work make construction SMEs susceptible to failure.

The CIDB compiled an extensive list of the challenges facing contractors in the industry. The challenges that they highlighted are particularly prevalent amongst emerging contractors. Some of the major challenges that they identified are listed below: -

- Contractors' lack of skills: Since most emerging contractors are entrepreneurs, many of them lack technical skills that are specific to the construction industry, such as being able to prepare a construction programme, estimating quantities on building work and having the ability to read and comprehend construction drawings. Some emerging contractors also lack basic financial and project management skills;
- Financial constraints and limited access to funding: Many emerging contractors struggle to obtain guarantees and performance bonds because of their lack of capital. They also experience difficulties in obtaining credit facilities from suppliers because they are small companies and lack the credibility that is associated with larger companies in the industry;
- Late payments by clients: Most client bodies have a minimum payment cycle of 30 days. This is a long time for emerging contractors that operate with limited cash flows.

If payment is delayed beyond the 30-day cycle, it has major financial implications on these companies (e.g. paying suppliers and debit orders);

- Short-term nature of work: Since emerging contractors are primarily involved in small-scale projects that have short durations, finding new work is difficult due to the competitive nature of the industry. The short-term nature of work also makes it difficult to implement long-term strategies and growth plans;
- Overly complicated tender and procurement procedures that delay the awarding of contracts and therefore delay commencement of projects;
- Intense competition that is particularly prevalent in the lower CIDB grades due to the oversupply of contractors in those grades;
- Lack of equipment: Hiring equipment such as heavy machinery and scaffolding can be very expensive. Furthermore, if a contractor experiences delays on a project − which is common, the supplier of the equipment is entitled payment for all the extra time that the equipment was on site. This can drastically reduce a contractor's profits, especially if he is unfamiliar with the conditions of the contract being used on the project; and
- Uncertainties with the price of materials and supplies: Uncertainties related to the price of materials and supplies can become very risky and result in significant losses. Furthermore, most emerging contractors have poor relationships with suppliers and do not enjoy discounts and preferential treatment that is often given to larger companies who have developed relationships with suppliers over several years.

Source: CIDB (2011b:7)

The challenges prevalent in the construction industry create a difficult environment for emerging contractors to operate. These challenges also prevent the growth and development of emerging contractors. The failure of emerging contractors to grow and develop in the industry, prevent them from increasing their CIDB grades.

Many of the challenges outlined by the CIDB have been highlighted in several other studies which demonstrates the prevalence of these challenges in the industry. However, from all the literature reviewed by the researcher, only CIDB (2011b:7) mentioned the lack of skills amongst emerging contractors as a major challenge. "Contractors' lack of skills" was the first challenge stipulated in the list above. This shows an increase in the CIDB's understanding of the importance of skills in the industry. However, this issue has not been highlighted sufficiently in other studies, with most studies concentrating on the lack of financial and management skills amongst emerging contractors. Croswell and McCutcheon (2001:1) found that since the late 1970s there have been two approaches to overcome the challenges faced by small contractors. The first approach focused on the management and operations of small

contractors which has resulted in significant research into “almost every aspect of the management of a company”. The second approach focused on policies and regulations that assist in the growth of small contractors (Croswell & McCutcheon, 2001:1). Unfortunately, the various support mechanisms proposed to assist emerging contractors will not succeed if the main problem of inadequate skills and capacity in the industry remains unaddressed.

For an emerging contractor to increase their CIDB grade, they need to show the CIDB that they generate the required financial turnover and possess the necessary works capability to undertake projects. Both of the aforementioned requirements that need to be satisfied in order for a contractor to increase their CIDB grade require a contractor to be technically competent. Firstly, financial turnover is based on achieving profits from projects. Profits can only be achieved if a project has been successfully completed. A contractor with technical skills has more of a chance of completing projects successfully. Research conducted by Gabula (2012) shows that a lack of technical skills is one of the major causes of project failure in the construction industry. This is supported by Mohlala (2015) who claims that projects undertaken by contractors with a technical qualification are completed quicker than projects undertaken by contractors without a technical qualification. Projects that exceed their duration result in reduced profits or losses due to the additional time that the contractor has to spend on site.

Secondly, works capability is based on the projects that a contractor can undertake. A contractor without the relevant technical skills is unable to undertake larger and more complex projects. Larger projects also yield significant profits. If a contractor is unable to undertake larger projects, it will ultimately prevent them from increasing their profit margins and inhibit their growth. This will ultimately prevent the contractor from increasing their CIDB grade.

The two other challenges also worth mentioning that inhibit emerging contractors from increasing their CIDB grade are inconsistent work opportunities and financial constraints in the construction industry.

Inconsistent work opportunities are caused by the cyclical nature of the construction industry, which results in periods where there is a low volume of work. Unfortunately for emerging contractors, the impact of these low-volume periods is amplified by the limited number of projects that are implemented in the lower CIDB grades. This problem is exacerbated further by the intense competition in the lower CIDB grades. If a contractor is unable to secure projects, then they have no means of growing their business. This eventually results in them stagnating in the industry. A contractor can only increase their CIDB grade when they

demonstrate that they have the necessary works capability. This will never happen if they fail to undertake projects.

Financial constraints also play a major role in a contractor increasing their CIDB grade. Contracting is a very cash intensive business; therefore, cash flow and capital are essential to ensure that a company becomes successful. If a company is unable to generate sufficient turnover, they will not satisfy the financial criteria of the CIDB grading process. Generating turnover is dependent on acquiring projects, being paid timeously and making a profit on projects. If a contractor does not have any projects, then the company has no source of income and will fail to satisfy the financial component of the CIDB grading process. Similarly, a company may have projects that they are undertaking, but are not getting paid on time due to budgetary constraints or poor financial management by the client. This also creates a difficult situation for the contractor.

If an emerging contractor is continuously plagued by the challenges mentioned above, they will be unable to execute new projects, which will culminate in them either being liquidated or stagnating in the industry.

2.11 Contractor development programmes

Contractor development is defined as “a deliberate and managed process to achieve targeted developmental outcomes that improves contractor grading status, performance, quality, equity and targeted ownership” (CIDB, 2011:3).

The NCDP is a government programme that consists of a partnership between the CIDB, national and provincial Public Works and other willing stakeholders. All entities participating in the programme commit their resources to develop emerging contractors and align their CDPs with the objectives set out in the NCDP framework (CIDB, 2011:3).

The purpose of initiating CDPs was to address challenges facing emerging contractors. Contractors receive several benefits during CDPs such as facilitated training, funding, easy access to information, networking opportunities and the benefit of targeted procurement. The objectives of the NCDP, as outlined in the framework for National Contractor Development, are set out below (CIDB, 2011:5): -

- Improve the grading status of contractors;

- Increase the number of black, women, disabled and youth-owned companies in targeted grades and categories;
- Creating sustainable companies by ensuring continuity of work, therefore creating a platform for sustained employment and skills development;
- Improve performance of contractors in terms of quality, employment practices, skills development, safety, health and the environment; and
- Improve the business management and technical skills of contractors.

The list above shows that technical skills of contractors are only fourth in terms of priority. This is deeply concerning especially if the main priority of the CDPs is for contractors to increase their CIDB grading status. It is difficult to comprehend how a contractor can increase their CIDB grade without increasing their technical skills.

CDPs aim to identify and remove constraints affecting the development and performance of construction companies. The developmental needs of contractors vary during the different stages of their growth (CIDB, 2011b:4). The NCDP has established interventions to assist contractors at different stages of their growth. Smaller contractors have the opportunity to enter learner contractor and skills development programmes. These contractors are eligible to be enrolled in contractor learnership programmes that involve mentorship and learning basic business and construction skills pertaining to contracting.

Medium-sized companies participate in enterprise development and performance improvement initiatives (CIDB, 2011b:4). Enterprise development is aimed at contractors with a CIDB grade between 2 and 6 that are currently growing their resources and capabilities. These companies should already have project management processes in place and be implementing these processes during projects. Enterprise development and performance improvement initiatives include structured developmental support that is given to emerging contractors or alternatively consist of a structured relationship with an experienced contractor on a project.

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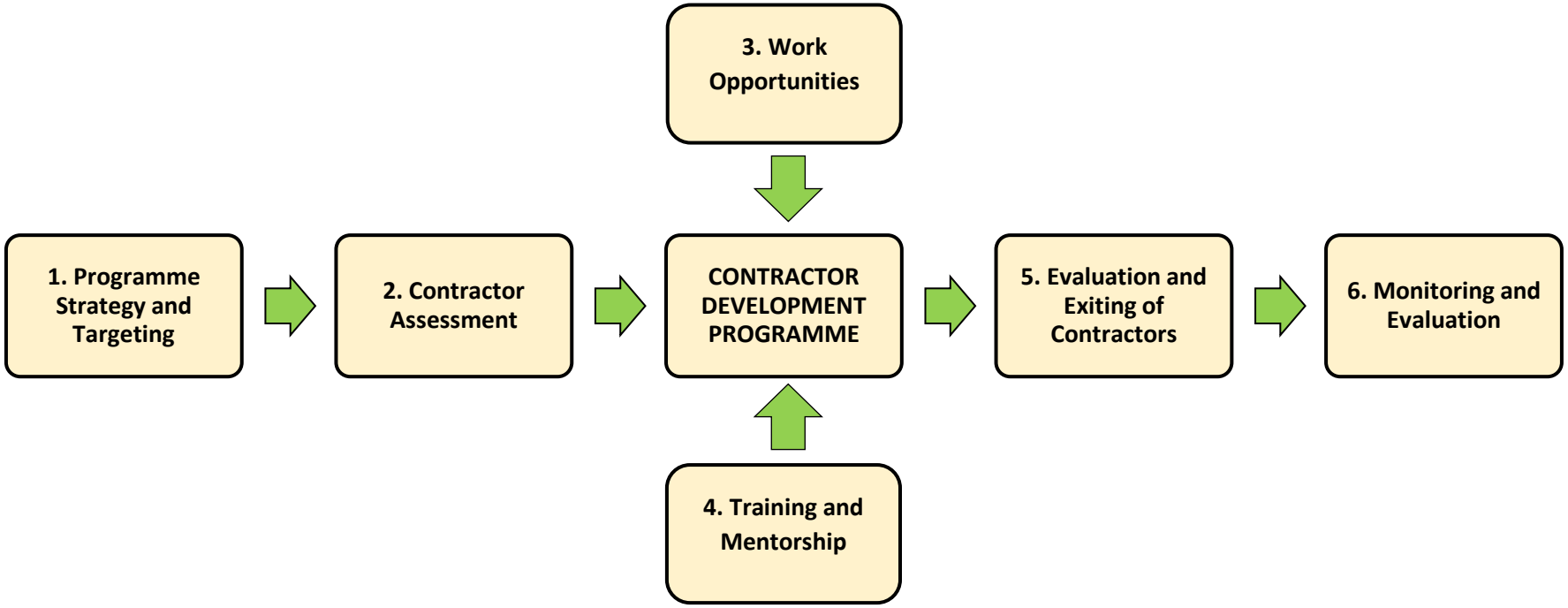


Figure 2.2: Typical implementation of CDPs

Source: CIDB (2011:7)

Figure 2.2 shows how CDPs are implemented. A detailed breakdown of the implementation stages of CDPs are provided below:

1. Programme strategy and targeting: Formulation of the CDP with strategic objectives and targeting of specific contractors. The strategy should be aligned with the needs of the client implementing the project.
2. Contractor assessment: Assessing contractors to ensure that they are suitable entrants to the programme.
3. Work Opportunities: Setting aside work opportunities to ensure that contractors are trained adequately.
4. Training and mentorship: Training and mentorship by an experienced contractor if possible. This is implemented in projects where experienced contractors are awarded the contract and a portion of the work is given to an emerging contractor.
5. Evaluation and exiting of contractors: When a contractor exits the programme, they are evaluated to see if they have grown and developed whilst in the programme.
6. Monitoring and evaluation: The programme initiator then monitors and evaluates the programme to see if the objectives are being met and to determine the success of the programme. Reporting is conducted provincially and "channelled" to the MECs, HODs, NCDP steering committee and Provincial Contractor Development Forum meetings.

Table 2.13: Number of emerging contractors trained per province

Province	**Type of training**					
	Occupational Health and Safety	Construction Management	Contract Management	Pricing and Tender	Financial Management	NEC
Free State	32	18				
Northern Cape	40		128			
Eastern Cape	27			27		
North West	41				23	
Western Cape	24		20			
Limpopo	16	21				
Mpumalanga		13	29			
Gauteng			22			
KwaZulu-Natal	13		40			

Source: CIDB (2013a:22)

Table 2.13 provides an indication of the various types of training that was undertaken in the CDPs around South Africa from 2012 to 2013. Each province implemented two different types of training with Health and Safety and Contract Management being the two most common types of training conducted. The emphasis on Health and Safety training exists due to the strict legislation that is being enforced around Health and Safety issues. Gauteng had the lowest number of emerging contractors that were trained, whilst the Northern Cape had the highest amount of contractors that were trained. All the CDPs mentioned above focus on activities pertaining to management of emerging contractors. In light of the low barriers of entry into the construction industry that enables anyone to become a contractor, it is surprising that not a single programme focused on the technical aspects pertaining to construction.

Following the implementation of the CDPs, the CIDB conducted a study entitled "*Status Quo Report: SA Contractor Development Programmes"* that looked at the performance of selected CDPs throughout the country. According to the study, "the overall success of CDPs in South Africa is questionable" (CIDB, 2009:i). The study also asserted that "it has been very difficult to obtain quantifiable information on the development of contractors that have been, or are currently, participants on CDPs" (CIDB, 2009:iii).

Some of the major issues impeding the success of the CDPs have been outlined in the *Status Quo Report* and are provided below: -

- Contractor development models need to be tailored to satisfy the requirements of the different grades of contractors;
- Most programmes do not have long, sustainable impacts on contracting companies and have instead become job creation programmes;
- Contractors view gaining access to the programme as gaining access to work opportunities instead of gaining access to training;
- There is no alignment between institutional capacity, business processes and the objectives of CDPs;
- Most CDPs do not have detailed entry level requirements and criteria for contractors;
- Contractors shared little risk in the enterprise development process. From the outset of most programmes, the client held most of the risk and as the project continued gradually passed on some of it onto the contractor;
- Mentoring and training provided to contractors was inconsistent;
- There was little or no support for contractors after they exited the programmes; and
- There was a lack of proper monitoring and evaluation systems to determine the success of programmes.

Ofori (2009:3) identified several challenges associated with the implementation of CDPs. He stated that there are complexities involved with mentoring a large number of contractors, as well as limited resource capacity of the agencies administering the programmes and limited commitment from the emerging contractors. Both CIDB (2009) and Ofori (2009) failed to mention a lack of technical skills as a hindrance to contractors that participated in the programmes.

In 2011, a follow-up study to the *Status Quo Report* was undertaken. The findings of the study yet again indicated that the CDPs were not as successful as anticipated, stating that "overall, most of the programmes have not performed as they had been envisaged for the development of contractors" (CIDB, 2011b:vi). With regard to training and skills development the study stated that "most programmes have struggled to put in place properly structured training and skills development initiatives, mainly due to the lack of funding or skilled personnel for training" (CIDB, 2011:vi).

In light of the challenges associated with the implementation of CDPs in developing countries, the International Labour Office (ILO) developed guidelines for the implementation of CDPs. It suggested that programmes to improve the performance of emerging contractors should include better access to work opportunities, an improved business environment and offer training and advisory services to participants (CIDB, 2011b:8).

CIDB (2011b:11) used past programmes as a benchmark to create several mechanisms that may increase the success of CDPs. These have been listed below: -

1. Ensuring support for the programme by the implementing organisation;
2. Establishing objectives and targets prior to implementing the programme;
3. Monitoring the programme to check if objectives and targets are being achieved and proposing remedial measures where required;
4. Allocating sufficient funds for the programme;
5. Ensuring that there is a sufficient number of skilled and competent people to implement the programme;
6. Integrating activities within the programme;
7. Adequately assessing the needs of contractors prior to the commencement of programmes;
8. Adopting a contractor selection process that only allows candidates who have the potential and prerequisite knowledge to succeed;
9. Clearly defining the target group of contractors;

10. Continuous performance evaluation of the programme and contractors; and
11. Establishing concise programme milestones.

Due to the poor performance of most CDPs, many contractors have failed to establish themselves after exiting the programmes. Although the CIDB has formulated a comprehensive list of factors that may increase the success of CDPs, it seems that very little emphasis has been placed on contractors possessing or gaining technical knowledge. If contractors enter CDPs without any underlying technical knowledge, they cannot be expected to succeed in an industry that requires a comprehensive technical proficiency.

However, it is encouraging to see that CIDB (2011b) has placed an emphasis on skilled and competent people implementing the programmes by stating that well designed CDPs must ensure "that there is a sufficient number of skilled and competent people to implement the programme" (CIDB 2011b:11).

2.12 Critical assessment of CIDB policy in South Africa

The current situation in the construction industry pertaining to the oversupply of unskilled contractors in the lower CIDB grades and the lack of success during CDPs have called into question the policies implemented by the CIDB over the past 15 years.

As shown in Section 2.7 there is a high number of contractors with low CIDB grades. Approximately 95% and 87% of General Building and Civil Engineering contractors respectively, are Grade 1 and 2 contractors. However, despite the large number of contractors in the lower CIDB grades most of the projects being implemented in terms of value are awarded to contractors with high CIDB grades. In terms of project value, more than 84% of General Building and Civil Engineering projects, are being implemented by Contractors in Grade 7-9. Due to the large number of contractors with low CIDB grades and the low volume of projects being implemented in those grades, most of those contractors will never be awarded a project and as a result will never grow and develop their business in the industry. The large number of contractors with low CIDB grades appears to be unsustainable over the long term and is in contradiction with the CIDB strategic objective that states they will "promote sustainable growth of the construction industry and the participation of the emerging sector in the industry" (CIDB, 2011a:11).

The issues highlighted above and in Section 2.7 stems from the CIDB grading system. The current system implemented by the CIDB has very low barriers of entry for aspiring contractors entering the construction industry. The system encourages the emergence of entrepreneurs

and as a result does not stipulate any pre-requisite requirements for entrance into the industry. The low barriers of entry in the industry allows companies to tender for work even if they lack qualifications, skills, experience and finance. Furthermore, the current policy has resulted in the lower CIDB grades of the construction industry being saturated with contractors that have financial, managerial and technical constraints (CIDB, 2012:1). The distribution of projects shown in Table 2.11 and Table 2.12 make it evident that many of the contractors have never obtained work and therefore have failed to increase their CIDB grade.

Management of a construction company entails the planning and execution of construction work, both of which requires specialised skills. These skills can only be acquired by gaining experience in the construction industry and by obtaining a technical qualification in the built environment. Therefore, it is surprising that technical capacity of a contracting company is only assessed when a company applies for a CIDB grade greater than 6. This ultimately enables contractors without a technical qualification to undertake projects up to a value of R13,000,000.00.

A study conducted by Mohlala (2015) showed that projects that are awarded to contractors without a technical background eventually lead to the project having greater time overruns when compared to projects that are awarded to contractors that have a technical background. The failure by the CIDB to implement admission criteria for contractors entering the industry, such as a technical qualification in the built environment, has resulted in a large portion of the industry being unskilled (CIDB, 2012:1).

When assessing the works capability of a contractor for their CIDB grading, the CIDB evaluates the largest project in terms of value that was completed by the contractor. Unfortunately, there are no provisions in place to assess how projects are carried out and if they are completed within the required time and budget. Furthermore, no consideration is given to whether projects completed by a contractor adhere to the required quality standards. All of the foregoing factors provide an insight into whether a contractor has the required skills and resources to complete similar projects.

In terms of contractor development, the CIDBs efforts to assist emerging contractors have not resulted in much success. As mentioned in Section 2.11, CIDB (2009:i) indicated that “the overall success of CDPs in South Africa is questionable”. Whilst CIDB (2011b) asserted that “overall, most of the programmes have not performed as they had been envisaged for the development of contractors” (CIDB, 2011b:vi). The poor performance of CDPs indicate that

the CIDB has failed to achieve one of their strategic objectives that states that they will "determine, establish and promote improved performance of contractors" (CIDB, 2011a:11).

The poor performance of the CDPs also casts doubt over whether the objectives of the CDPs highlighted in Section 2.11 have been achieved. The objectives of the CDPs have been provided below for ease of reference: -

- Improve the grading status of contractors;
- Increase the number of black, women, disabled and youth-owned companies in targeted grades and categories;
- Creating sustainable companies by ensuring continuity of work, therefore creating a platform for sustained employment and skills development;
- Improve performance of contractors in terms of quality, employment practices, skills development, safety, health and the environment; and
- Improve the business management and technical skills of contractors.

Source: CIDB (2011:1)

Based on the information provided in Section 2.7, that showed the skewed distribution of contractors and the distribution of work in the construction industry, it is very unlikely that the CIDB has achieved the objectives set out above. Furthermore, the statement in the *Status Quo Report* that "it has been very difficult to obtain quantifiable information on the development of contractors that have been, or are currently, participants on CDP" (CIDB, 2009:iii) indicates that the CIDB does not have information to verify if the objectives of the CDPs have been achieved.

Based on the evidence provided above, it is apparent that the policies formulated following the inception of the CIDB are questionable. The poor performance of the CDPs and the skewed distribution of the construction industry whereby the vast majority of contractors have low CIDB grades and lack financial, managerial and technical skills (CIDB, 2012:1) show that the current policies are not achieving their desired objectives. In light of the foregoing, it appears that it is time for a new policy to be formulated, that will ensure that the strategic objectives of the CIDB are achieved.

2.13 Management practices for successful construction companies

The construction industry has evolved over the last 20 years. There are far more companies in the industry fighting for market share. To counter modern day challenges such as changing

market conditions, new technologies and increased competition, many companies have implemented strategic management processes.

Croswell and McCutcheon (2001:1) asserted that since the late 1970s significant research has been conducted into the management and operation of small contracting companies. Various studies have found that the use of management principles is imperative to ensure the success of construction companies. Thwala and Phaladi (2009:538) established that a lack of effective management in small and medium-sized construction companies is a major cause of business failure. This lack of effective management can be attributed to owners who manage their businesses to reduce operational costs, but do not have the required skills or time to undertake management duties. The study also found that a lack of financial management; lack of entrepreneurial skills; lack of proper training; lack of resources; lack of technical skills, lack of contractual and managerial skills; late payment for work done which are common with government contracts; inability to get credit from suppliers and fronting for established contractors are also contributing factors that result in the failure of emerging contractors in the North West Province (Thwala and Phaladi, 2009:533-539).

Mofokeng (2012) assessed the causes of failure among small and medium-sized construction companies in the Free State province. The study found that financial factors were amongst the leading causes of company failures (Mofokeng, 2012:213). Furthermore, most companies lacked managerial skills and experienced difficulties with financial management. Mofokeng (2012:220) also stated that economic environmental factors played a role in the success of small and medium-sized construction companies. The study also mentioned that educational qualifications and experience in the construction industry have an effect on a company's success or failure (Mofokeng,2012:214-215).

Ntuli and Allopi (2013) undertook a study to determine the reason for the high level of failure amongst Civil Engineering contractors in the province of KwaZulu-Natal. The study looked at 21 randomly selected companies in KwaZulu-Natal and found that a lack of operational skills, management skills and strategic factors contributed to the high failure rate amongst Civil Engineering contractors.

Aigbavboa and Thwala (2014) investigated the challenges facing black-owned small and medium-sized construction companies in Nelspruit. They found that two of the most critical challenges facing construction SMEs are a lack of managerial skills and a lack of access to work opportunities.

Windapo and Cattell (2011) conducted a study whereby 14 successful General Building and Civil Engineering contractors in South Africa were monitored over a specific period to determine the factors responsible for their growth and success. It was revealed that growth amongst the contractors was typically gradual, steady and organic. The study also found that environmental and organisational factors; management capabilities and the role of the owner were responsible for the growth and success of the companies.

All the aforementioned studies indicate that management factors are critical to ensure the success of construction companies. The management of most emerging contracting companies are undertaken by the owner of the companies. This study will assess the various strategies applied by the management of successful emerging contracting companies to counter the challenges in the construction industry and to achieve growth.

2.14 Strategic management

A strategy is defined as “a comprehensive plan stating how a business will achieve its mission and objectives” (Le Roux, 1998:12). There are three different levels of strategies that may be employed by construction companies, namely corporate, business and functional level strategies (Pearce, Freeman & Robinson, 2003). Hunger and Wheelen (1996) defined strategic management as a collection of managerial decisions and actions that influence the long-term performance of a company. Strategic management, therefore, involves assessing the existing business environment in relation to a company’s current position and formulating strategies that will ensure growth and development of a company when implemented. Strategic management has been used globally to ensure profitability, growth and success of many large multi-national companies (Le Roux, 1998:33).

Porter (1991) postulated that strategy plays an important role in determining whether a company will succeed or fail. Le Roux (1998:7) also suggested that strategic management is the reason why some companies achieve great success whilst others fail.

Gluck, Kaufman and Walleck (1982) stated that strategic management in a company develops in four sequential phases, as defined below: -

Phase 1: Basic financial planning that entails operating and controlling the company according to strict budgetary constraints.
Phase 2: Forecast-based planning that involves predicting future trends, developments in the market and trying to plan according to those trends.

Phase 3: Externally-orientated planning that provides different mechanisms to counter elements in the market and competition from other companies.
Phase 4: Strategic management that attempts to develop the company and create a competitive advantage, which leads to long-term growth and development of the business.

Studies have found that strategic management processes in small companies should be less formal than those utilised in larger companies (Thomas, 1989:331-336). SMEs should not focus on structured, written plans as these may be "dysfunctional" to their companies and inhibit the flexibility that is required for success of these companies (Le Roux, 1998:18). Scarborough and Zimmerer (1993) opined that small companies cannot be considered as big companies when applying a strategic management approach. Therefore, adopting a big business strategic management approach for a small business would be an error. This is particularly relevant when assessing the use of strategic management amongst emerging contractors. The formulation and implementation of small scale strategies is a critical component of the strategic management process and is employed by many successful SMEs in various sectors of the economy. An overview of corporate, business and functional level strategies are outlined below.

2.14.1 Corporate strategy

Corporate strategy determines the type of business approach a company should adopt and how business activities should be structured to maximise long-term profitability and growth (Appels, 2010:59). Corporate strategies amongst emerging contractors are implemented using three main techniques, namely diversification, vertical integration and sub-contracting.

- Sub-Contracting

Sub-contracting allows emerging contractors to grow and enhance their skills whilst working for a main contractor. Generally in a sub-contracting arrangement, a contract is formed between the client and main contractor, thereafter the main contractor forms a contract with the sub-contractor to undertake a portion of the overall scope of work. The main contractor is entitled to appoint any sub-contractor, unless the contract dictates the requirements pertaining to the sub-contractor appointment. The sub-contracting process allows sub-contractors to bypass very competitive bidding procedures. Notwithstanding the appointment of a sub-contractor, the main contractor carries the overall responsibility to ensure that the project is completed within the required time and quality. In this regard, the main contractor maintains most of the risk. The sub-contractor benefits by getting exposure and performing work on the project without carrying significant risk. Some of the challenges related to a sub-contracting

arrangement include firstly, poorly defined contracts that negatively affect the sub-contractor and secondly, payment only being effected once the main contractor has been paid.

- Diversification

Diversification entails growing a company by entering a different market. Emerging contractors usually diversify into other markets within the construction industry. This allows the contractor to utilise their current resources for their new business. Diversification limits a company's dependence on the construction industry and facilitates increased growth (Appels, 2010:61).

- Vertical Integration

Vetical integration allows a company to decrease their dependence on suppliers (Appels, 2010:61). Vertical integration enables a company to procure materials and other supplies from within their company, thereby reducing costs of the product. Typically, most emerging contractors will only have the ability to vertically integrate once they become a large company and have the capacity within their company to produce materials.

2.14.2 Business level strategy

A business level strategy is developed to define how a company will compete in the industry that they operate (Pearce, Freeman & Robinson, 1987). The strategy is used to develop a competitive advantage and emphasise a company's competitive position.

Business level strategies are adopted from generic strategies. The three widely used business strategies are the cost-leadership strategy, differentiation strategy and the focus strategy (Dess, Lumpkin & Eisner, 2010).

- Cost Leadership

In the construction industry, providing a service for a low, sustainable price is imperative to getting awarded projects. Although allocation of projects is at the discretion of clients, most clients evaluate tenders, using price as the deciding factor. Cost leadership entails providing a service at a cost lower than other companies, which results in a competitive advantage.

Construction companies can reduce their costs in several ways, such as comparing prices of different supliers before procuring materials to ensure that they receive the lowest price; having productive labour on site; and owning plant and equipment. Quoting excessively low prices has become commonplace in the industry and is done to ensure that companies are awarded projects. Many contractors choose to take calculated risks and quote very low prices with the hope of being awarded a project and thereafter aim for large profit margins on variation

orders carried out during the project. This strategy is very dangerous, as it assumes that there will be a substantial amount of variation orders during the project.

- Differentiation

The purpose of utilising a differentiation strategy is to make a product less price sensitive. By having a product that is disparate from competitors in the industry, clients are generally paying for that specific product and therefore price sensitivity is not an issue since the product is in demand. It is very difficult to employ a differentiation strategy in the construction industry, as most construction activities involve a standardised process. Differentiation strategies may be employed by offering additional services or specialist products that are not offered by other companies. Differentiation strategies are difficult to maintain, as specialised products and services are easily imitated once discovered (Appels, 2010:64).

- Focus Strategy

A focus strategy is often referred to as a niche strategy and consists of a company finding a niche market within the construction industry to operate. A niche strategy can be very effective, provided that a detailed analysis of the niche market is undertaken to determine whether it is worth entering. If potential exists in the market, then it is worth exploring. Hernandez (2008) found that employing a niche strategy for construction companies can be successful. Due to the increased competition in the construction industry, employing a niche strategy may be an astute decision, especially if the niche market requires specialist services that are offered by few companies.

2.14.3 Functional level strategy

The functional level strategy is related to the functional areas of the business. Specific functional level strategies include marketing and human resource strategies.

- Marketing Strategy

The marketing strategy is the leading strategy that is employed by companies in various industries. The ability to effectively market a company is critical to ensure that the company is recognised in the industry and amongst client bodies.

Marketing Mix

- Product: Ensuring that the final deliverable is a good quality that makes clients want to use the company again.

- Price: Having a quality product that is economical and cost effective or value for money .
- Place: Ensuring that the company is able to undertake work in various locations.
- Promotion: Marketing the company at industry events to ensure the company is given exposure to various client bodies. Promotion of a company is also dependent on the track record of a company. It is very difficult for a company with a limited track record to obtain quality exposure, when they have no projects that showcase their capabilities.

- Human Resource Strategy

Human resource strategies are a critical component of operating a successful construction company. The success of a construction company is dependent on the people and skills within the company. Typical human resource strategies involve the recruitment of skilled personnel and training of people. Most construction activities can be taught, using various training mechanisms. As a result, it is important to equip workers with appropriate and adequate training to ensure that continuous skills development occurs. Equipping employees with adequate skills will also assist in producing a quality product.

Source: Appels (2010:66-72)

2.15 The importance of technical capacity in the construction industry

Although strategic management is a useful tool and has the potential to benefit SMEs, it cannot be specified as a prerequisite for the success of SMEs (Le Roux, 1998:65). Technical qualifications form the basis of a contractor's knowledge. Unfortunately, the CIDB only addresses the lack of skills and technical capacity in the industry in passing, in one of their strategic objectives, which states that they will "improve the infrastructure delivery skills and management practices in the construction industry" (CIDB, 2011a:18).

The management of construction companies has been extensively studied, with various researchers examining the correlation between management and the failure of companies. Very few studies have examined the relationship between technical competence and the success of construction companies.

Aigbavboa and Thwala (2014) conducted a study that examined 45 contractors in the Mbombela municipality that had CIDB grades between 1 and 4. The study found that only 20% of the respondents had a built environment degree or qualification. It also found that one of

the main reasons why contractors were unable to increase their CIDB grade was because they did not possess the required technical skills.

Previous studies conducted by the CIDB and various other researchers placed major emphasis on the poor management skills of emerging contractors as the reason for their failure. However, a potentially critical component that is overlooked in these studies is the technical capacity within companies. Most of the contractors that fail in the industry do not have the suitable technical capacity to undertake projects. Mohlala (2015) showed that contractors with technical qualifications completed projects quicker than those without. The study conducted by Mohlala (2015) exhibits the importance of a contractor having a technical qualification. Wiklund and Sheperd (2003) stated that business managers who are educated are more likely to manage faster-growing small businesses than those who are less educated (Windapo & Cattell, 2011:15).

Research conducted by Croswell and McCutcheon (2001) highlighted the need for the improvement of technical capacity amongst small contractors. Croswell and McCutcheon (2001) proposed a programme approach that included a linked training programme, which caters for comprehensive technical training, and will facilitate the development of small contractors. The findings by Croswell and McCutcheon (2001) were based on previous successful labour intensive programmes carried out in Botswana and Kenya during the late 1980's (Croswell and McCutcheon, 2001).

All construction projects require a contractor to be familiar with technical aspects such as preparation of a programme of works, being able to read and comprehend construction drawings and having the ability to quantify the amount of work that has been completed when payment certificates need to be prepared. Contractors that do not have an underlying technical knowledge should employ suitably qualified staff with these skills. Projects that are undertaken by contractors that do not have the required technical capacity will experience problems. Unfortunately, emerging contractors often operate with restricted budgets for hiring qualified staff, which immediately presents a challenge for these companies.

In light of the limited research pertaining to the technical capacity of contractors, this study will critically assess the technical capacity of successful emerging General Building and Civil Engineering contractors in Gauteng.

2.16 Findings of Literature Review and impact on study

2.16.1 Major findings from literature review

- The major challenges in the construction industry, such as the lack of skills, financial constraints, intense competition and the short-term cyclical nature of work are detrimental to the growth and development of emerging contractors. If contractors are unable to grow and develop, then they will never have the capacity to undertake larger projects.

- In order for contractors to increase their CIDB grade, they need to demonstrate that they have the necessary works capability and generate sufficient turnover. Lack of technical skills, inconsistent work opportunities and financial constraints are factors that prevent contractors from increasing their CIDB grades. Contractors that are unable to undertake profitable projects to generate income will never increase their CIDB grade and therefore stagnate in the industry. Similarly, if a contractor does have a project, but is unable to generate sufficient cash flow, the project and business will both suffer.

- The implementation of CDPs was "a deliberate and managed process to achieve targeted developmental outcomes that improve contractor grading status, performance, quality, equity and targeted ownership" (CIDB, 2011:3). Unfortunately, the outcomes of these programmes have not been as successful as envisaged. In 2009, an assessment of selected CDPs around the country was documented by the CIDB in a report entitled *Status Quo Report: SA Contractor Development Programmes*. The report found that "the overall success of CDPs is somewhat questionable" (CIDB,2009:i). Two years later in 2011, the CIDB undertook a follow-up study entitled *Baseline Study of Provincial Contractor Development Programmes*. Yet again, this study found that "overall, most of the programmes have not performed as they envisaged in the development of contractors" (CIDB, 2011b:vi).

- The two main criteria used to assess a contractor applying for a CIDB grade are financial and works capability. There are no minimum requirements pertaining to the technical capacity of a contractor. The technical capacity of contractors is only assessed when a contractor applies for a CIDB Grade 7 and higher. The low barriers of entry into the construction industry that allows anybody to become a contractor have resulted in an oversupply of unskilled contractors within the low CIDB grades. This has

resulted in increased competition amongst contractors in those grades and many failed businesses.

- Strategic management is an important tool that can assist in creating a successful company. Le Roux (1998:7) suggested that strategic management is the reason why some companies achieve great success, whilst others fail in the economy. There are various business, corporate and functional level strategies that can be employed by emerging contractors in the construction industry.

- Most of the studies into the challenges facing contractors in the construction industry focus on the financial and managerial aspects of contractors. Many studies, such as those conducted by Mofokeng (2012), Ntuli and Allopi (2013), and Aigbavboa and Thwala (2014), have found that contractors have failed because of a lack of proper management systems and poor financial management. Limited research has been conducted into the technical capacity of construction companies and the correlation with success or failure of the business.

2.16.2 Implications on study

- The major challenges prevalent in the construction industry that prevent emerging contractors from increasing their CIDB grade include a lack of technical capacity, inconsistent work opportunities and financial constraints. The structured interviews will be used to confirm if the challenges identified in the literature review have affected the respondents in this study. Further research into additional challenges faced by emerging contractors trying to increase their CIDB grade is not explored in this study, since the literature review has produced a comprehensive list of challenges.

- The various strategies identified in the literature review are investigated further during the structured interviews. The structured interviews are used to identify the strategies implemented by successful emerging contractors in Gauteng.

- Since limited research has been conducted on the technical capacity of construction companies, this study assesses the correlation between technical capability and the success of emerging contracting companies.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

Kothari (2004:8) defines research methodology as “a way to systematically solve the research problem”. This chapter outlines the research methodology that was utilised during this study. The research philosophy, design, sampling method and data analysis technique have been detailed to show the process that was followed in obtaining the results for this study. The way the research was controlled to ensure the validity and reliability of data has also been defined.

3.2 Research Philosophy

The underlying philosophical background of the research will be discussed before the research methodology is outlined. The two prominent research philosophies used in construction management research are positivism and interpretivism. Positivism asserts “that there are observable facts which can be observed and measured by an observer, who remains uninfluenced by the observation and measurement” (Fellows and Liu, 2008:17). Whilst Saunders, Lewis and Thornhill (2009:116) state that when undertaking an interpretivist philosophy, the researcher must adopt an empathetic stance toward the research subjects and understand the world from their viewpoint. Furthermore, interpretivism emphasises the difference between conducting research among people as opposed to objects (Saunders, Lewis and Thornhill, 2009:116).

Fellows and Liu (2008:69) have asserted that historically positivism and quantitative research methods have been the primary method of conducting research pertaining to construction management. However, the importance of an interpretivist study should not be understated as it provides “complementary insights and enriching understanding of those who work in the sector” (Dainty, 2008:1). Chau, Raftery and Walker (1998) support this viewpoint stating that the interpretive approach has the ability to identify problems in the construction management field and construction industry based on the experience of people working in the industry.

For this study both the positivist and interpretivist philosophy was utilised. The positivist philosophy was employed to determine the strategies used by successful contractors and to determine the link between technical qualifications and success in the construction industry. The strategies used by successful contractors were identified during the literature review thereafter, the questionnaire sought to confirm if the strategies identified in the literature review were utilised by successful contractors. The link between technical qualifications and success in the construction industry also entailed querying the successful emerging contractors about

their technical competence. The intention was to determine the percentage of the sample of successful emerging contractors that had some form of technical capacity within their companies. In both cases above, the Author utilised the positivist philosophy as there were observable facts that were outlined during the literature review which the Author sought to confirm using the questionnaire. Measurement was undertaken by quantifying the portion of the sample of successful emerging contractors that implemented specific strategies and had some form of technical capacity within their companies.

The interpretivist philosophy was utilised to identify the challenges facing contractors when increasing their CIDB grade and to determine if government's interventions in assisting emerging contractors have been successful. In understanding the challenges facing emerging contractors, the Author had to assess the problem from the perspective of the contractor to gain a better appreciation of the challenges in the industry. Similarly, when determining the effectiveness of government in assisting emerging contractors the Author had to place himself in the position of the contractor to understand if the stated outcomes of the various interventions were beneficial to the contractors. Both approaches mentioned above are interpretivist in their nature.

3.3 Quantitative and Qualitative Methodology

Chau, Raftery and Walker (1998:104) state that there is no single research methodology in the construction management field that is a panacea. Both qualitative and quantitative fields have a contribution to make depending on the following: -

- The existing body of knowledge;
- The objectives and perspectives of the research; and
- The quality of available data.

Source: Chau, Raftery and Walker (1998:104)

"A quantitative research method involves a numeric or statistical approach to research design" (Williams, 2007:66). Leedy and Ormrod (2001) asserted that the intent of quantitative research is to "establish, confirm, or validate relationships and to develop generalizations that contribute to theory" (Leedy and Ormrod, 2001:102).

Qualitative research involves "purposeful describing, explaining, and interpreting collected data" (Williams, 2007:67). Wilson and Sharples (2015:120) state that little or no numerical data or statistical analysis is used in qualitative research.

A qualitative methodology is utilised for this study because of the difficulties encountered to find a reliable quantitative database that addresses the research questions and objectives. Most databases that exist do not have the required information and consist of a mixed sample of successful and unsuccessful contractors. By using a qualitative approach the Author was able “construct” a database of successful emerging contractors based on predefined criteria. The database of successful emerging contractors was used by the Author to answer the research questions.

The lack of existing information and studies on successful contractors in South Africa also played a major role in selecting the qualitative methodology. Most of the literature reviewed focuses on contractor failure and challenges facing contractors. The qualitative methodology allowed the Author to engage directly with the successful contractors on the aspects of technical capacity and strategies utilised for success in the construction industry. Furthermore, it enabled he Author to tailor the structured interviews to address the specific research objectives and questions.

3.4 Research Design

3.4.1 Literature Review

A thorough literature review was conducted to establish the existing research pertaining to challenges facing emerging contractors, strategies employed by successful contractors, the role of the CIDB in South Africa, the success of programmes implemented by the CIDB and the importance of technical capacity in the construction industry.

Information gathered during the literature review pertaining to the technical capacity of contractors, challenges faced by contractors and the strategies used by successful contractors informed the formulation of the questionnaire.

3.4.2 Questionnaire & Structured Interview

The research instrument that was initially going to be used in this study was a questionnaire. The questionnaire comprised of a combination of open ended and closed questions. Price (2009:44) defines the questionnaire as a method to gather information related to the opinions of a group of people. An open-ended question allows respondents to answer questions in their own words and most importantly elaborate wherever necessary. A closed question is usually answered with a single word or short phrase.

The Author used closed questions to establish the technical capacity of the respondents whilst the open-ended questions were used to understand the various strategies used by successful contractors. The open-ended questions allowed the respondents to elaborate on their answers and gave the Author the opportunity to extract as much information as possible. The questions were divided into four sections namely company profile, technical capacity, strategic management and the challenges faced by contractors.

Due to the lack of responses to the questionnaire, the Author was forced to conduct structured telephonic interviews. Bell and Bryman (2007:474) states the main function of an interview is to validate facts that have already been established. This is done using a list of questions that have been prepared on a specific topic. The Author used the questionnaire as the basis for the interviews. The interviews were the primary form of data collection.

3.4.3 Research Limitations

The research was limited to emerging General Building and Civil Engineering contractors in the Province of Gauteng. Contractors were carefully screened against pre-defined criteria, using the CIDB RoC during the sampling phase. This was to ensure that only successful emerging contractors were selected for this study. There were also time limitations as the Author had to complete the study within a period of 1 year.

3.4.4 Comments on interviews

Although only 10 out of 30 contractors chose to participate in the study, the interview process was deemed to be successful. Valuable information and personal experience of the industry was derived from each of the respondents during the interview process. All respondents were informed that their information would be used in this study.

3.4.5 Population

A population is defined as the total of all subjects that conform to a set of specifications (Polit and Hungler, 1993: 43). Burns and Grove (2003:213) further define a population as all elements that satisfy the criteria for inclusion in a study. For this study, the Author established a population of successful emerging contractors from the CIDB database. The population of successful emerging contractors was “constructed” by defining various criteria to identify successful emerging contractors. The population of successful emerging contractors was essentially a homogenous population due to the various screening criteria used to “construct” the population. A homogenous population is utilised “when the goal of the research is to

understand and describe a particular group in depth" (Cohen and Crabtree, 2006). In this case, the Author wanted an in depth understanding of successful emerging General Building and Civil Engineering contractors in Gauteng.

To create the homogenous population of successful emerging contractors, the contractors on the CIDB RoC were screened various criteria to determine if they were successful. The criteria used to screen the contractors have been listed below: -

- The contractor must possess an active CIDB registration;
- The contractor must be operating for a minimum period of 5 years. Argenti (1976) stated that more than 50% of firms that failed were less than five years old. This finding was reinforced by Croswell and McCutcheon (2001:3) who found that internationally 75 percent of small businesses fail within three years. In light of the two aforementioned findings, contractors operating for a minimum of five years was deemed as an appropriate threshold;
- The contractor must have increased their CIDB grading by a minimum of 3 grades. An increase of at least 3 CIDB grades was stated in research by Windapo and Cattell (2011:6) to define a successful company;
- The contractor must be registered as potentially emerging;
- The contractor must be located within Gauteng;
- The contractor must have either a GB or CE registration; and
- The contractor must have commenced with a CIDB Grade 4, 5 or 6. Most of the municipal infrastructure projects are undertaken by contractors with CIDB grades between 4 and 6. In 2015, approximately 71 % and 41% of the public-sector projects implemented nationally were undertaken by contractors with a CIDB Grade from 4 to 6. Therefore, contractors within that range of CIDB grades were chosen. The contractors in grade 4, 5 and 6 make up approximately 6% of the RoC

3.4.6 Sampling

Babbie (2005:202) states that the purpose of sampling is to select a set of elements from a population in such a way that descriptions of those elements accurately portray the total population from which the elements were selected. Fellows and Liu (2008:159) provides a similar understanding of sampling stating that "the objective of sampling is to provide a

practical means of enabling the data collection and processing components of research to be carried out whilst ensuring that the sample provides a good representation of the population".

The following sampling procedures are presented by Fellows and Liu (2008:160-162): -

- **Random Sampling:** Random sampling is a sampling procedure where each member of the population has an equal chance of being selected. The process entails a random selection of a member from the population. Thereafter, the member selected, is excluded from re-selection which ensures that each member of the population is only selected once.
- **Systematic Sampling:** Systematic sampling is a sampling procedure that involves sampling a population at intervals. The intervals between each sample is kept constant and decided by the researcher.
- **Stratified Sampling:** Stratified sampling is a sampling procedure that is used for a stratified population. A stratified population involves the Author dividing the population into certain groups called strata. The members that are sampled are selected randomly from each stratum.
- **Cluster or Area Sampling:** A sampling procedure whereby groups of a large population called clusters are selected randomly and sampled.

Due to the homogenous nature of the population, the Author deemed that a random sampling method would be representative of the population. Furthermore, Engel and Schutt (2014:98) state that "the more homogenous the population, the more confidence we can have in the representativeness of a sample of any particular size". In light of the foregoing, a random sampling procedure was utilised. The short duration to conduct the study also influenced the decision to use a random sampling technique.

3.4.7 Reliability and Validity

3.4.7.1 Reliability

Joppe (2000:1) defines reliability as "the extent which results are consistent over time and an accurate representation of the total population under study" and "if the results of a study can be reproduced under a similar methodology". The reliability in this study was ensured in two stages. The first stage involved ensuring that only successful emerging contractors were included in the study. This was undertaken by "constructing" a database of successful emerging contractors using various selection criteria which ensured only successful

contractors were included in the population. Using this process there would be no doubt that the results generated in the study originated from successful emerging contractors.

The second stage involved ensuring the reliability of data obtained during the interview process. Reliability during the interviews was ensured by only interviewing the owners of the various companies. The owners of the companies were interviewed because they have first-hand knowledge of the technical capacity within their companies, what it takes to make a company successful and the various challenges associated with establishing a construction company. In light of the above, the results from the interviews were deemed as an accurate reflection of each successful contracting company.

Based on the homogenous nature of the population, if the study is undertaken again by another researcher that uses the same population, the results obtained will be similar to the results in this study therefore, the results generated in this study are deemed to be reliable.

3.4.7.2 Validity

Kothari (2004:73) asserted that validity is the extent that a test measures what we require it to measure. Golafshani (2003:602) states that “some qualitative researchers have argued that the term validity is not applicable to qualitative research” although they have recognised that some form of qualifying checks are required. Wilson and Sharples (2015:131) discuss internal and external validity of research. Internal validity refers to the “credibility and trustworthiness” of the research whilst external validity refers to the “generalisability and transferability”

The Author has deemed the study to be both internally and externally valid. Although a relatively small sample was used for the study, the outcomes from the interviews are viewed as credible as they strongly relate to the findings in the literature review. In terms of generalisability, due to the homogenous nature of the population the results should be generalisable with other successful emerging contractors in Gauteng with a CIDB grade 4-6. However, if the research is to be generalised on a national scale or amongst other CIDB grades then further samples of successful contractors from the various provinces and other CIDB grades should be taken.

Wilson and Sharples (2015:133) define triangulation as a method to establish internal and external validity by using “more than one data source, method or investigator and the convergence of these to add credibility to the study”. Patton (1999:1195) outlines a method for triangulation of data sources which entails comparing observational data with data derived during interviews. In this study, information collected during the interviews was collated and

compared with the findings of the literature review as well as the Authors own personal experience in the field of study. The Author found that the responses from the different contractors during the interviews were fairly consistent with each other, various literature and the Author's personal experience in construction industry. Therefore, the data collected from the interviews were deemed to be valid.

3.4.8 Data Analysis

The data analysis was undertaken using a technique called content analysis. Content analysis study is defined as "a detailed and systematic examination of the contents of a particular body of materials for the purpose of identifying patterns, themes, or biases" (Leedy and Ormrod, 2001:155). Wilson and Sharples (2015:120) states that although content analysis is a qualitative research technique it contains both qualitative and quantitative elements. The quantitative component entails establishing categories and counting the number of instances that fall into each category. The qualitative aspect is used to understand the various categories. Hsieh and Shannon (2005:1279) state the advantage of using content analysis involves "gaining direct information from study participants without imposing preconceived categories or theoretical perspectives".

Content analysis was used to analyse the data generated from the interviews. The data from the interviews were collated, analysed, categorised and tabulated to facilitate the analysis and the interpretation of results. The data was then presented on bar graphs which enabled the Author to identify trends.

3.4.9 Ethical Considerations

Prior to the interviews, the respondents were advised that none of their names would be printed in this research report and that all data would only be used for analytical purposes. Therefore, the names of the respondents and the companies that participated in the interviews have been omitted from the report.

CHAPTER 4: RESEARCH RESULTS

4.1 Introduction

In this chapter, the results from the structured interviews and analysis of these results are presented in the form of tables and bar graphs. The structured interviews that were undertaken comprised of three phases. The first phase was used to determine the technical capacity in the company, the second phase was used to identify strategies employed by successful emerging contractors to counter challenges in the industry and the third phase was to assess if the challenges identified in the literautre review were prevalent amongst the contractors interviewed.

The questionnaire was designed to provide answers to the three secondary research questions are provided below for ease of reference:

Research Question 1: What are the challenges that emerging contractors face when they try to improve their CIDB grade?

Research Question 2: What strategies are used by successful contractors to counter the challenges in the construction industry?

Research Question 3: Is technical capacity a fundamental requirement for a construction company to become successful?

A consolidated assessment of the literature review and the response to the three secondary research questions, assisted in answering to the primary research question that has been provided below for ease of reference:

- Why are there so few successful emerging contractors in South Africa?

4.2 Overview of successful contractors

The CIDB was approached to provide a list of all the contractors that were considered to be successful as per the criteria outlined by the Author in the research methodology. The CIDB provided a list with a total of 95 potentially emerging successful contractors, 30 contractors from the list were from the Gauteng area. Table 4.1 provides a breakdown of the number of successful emerging contractors per province. Gauteng and KwaZulu-Natal produced the highest number of successful contractors with each province contributing 30 and 25 contractors, respectively. The two provinces combined account for approximately 58% of the successful contractors in South Africa. The Northern Cape and Western Cape have produced

the lowest number of successful contractors, with each province contributing 1 and 2 contractors, respectively.

Table 4.1: Distribution of successful emerging Civil Engineering and General Building contractors per province

Province	Number of Successful Contractors
Gauteng	30
KwaZulu-Natal	25
Limpopo	14
Mpumalanga	12
Eastern Cape	5
Free State	3
North West	3
Western Cape	2
Northern Cape	1

Table 4.2 shows the number of CIDB upgrades attained by contractors nationally and in Gauteng. No contractor increased their CIDB grade on more than 4 occassions.

Table 4.2: Successful emerging Civil Engineering and General Building contractors in South Africa and Gauteng

National	
Number of Contractors	**Number of Upgrades**
6	4
89	3
Gauteng	
3	4
27	3

Source: CIDB (2014a)

All 30 contractors in the Gauteng area were approached to participate in the structured interviews. 10 Contractors responded and participated in the structured interviews, which were conducted via telephone. This resulted in an overall response rate of 33%.

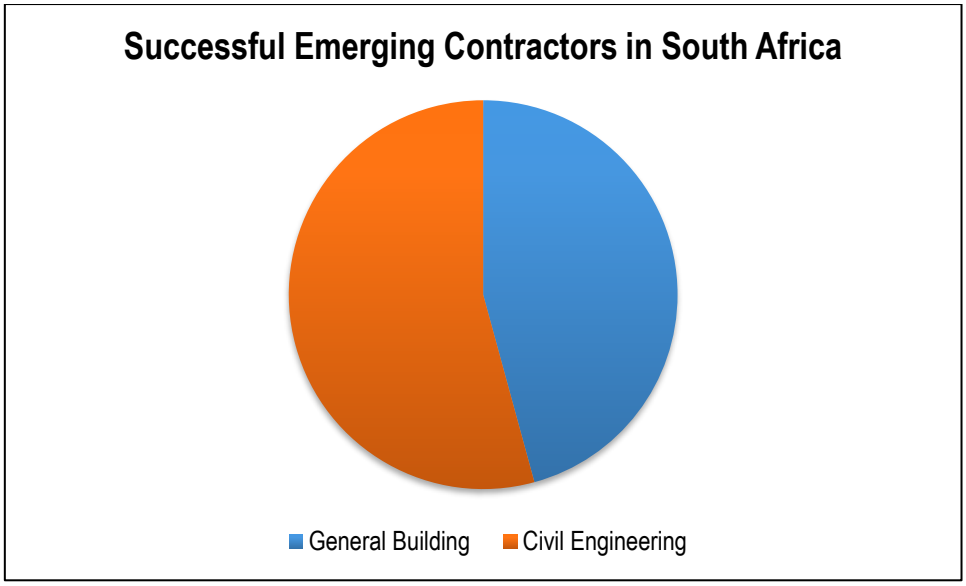


Figure 4.1: Successful Emerging General Building and Civil Engineering Contractors in South Africa

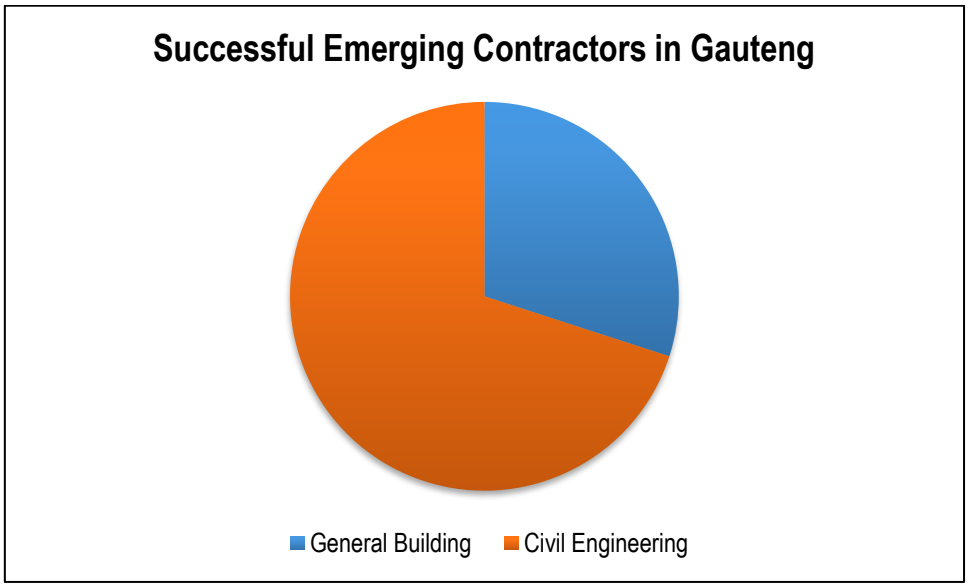


Figure 4.2: Successful Emerging General Building and Civil Engineering Contractors in Gauteng

The study focused on Civil Engineering and General Building emerging contractors that commenced with a CIDB Grade of 4, 5 or 6. The contractors in this segment of the CIDB RoC account for approximately 6% of contractors at a national level. The pie charts illustrated in Figure 4.1 and Figure 4.2 indicates that the number of successful Civil Engineering emerging contractors is slightly greater than the number of successful General Building emerging contractors at both a national and provincial level. Both Figure 4.1 and Figure 4.2 are indicative of the total number of successful emerging contractors in South Africa and Gauteng, respectively. They are not limited to the respondents that participated in the structured interviews. Figure 4.1 reflects the sample of successful emerging contractors in South Africa

that consists of approximately 54% Civil Engineering contractors and 46% General Building contractors. Figure 4.2 shows that from the sample of successful emerging contractors in Gauteng, approximately 70% are Civil Engineering contractors whilst the remaining 30% are General Building contractors.

Table 4.3 and Table 4.4 show the growth experienced by the General Building and Civil Engineering contractors that participated in the study.

Table 4.3: Growth of General Building Emerging Contractors in Gauteng

Contractor No.	Years spent in each CIDB grade					Total Years
	Grade 4-5 (years)	Grade 5-6 (years)	Grade 6-7 (years)	Grade 7-8 (years)	Grade 8-9 (years)	
1	2		2	1	2	7
2		3		1	6	10
3	2	1		5		8
4	4			2		6
5	3	2	1	2		8

Table 4.4: Growth of Civil Engineering Emerging Contractors in Gauteng

Contractor No.	Years spent in each CIDB grade					Total Years
	Grade 4-5 (years)	Grade 5-6 (years)	Grade 6-7 (years)	Grade 7-8 (years)	Grade 8-9 (years)	
6		1	2	4		7
7	1		4	3		8
8	1	2	3	2		8
9	3		3	2		8
10	3		3	2		8

Table 4.3 illustrates that on average, it takes a General Building contractor a minimum of 2 years to move up one CIDB grade once a company has been established. Most of the contractors took a minimum of four years to attain three CIDB upgrades.

Table 4.4 shows that on average, it takes a Civil Engineering contractor a minimum of 1 year to move up one CIDB grade once a company has been established. It appears that most Civil Engineering contractors spend at least three years between Grade 6 and 7 before they increase their CIDB grade.

4.3 Results from structured interviews

Table 4.5 and Figure 4.3 reflects the initial CIDB grade of contractors who participated in the study. The initial CIDB grades were an important aspect because the study only focused on contractors that commenced with a CIDB grade between 4 and 6. All contractors that participated in this study had an initial CIDB Grade between 4 and 5. Eighty percent (80%) of the respondents had an initial CIDB Grade 4, whilst twenty percent (20%) of respondents had an initial CIDB Grade 5.

Table 4.5: Initial CIDB grade of contractors

	Grade 4	Grade 5
Number of contractors	8	2
Percentage (%)	80	20

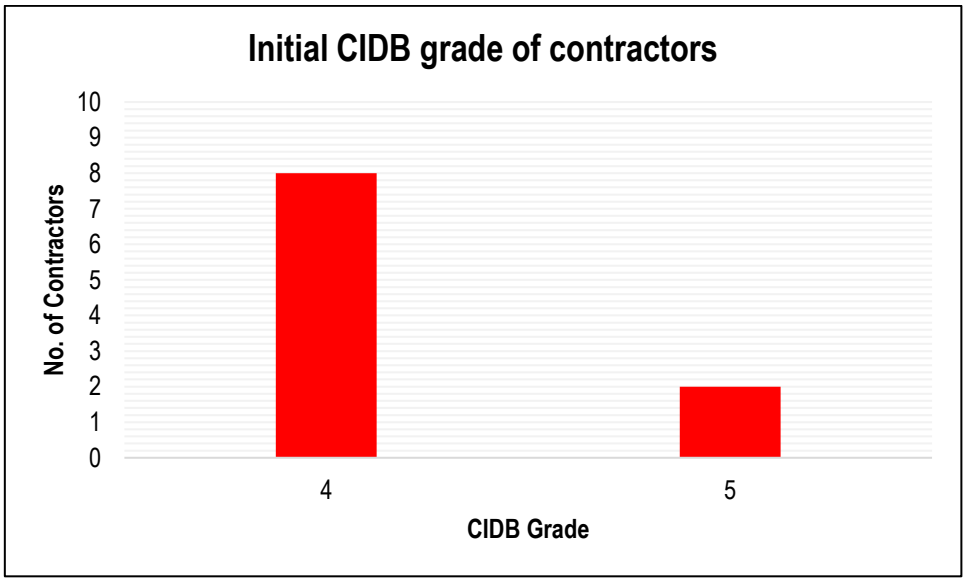


Figure 4.3: Initial CIDB grade of contractors

Table 4.6 and Figure 4.4 shows the number of CIDB upgrades obtained by the contractors in the study. The number of CIDB upgrades is a good indication of the level of success that a company has attained. During the study, it was found that 9 of the respondents increased their CIDB grade 3 times, whilst only one of the contractors increased their CIDB grade on 4 occasions. It is interesting to note that only ten percent (10%) of the population of successful contractors nationally have increased their CIDB grade on more than 3 occasions. This indicates that it is difficult for a contractor to upgrade by more than 3 CIDB grades.

Table 4.6: Number of CIDB upgrades by contractors

	3 Upgrades	4 Upgrades
Number of contractors	9	1
Percentage (%)	90	10

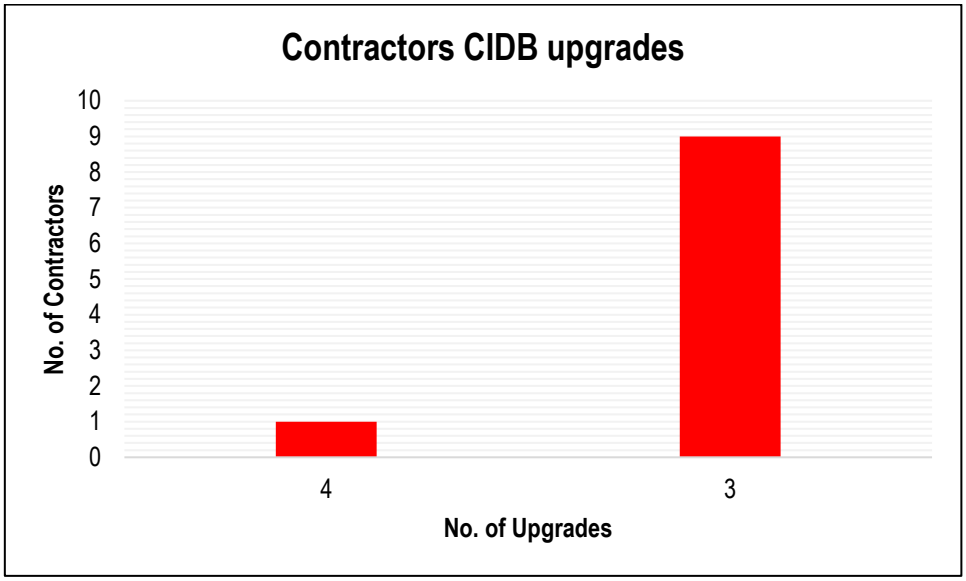


Figure 4.4: Number of CIDB upgrades obtained by contractors

Table 4.7 and Figure 4.5 shows the amount of experience the respondents had in the construction industry when they established their company. Generally, having sufficient experience would be one of the prerequisites before forming a company, as the business owners would understand the market within which they operate. However, eighty percent (80%) of the respondents in the study only had between 0 and 5 years' experience in the construction industry when starting their companies. This indicates that most of the respondents had limited experience in the industry when establishing their company. However, this did not stop them from making their businesses a success.

Table 4.7: Experience in the construction industry when establishing the company

	0-5 years	6-10 years
Number of contractors	8	2
Percentage (%)	80	20

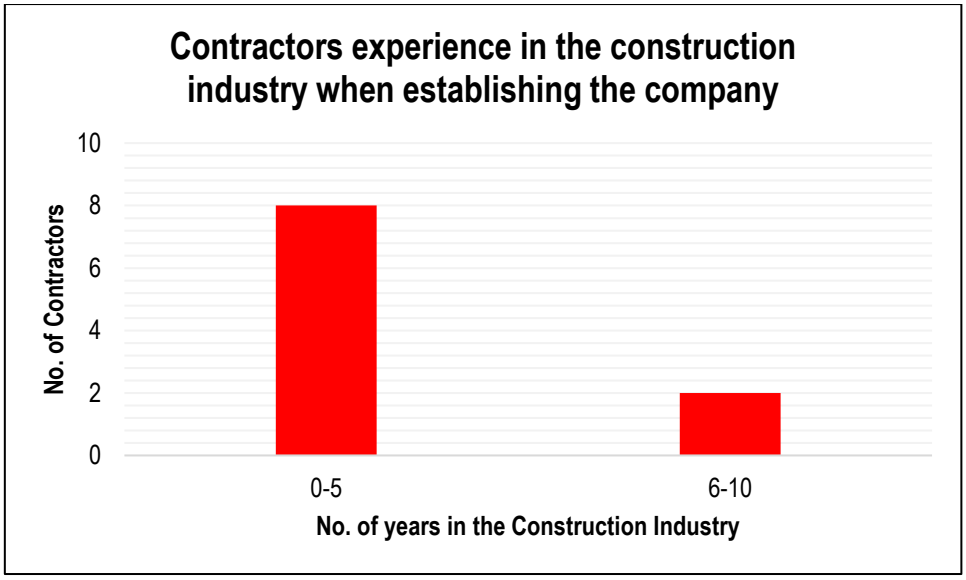


Figure 4.5: Contractors experience in the construction industry when establishing the company

Table 4.8 and Figure 4.6 shows the educational background of the respondents when they established their companies. A technical qualification coupled with experience in the construction industry is the minimum requirement to be a director of any major construction company in South Africa. A brief survey into the "Big Five" construction companies in South Africa that consist of Group Five, Murray & Roberts, Basil Read, WBHO and Aveng, indicate that all the senior directors have a technical qualification and extensive experience in the industry. In this study, a technical qualification is defined as a person having a degree or diploma in the built environment. Table 4.8 shows that forty percent (40%) of the respondents had a technical degree/diploma when starting their company. All respondents had a minimum educational background of Grade 12.

Table 4.8: Highest academic qualification when starting the company

	Grade 12	Post matric qualification	Technical degree/ diploma
Number of contractors	3	3	4
Percentage (%)	30	30	40

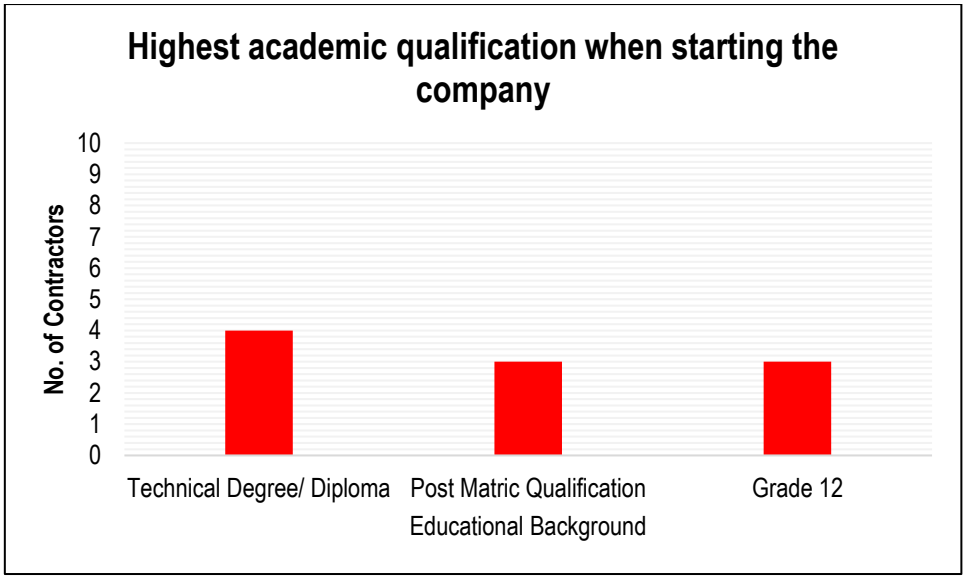


Figure 4.6: Owners educational background when establishing the company

Table 4.9 and Figure 4.7 illustrates the composition of technical staff amongst the respondents. All respondents indicated that they employed technical staff. Fifty percent (50%) of respondents employed between fifty (50) and seventy five percent (75%) technical staff. From the 6 companies, whose director did not have a technical degree or qualification, 3 had a technical staff component of more than thirty percent (30%).

Table 4.9: Composition of technical staff

	0-25%	26-50%	51-75%	76-100%
Number of contractors	4	1	5	0
Percentage (%)	40	10	50	0

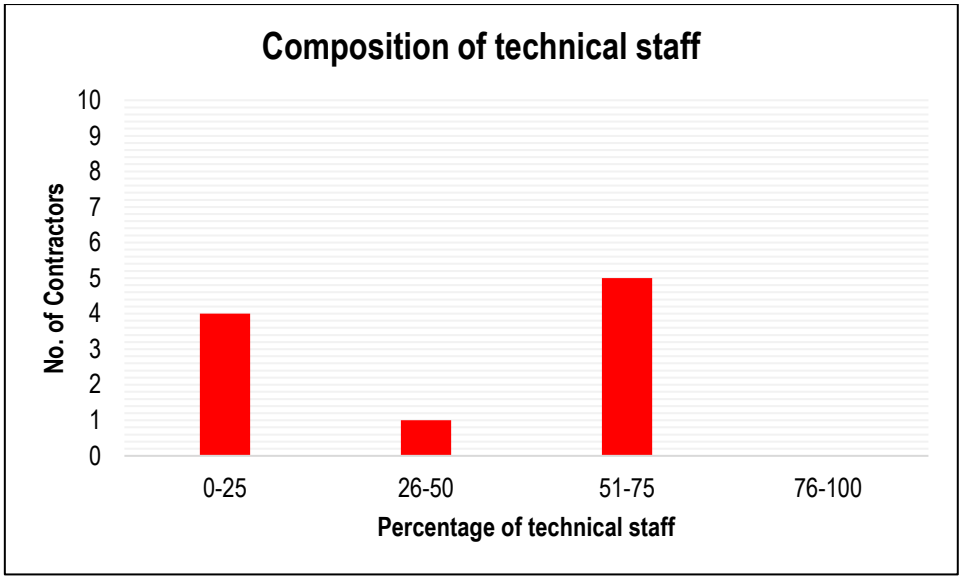


Figure 4.7: Composition of technical staff amongst contractors

Table 4.10 and Figure 4.8 shows the roles and responsibilities of the respondents prior to establishing their companies. Although eighty percent (80%) of the respondents had minimal experience in the construction industry before establishing their company (refer to Table 4.7), seventy percent (70%) had prior experience in project or construction management. This indicates that most respondents had some exposure and experience in management prior to establishing their company.

Table 4.10: Roles and responsibilities on projects prior to establishing the company

	Project/ construction management	No experience in the industry
Number of contractors	7	3
Percentage (%)	70	30

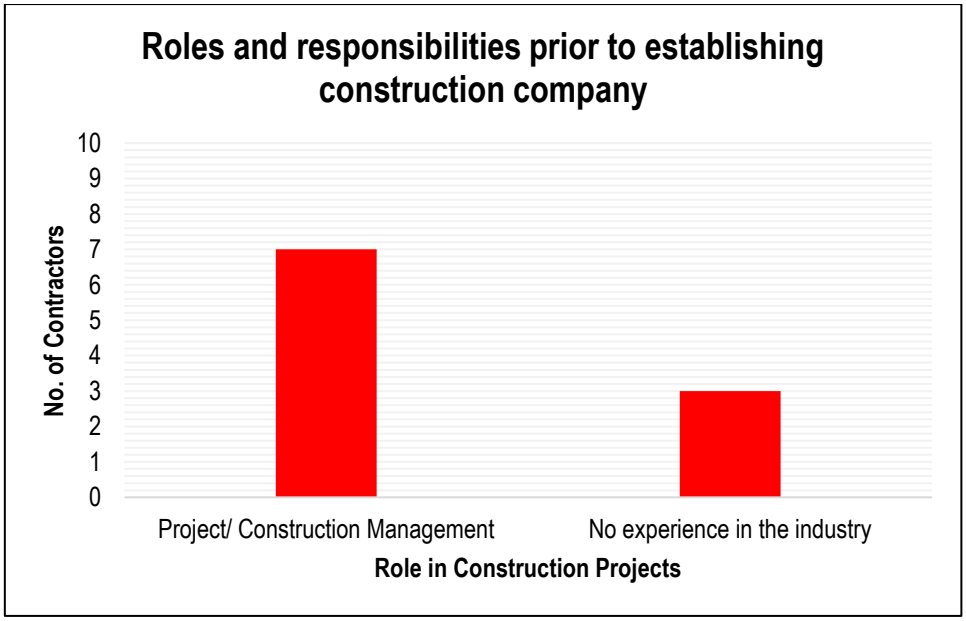


Figure 4.8: Roles and responsibilities of company owner on projects prior to establishing construction company

Table 4.11 and Figure 4.9 shows that eighty percent (80%) of the respondents had between 0 and 5 years' experience in the management of construction activities when establishing their companies. This indicates that most of the respondents had minimal experience in the management of construction activities prior to establishing their company.

Table 4.11: Years of experience that the owner had in the management of construction activities when establishing the company

	0-5 years	6-10 years
Number of contractors	8	2
Percentage (%)	80	20

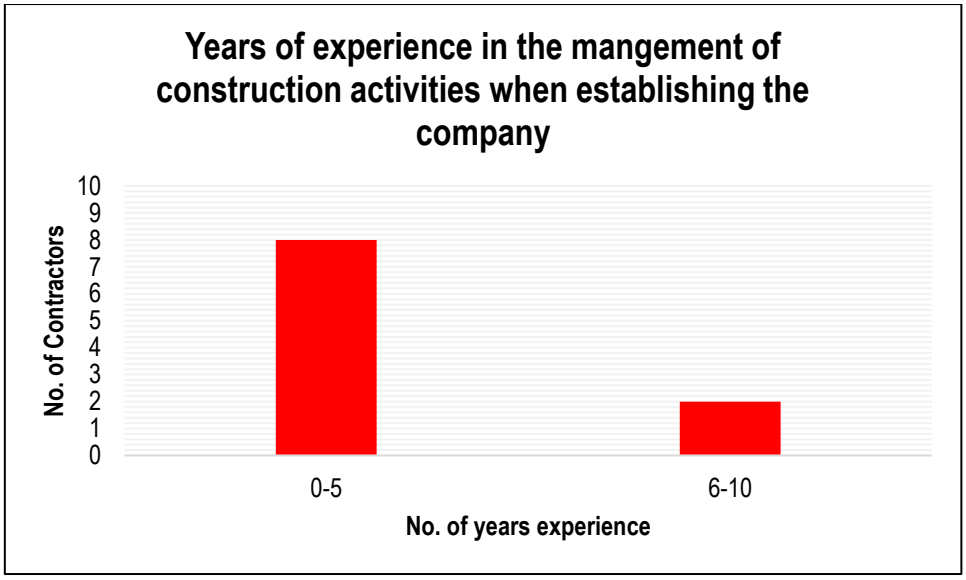


Figure 4.9: Years of experience that the company owner had in the management of construction activities when establishing the company

Table 4.12 and Figure 4.10 shows the professional registration of respondents when establishing their company. None of the respondents in the study had professional registrations with any statutory body within the built environment when establishing their company. This shows that the majority of emerging contractors do not have any proclivity to become professionally registered. Professional registration becomes more important once a company improves their CIDB grade. As mentioned in the literature review, contractors with a CIDB grade greater than 6 are required to have a minimum number of registered professional engineers in their company.

Table 4.12: Professional registration of respondents when establishing the company

	Professional registration	No professional registration
Number of contractors	0	10
Percentage (%)	0	100

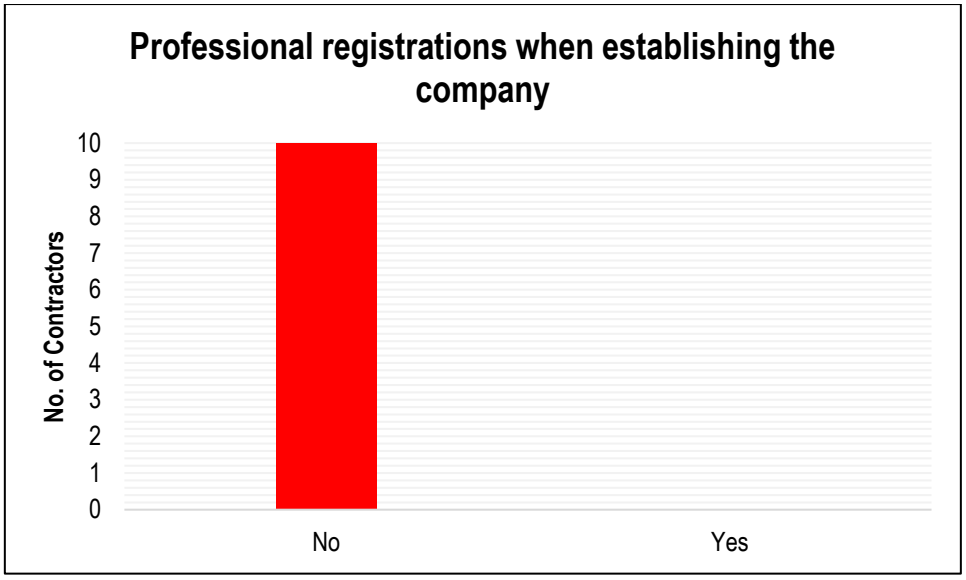


Figure 4.10: Professional registration of respondents when establishing the company

Table 4.13 and Figure 4.11 reflects the participation of respondents in CDPs. Fifty percent (50%) of the respondents indicated that they have participated in CDPs. The respondents stated that most of the programmes focused on developing project and construction management skills. Only 2 of the 5 contractors that participated in CDPs indicated that the CDPs focused on developing technical skills. The first technical programme consisted of teaching contractors the fundamentals of building roads, whilst the second programme focused on building works. The remainder of the respondents that participated in CDPs received training in project and financial management.

Table 4.13: Contractors participation in CDP's

	Participated in CDP's	Did not participate in CDP's
Number of contractors	5	5
Percentage (%)	50	50



Figure 4.11: Contractors participation in CDPs

Table 4.14 and Figure 4.12 shows the participation of respondents in joint ventures. Fifty percent (50%) of the respondents had experience in a joint venture. All the respondents that formed joint ventures (JV's), did so with contractors that had a higher CIDB grading than themselves. Similarly, all the respondents that formed JV's complained that they were marginalised by the larger contractors. Some of the problems mentioned by the respondents included the larger contractors in the JV having sole access to the bank account, lack of formal agreements, being obligated to use personnel and plant from the larger contractor and being excluded from financial matters such as preparation of monthly payment certificates.

Table 4.14: Contractors participation in JV's

	Participated in JV's	Did not participate in JV's
Number of contractors	5	5
Percentage (%)	50	50

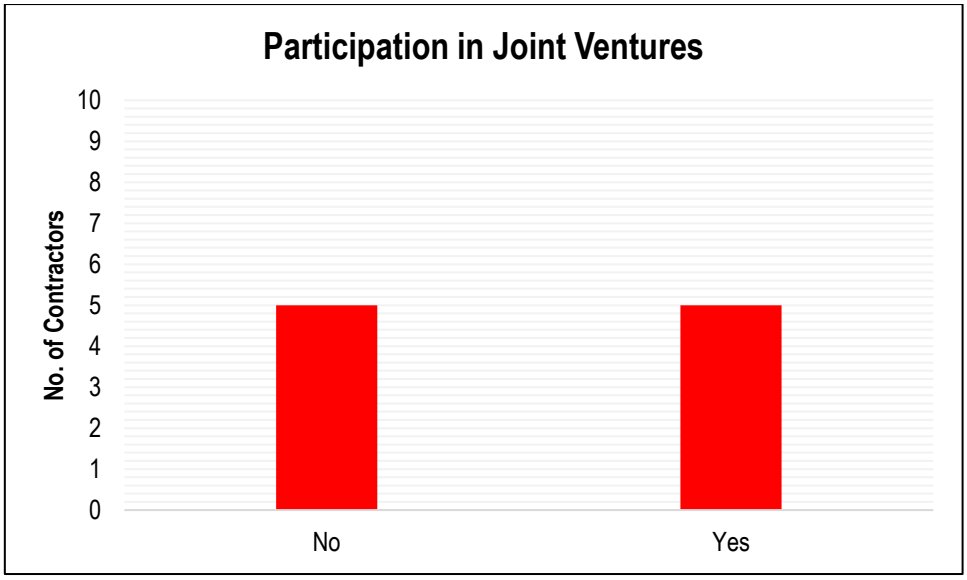


Figure 4.12: Contractors participation in joint ventures

Table 4.15 and Figure 4.13 shows the value of the first project that was awarded to respondents. Seventy percent (70%) of the respondents indicated that the value of their first project was less than R2 million. This is consistent with a contractor that has a CIDB grading between 1 and 3. This also indicates that the respondents in the study had to work their way up from the lower CIDB grades through to the higher ones. Despite the immense competition in the lower CIDB grades and the challenges present in the industry, the respondents managed to form successful construction companies.

Table 4.15: Contractors value of first project

	R 0-2 mil.	> R 2 mil.
Number of contractors	7	3
Percentage (%)	70	30

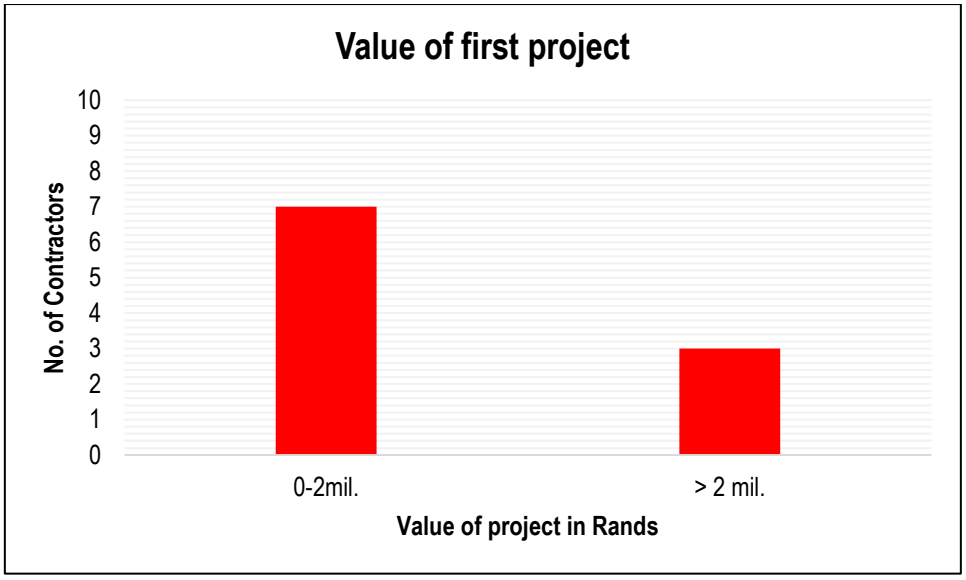


Figure 4.13: Contractors' value of first project

Table 4.16 and Figure 4.14 shows the number of respondents who experienced difficulties obtaining finance to start their companies. As mentioned during the literature review, one of the major challenges facing emerging contractors is the difficulty experienced when trying to obtain finance. This study has confirmed that emerging contractors experience difficulties when trying to obtain finance. The respondents indicated that most lending institutions did not want to lend them money as they were seen as high risk.

Table 4.16: Contractors experiences obtaining finance

	Difficulty obtaining finance	No difficulty obtaining finance
Number of contractors	10	0
Percentage (%)	100	0

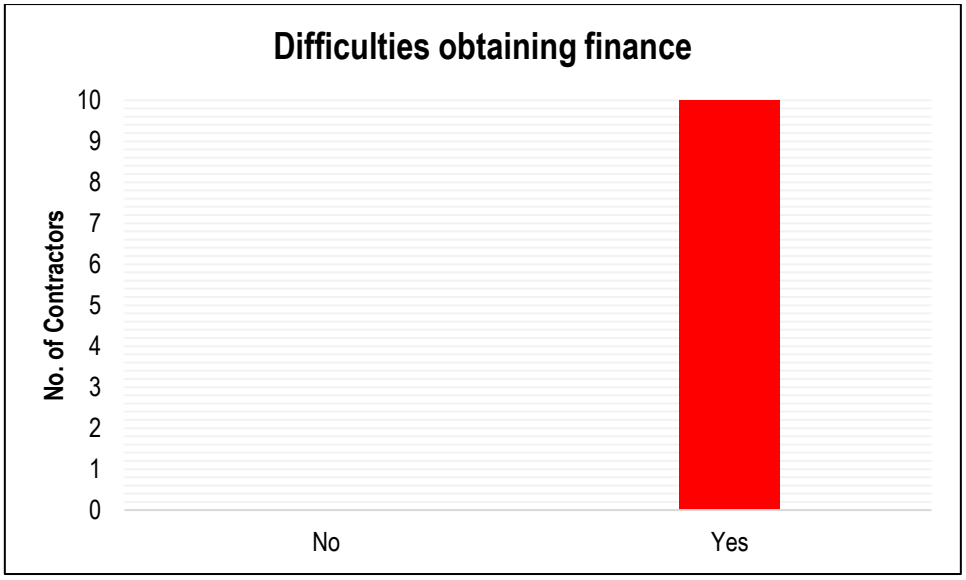


Figure 4.14: Contractors' difficulties obtaining finance

Table 4.17 and Figure 4.15 shows the number of contractors who have experienced difficulties obtaining credit from suppliers. This study found that all respondents experienced difficulties in obtaining credit from suppliers. Most of the respondents stated that this was due to their limited track record and short-term relationship with suppliers.

Table 4.17: Contractors experiences obtaining credit

	Difficulty obtaining credit	No difficulty obtaining credit
Number of contractors	10	0
Percentage (%)	100	0

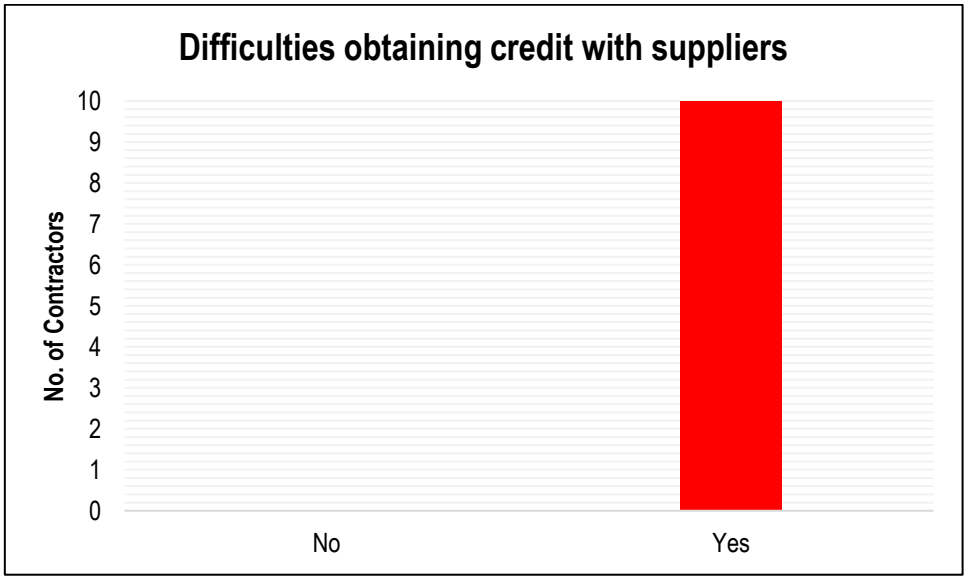


Figure 4.15: Contractors difficulties obtaining credit from suppliers

Windapo and Cattell (2011:30) found that reinvesting profits back into the business is one of the key components of forming a successful construction company. Table 4.18 and Figure 4.16 shows the percentage profit that the respondents in the study invested into their company. Sixty percent (60%) of the respondents indicated that they invested more than fifty percent (50%) of profits back into their company.

Table 4.18: Percentage of profit contractors re-invest into the company

	0-25 %	26-50 %	51-75 %	76-100&
Number of contractors	4	0	2	4
Percentage (%)	40	0	20	40

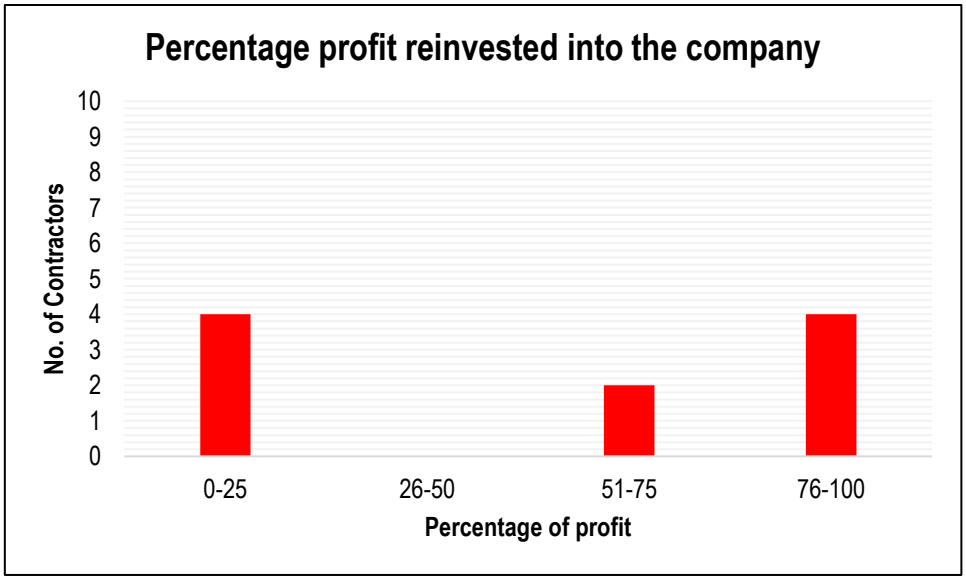


Figure 4.16: Percentage profit reinvested into the business

Windapo and Cattell (2011:31) also found that successful companies invested in fixed assets such as plant and equipment. Figure 4.17 shows the number of respondents that invested in fixed assets. This study has found that all the respondents invested in fixed assets, which confirms the findings by Windapo and Cattell (2011:31).

Table 4.19: Contractors investment in fixed assets

	Invests in fixed assets	Did not invest in fixed assets
Number of contractors	10	0
Percentage (%)	100	0

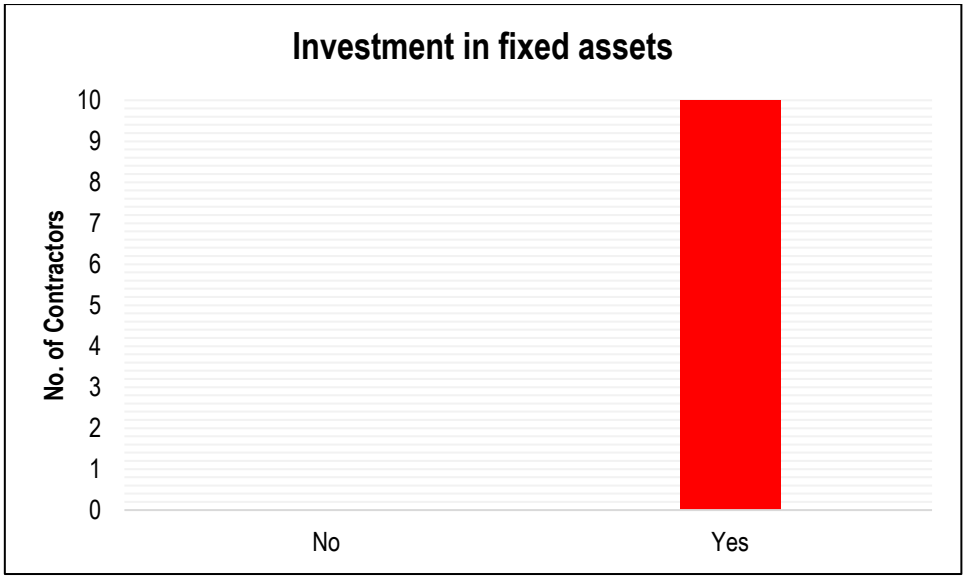


Figure 4.17: Contractors investment in plant and equipment

During the literature review, it was found that as companies become more successful they begin to operate in different geographic locations. Table 4.20 and Figure 4.18 shows the geographic location where the respondents operate. The study found that ninety percent (90%) of the respondents have begun operating outside of Gauteng, obviously influenced by where the most lucrative and available projects are located.

Table 4.20: Areas where contractors operate

	Gauteng only	Gauteng and the rest of South Africa
Number of contractors	1	9
Percentage (%)	10	90

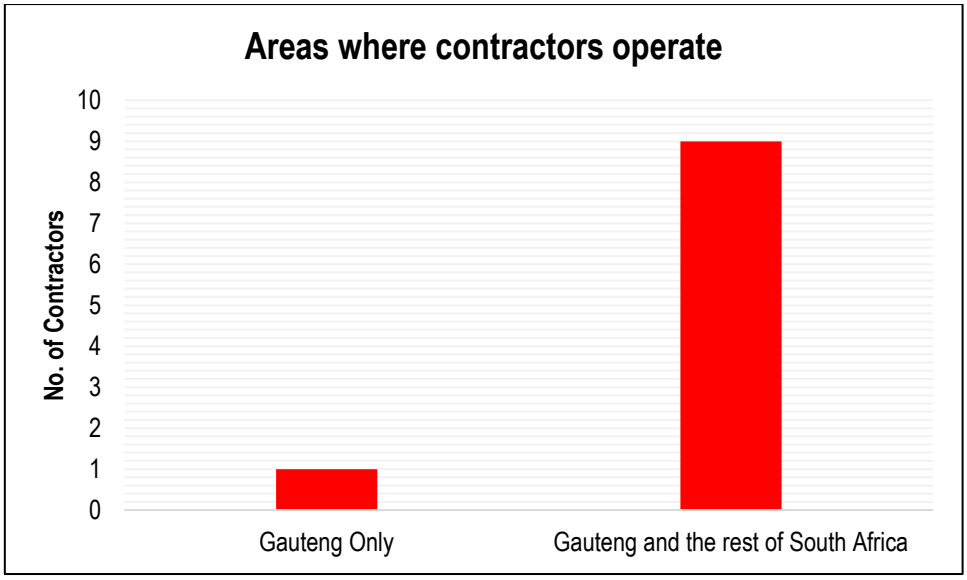


Figure 4.18: Area where company operates

During the literature review, diversification was identified as one of the major attributes of successful companies. Table 4.21 and Figure 4.19 shows the number of respondents that have diversified into other industries. The study found that seventy percent (70%) of respondents have diversified into different sectors within the construction industry.

Table 4.21: Contractors diversification in the industry

	Diversification in the industry	No diversification
Number of contractors	7	3
Percentage (%)	70	30

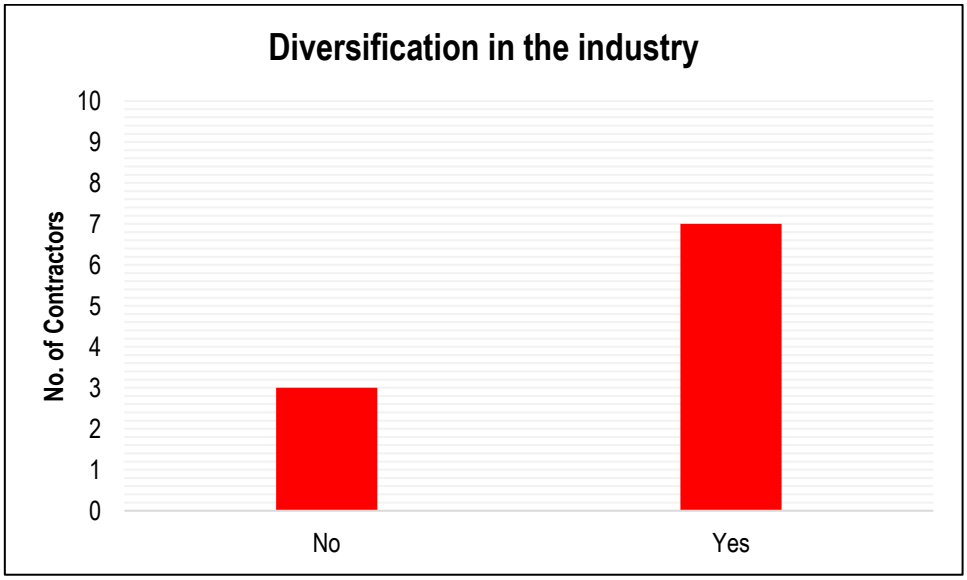


Figure 4.19: Contractor diversification in the industry

The public sector is a significant financial contributor to the construction industry. Table 4.22 and Figure 4.20 shows the major clients of the respondents in the study. All respondents indicate that they do work for the public sector, with sixty percent (60%) of the respondents indicating that the public sector is their only client. The remaining forty percent (40%) of respondents' state that they have major clients in both the public and private sector.

Table 4.22: Contractors major clients

	Public sector only	Public and private sector
Number of contractors	6	4
Percentage (%)	60	40

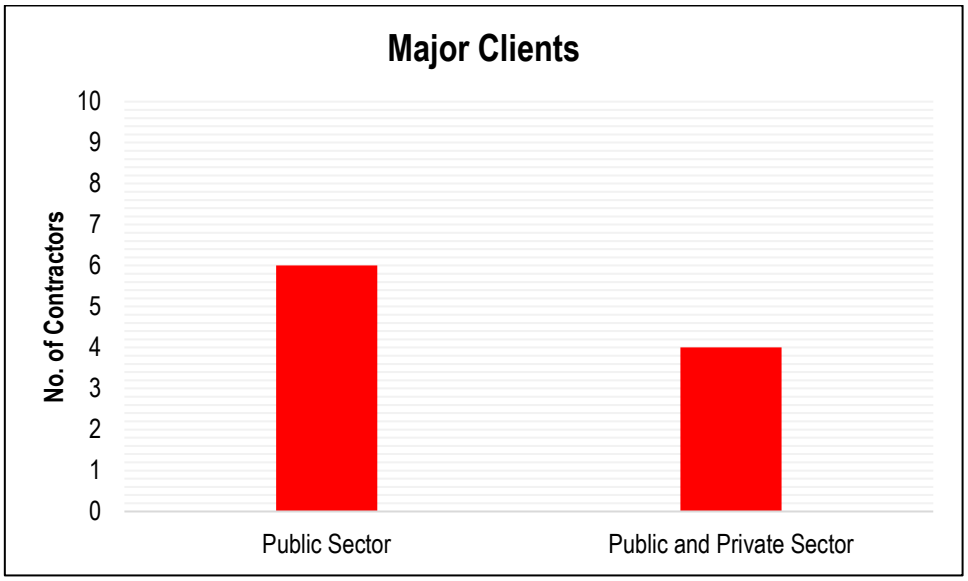


Figure 4.20: Contractors' major clients

One of the major challenges that was identified in the literature review was the inability of emerging contractors to ensure a continuous flow of work. Since this study focused on successful contractors, it was important to identify how these contractors ensured continuous work opportunities. Table 4.23 and Figure 4.21 shows the various ways that the respondents in the study ensure continuity of work. Sixty percent (60%) of the respondents indicate that they pursue active marketing and continuous tendering with the hope of being awarded a new project. The remaining forty percent (40%) of respondents indicate that they always try to produce a high-quality product and ensure client satisfaction so that they are awarded future projects.

Table 4.23: Contractors strategy to ensure continuity of work

	Continuous tendering and active marketing	High quality of work
Number of contractors	6	4
Percentage (%)	60	40

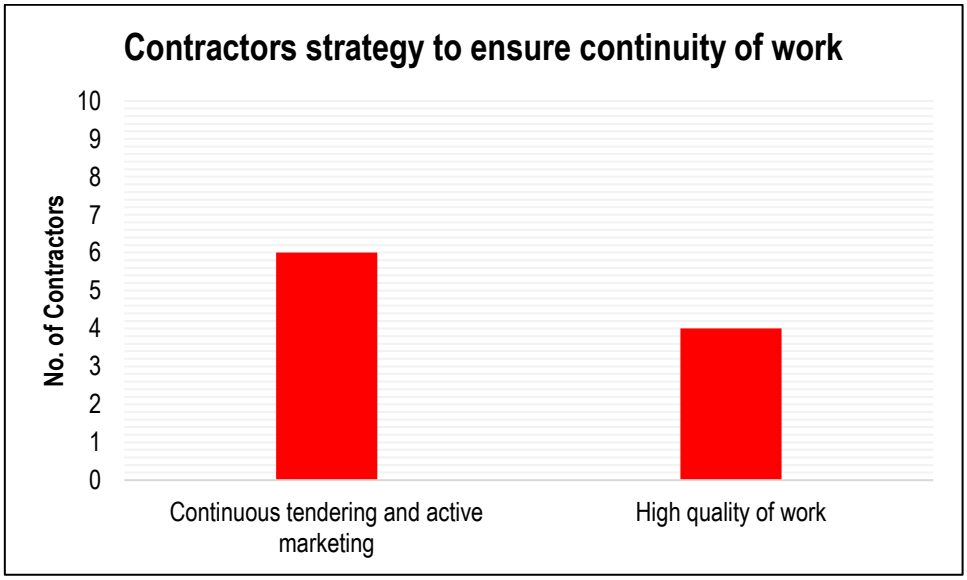


Figure 4.21: Strategy to ensure continuity of work

Another major challenge identified during the literature review was the failure of clients to pay on time. This problem was also highlighted by the CIDB in the *Status Quo Report: SA Contractor Development Programmes*. Table 4.24 and Figure 4.22 illustrates that ninety percent (90%) of the respondents stated their clients do not pay on time.

Table 4.24: Contractors experience regarding payment

	Clients pay on time	Clients do not pay on time
Number of contractors	1	9
Percentage (%)	10	90

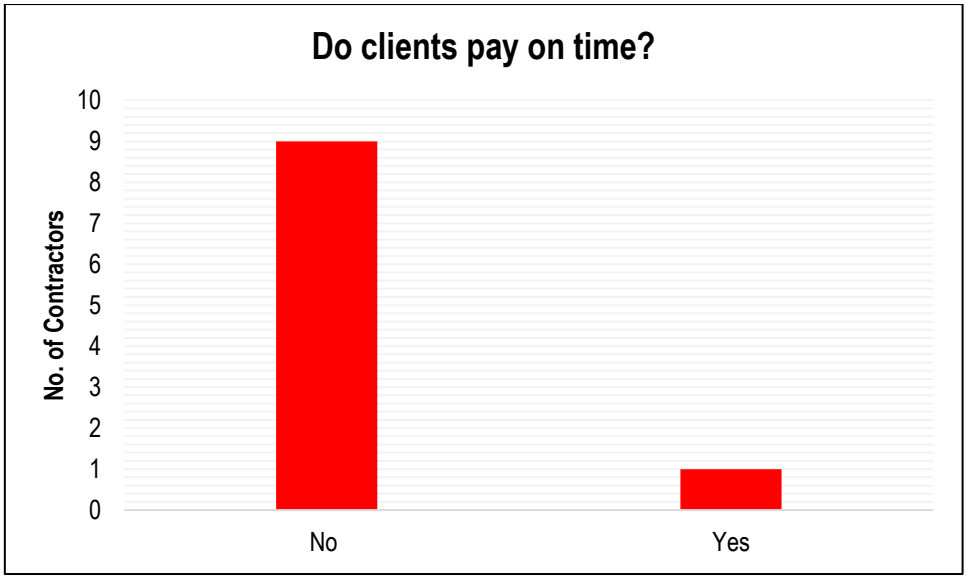


Figure 4.22: Do clients pay on time?

As late payment of contractors is one of the major challenges facing the industry, it was necessary to identify the strategies used by successful emerging contractors to counter these challenges. Table 4.25 and Figure 4.23 shows the contingency plans developed by respondents to counter the ongoing challenge of late payments by clients. Although there was no common answer given by the respondents, the various contingency plans are provided below: -

- Proper financial planning
- Seek private sector clients who are a more reliable source of payment
- Renegotiate payment terms with suppliers
- Borrowing money.

Table 4.25: Contractors contingency plans for late payment

	Proper financial planning	Seek private sector clients	Renegotiate terms with suppliers	Borrow money
Number of contractors	3	2	3	2
Percentage (%)	30	20	30	20

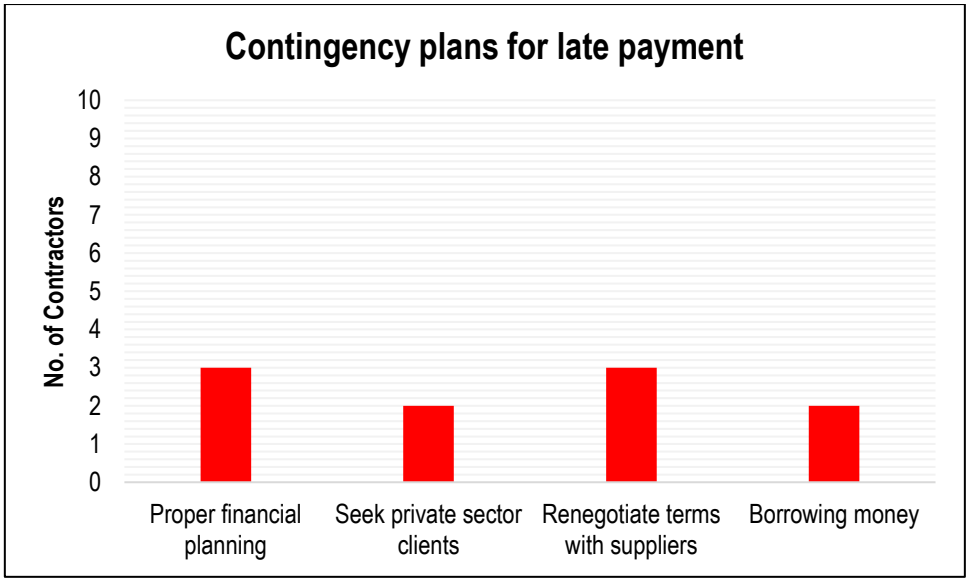


Figure 4.23: Contractors' contingency plan for late payments

4.4 Authors observations during municipal projects

Two projects that were managed by the Author between 2014 and 2015 have been beset with difficulties owing to the contractors' lack of technical skills and experience. Both projects were undertaken by contractors who believed the construction industry offers huge profit margins. The first project involved refurbishing two reservoirs for a local municipality. The work entailed pouring a dome shaped concrete roof on the reservoir as the existing roof was old and had excessive spalling of the concrete. The contractor was appointed from a panel of contractors that was set up by the client. Although the contractor that was appointed had the specified CIDB grade, he had never previously constructed a dome shaped concrete roof or any other water retaining structures. During the project the contractor experienced ongoing problems such as fixing of reinforcement according to the Engineer's drawings, preparing monthly payment certificates and preparing a programme of works. This resulted in time delays which the contractor was unable to recover. Following the contractors first attempt at casting the new concrete roof, the quality of work was deemed to be poor by the Engineer. The Contractor was subsequently forced to break out the concrete and cast the roof again, at his own cost. Currently the project is still incomplete and 1 year late. It appears that the Client will terminate the contract due to non-performance of the contractor. A new contractor will then have to be appointed at an additional cost to the Client.

The second project managed by the Author entailed the construction of two buildings for a parastatal in Gauteng. The project was awarded to a CIDB Grade 5 contractor that had no technical qualification. The project duration was initially 4 months, however, the contractor completed the project after 14 months. During the project the contractor experienced several

delays due to his lack of technical skills. He was forced to break concrete on several occasions due to poor workmanship, relocate structural steelwork that was located in the wrong position and redo plastering that was not finished to the satisfaction of the Engineer. The contractors contract management skills were also poor as he was unable to produce a programme of work throughout the duration of the project. He also priced several items in the Bill of Quantities incorrectly which resulted in him making significant losses on the project.

CHAPTER 5: ANALYSIS AND DISCUSSION OF RESULTS

5.1 Introduction

This chapter provides a synopsis of the findings from the structured interviews and a brief discussion on the pertinent issues. The analysis of results provided in this chapter complements the findings from the literature review.

5.2 Analysis of results from the structured interviews

- Although most of the respondents had been involved in project and construction management when establishing their company, most of them had less than five years' experience in these fields. This shows that people with minimal technical experience are opening construction companies and becoming successful.
- Forty percent (40%) of the respondents had a technical degree / diploma. Furthermore, all the respondents employed technical staff. Fifty percent (50%) of the contractors that were interviewed had a technical staff compliment that consisted of more than fifty percent (50%). All the contractors that were interviewed had some level of technical capacity within their companies. This highlights the importance of having technical capacity in order to become a successful contracting firm.
- None of the respondents were registered as professional engineers or project managers which indicates that it is not a pre-requisite for an owner to be professionally registered for the company to become successful.
- All respondents who participated in joint ventures with larger companies indicated that they did not have a successful experience. This is indicative of a larger problem in the industry where large companies utilise smaller companies to get awarded projects and then ultimately side-line them during the implementation of those projects.
- All respondents experienced problems obtaining finance and gaining credit from suppliers because of their lack of capital or track record. This correlates with the literature review and shows that it is a major problem in the industry.
- More than half of the respondents indicated that they invested more than fifty percent (50%) of their profits back into their businesses. The majority of them indicated that they invest in plant and equipment which correlates with the study conducted by Windapo and Cattell (2011). This shows that re-investment of profits into the business is key to making it a successful over a long-term period.
- The majority of respondents diversified their company and extended their business operations beyond Gauteng. This correlates with the literature review which found that

diversification and expanding the company to different locations and markets is critical to ensuring its success.

- The respondents stated that to ensure continuity of work they continuously submit tenders, actively market their companies and always aim to produce a high-quality product. This shows the importance of tendering and the requirement for companies to have sufficient funds and capacity to continuously market and tender for work. Completing projects to a high-quality also highlights the need to have skilled people to ensure that work can be completed to a high standard. Failure to complete work with a good quality can result in reputational damage which can hinder the opportunity to get further work.
- Ninety percent (90%) of the respondents complained that clients do not pay on time. Late payment by government departments is a major issue in the construction industry. The failure of these departments to pay contractors timeously negatively affect the sustainability of these companies. The study found that the most common method of mitigating the impacts of late payment was to ensure proper financial planning and renegotiating terms with suppliers.

Summary of findings

- The major finding was that all the respondents either had an owner with a technical qualification or a reasonable component of support staff with technical qualifications. Furthermore, all the respondents in the study employed technical staff. This highlights the importance of technical capacity amongst successful contractors.
- Most respondents had limited experience when establishing their companies with none of them being professionally registered with ECSA or SACPCMP.
- Most contractors had bad experiences during joint ventures with larger companies.
- Some of the strategies utilised by the respondents included diversification both geographically and operationally, active tendering and reinvesting profits into the company.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter reports on the conclusions that have been formulated following the analysis of results. In light of the results from the structured interviews and the various findings from the literature review, recommendations have been provided. Thereafter possible areas of further research have been explored.

6.2 Conclusion

The primary conclusion that was established during this study was that technical capacity is one of the components of successful emerging contracting companies. All the companies that were interviewed were deemed to be successful since they were operating for a minimum period of 5 years and had progressed at least 3 CIDB grades in that time. Although the study only looked at 10 successful emerging contractors in Gauteng, many of these firms either had an owner with a technical qualification or had a reasonable component of support staff that had technical qualifications. Many emerging contractors in South Africa operate construction companies with limited technical ability which ultimately prevents those companies from becoming successful as they don't have the required skills to execute projects successfully.

The link between technical qualifications and success in the construction industry was not previously explored in depth, in other studies. This study found that although the directors of some of the companies did not have a technical qualification, all the companies employed technical staff. This highlights the need for a contracting company to have technical capacity if they want to be successful in the construction industry.

The second conclusion in the study related to the use of strategies to counter the challenges in the construction industry. Despite the need for strategic management and the implementation of strategies to enable emerging contractors to navigate the challenges in the construction industry, the strategies employed by these companies should be flexible to allow them to adapt to changing circumstances and seize opportunities when they arise. This study identified the core strategies that have been implemented by successful emerging contractors. The study found that the major strategies employed by successful emerging contractors include diversification and specialising into other industries within the construction sector, expanding operations to new locations and reinvesting profits back into the business.

The third conclusion that was established during the study related to the challenges facing emerging contractors when trying to increase their CIDB grades. Although the construction industry is beset with numerous challenges, this study focused on the challenges pertaining to contractors increasing their CIDB grades. Lack of technical skills, inconsistent work opportunities and financial constraints are challenges that prevent contractors from increasing their CIDB grades. The cyclical nature of the construction industry means that during some periods, there is a low volume of work in the industry. Unfortunately for emerging contractors, this period is amplified due to the limited number of projects that are implemented in the lower CIDB grades. This problem is exacerbated further by the intense competition in the lower CIDB grades. If contractors are unable to secure projects, they are unable to grow and develop their businesses, which eventually leads to their stagnation within the industry. Contractors can only increase their CIDB grade when they show that they have sufficient turnover and work capability. This can only be achieved if they successfully complete new projects.

Cash flow and capital is the backbone of all companies in the construction industry. If a contractor cannot generate sufficient turnover, they are unable to fulfil the financial aspect of the CIDB grading process. Generating turnover is dependent on acquiring projects and being paid for the projects. If a contractor does not have any projects, then the company has no source of income and cannot increase their CIDB grade.

The final conclusion in this study related to the CIDB grading process. The current system has several shortcomings. The low barriers of entry into the industry allow anyone to become a contractor, regardless if they have a technical qualification or experience. It is also evident that the CIDB does not place any emphasis on the technical expertise of contractors. If contractors do not have technical qualifications or skills in the industry, it is unreasonable to expect these companies to grow and develop.

6.3 Recommendations

I. The CIDB grading system needs to be reassessed. By creating a higher barrier of entry into the industry, the total number of contractors entering the industry, specifically the lower grades, will reduce and result in a less “cut throat” industry. Alternatively, a technical training programme should be introduced as a compulsory requirement for potential Grade 1 contractors that do not possess a technical qualification. Grade 1 would then only consist of contractors that hold a basic technical competency certificate and are registered, qualifying for future managerial training.

The following measures have been proposed to be incorporated into the CIDB grading system for contractors: -

- A relevant technical qualification should be the minimum requirement for a contractor to be registered for Grade 1 or higher. The technical qualification must be held either by the owner and/or the staff permanently employed in the company.
- When assessing a contractor's works capability, the time, quality of workmanship and cost of all completed projects should be analysed.
- The financial capability, works capability and technical competence of a contractor should be assessed collectively to determine a contractor's CIDB grade.

II. Two of the challenges preventing contractors from increasing their CIDB grades are inconsistent work opportunities and financial constraints.

The following measures have been proposed to remedy these challenges: -

- Government needs to implement legislation that compels client bodies to pay contractors within a 30-day period. Contractors should also continually conduct internal financial assessments to ensure that their companies will remain financially solvent when they execute projects.
- Government needs to address the skills shortage in national departments, provincial departments, municipalities and parastatals. This should entail appointing skilled professionals who understand the complexities of engineering projects and the methods utilised to implement successful projects. By having a core team that understands the technical challenges associated with different projects and the process to execute these projects, the implementation time should be greatly reduced. The implementation of more projects will assist in reducing the inconsistent work opportunities that have been affecting contractors.

III. Most construction projects in South Africa are evaluated based on financial offer, quality and preferences. Therefore, it is important that the quality evaluation is undertaken by a team of professionals who have the ability to assess the technical competence of contractors. This is to ensure that companies without the required technical and management experience and skills to undertake a project are disqualified prior to the evaluation of financial offers.

The following has therefore been proposed: -

- Evaluation of all construction tenders must be conducted by personnel that are technically qualified and have the ability to adjudicate tenders for construction projects.

IV. The CIDB found that the overall performance of the CDPs have been disappointing because of various aspects pertaining to the implementation of the programmes.

Various mechanisms have been proposed below that will assist in achieving the objectives set out for the CDPs:

- A technical qualification must be stipulated as a minimum requirement for contractors before they are considered for enrolment into CDPs. This highlights the need to urgently set up technical training facilities for contractors so that they can qualify for inclusion in CDPs. Detailed screening of contractors should also be undertaken. Failure to adequately screen contractors entering the programme will result in further failures of CDPs and more wasteful expenditure by client bodies.
- An increase in the number of women and youth in targeted grades can be achieved by attracting them to enrol in CDPs using various incentives. It must be emphasised that eligibility into the programme will still be dependent on a technical qualification gained through currently existing institutions or newly formed technical training institutions.
- Ensuring work opportunities once contractors exit the programme can be accomplished by setting up a database/panel that only consists of contractors that have exited CDPs. This panel should be utilised by government departments and parastatals when they require contractors to undertake projects. Government departments could also stipulate the use of these contractors under the development objectives of projects. This will encourage larger companies to appoint and mentor companies that have exited CDPs.
- Improving the performance, business and technical skills of contractors can be achieved by continuous mentoring until the contractor is equipped to execute projects at an acceptable standard.

6.4 Recommendation for further research

During the study, the researcher identified areas where further research should be conducted. The first area relates to the award of projects based on a company's CIDB grade. In some cases, contractors with a high CIDB grading, often do not have the required technical skills to complete complex projects to an acceptable standard. This is usually because they have only been exposed to a particular type of project (i.e. building houses, roads, laying pipelines, etc.).

When these contractors are awarded complex projects, the projects inevitably fail, which results in a significant cost to government.

The second area of research that can be conducted is into the capacity of government departments and parastatals, to implement infrastructure projects within set timeframes and budget allocation.

The third area of research can be conducted into the use of local contractors for infrastructure projects. The study should examine if the appointment of local contractors provides any significant benefit to the communities where the project is implemented.

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APPENDICES

APPENDIX A: STRUCTURED INTERVIEW

Name:
Position in company:
Name of Company:
CIDB Grade:

1. What year was the company established?

_____

2. How many people established the company?

_____

3. What type of business is it (i.e. sole proprietor, partnership, close corporation)?

_____

4. How many years of experience did you have in the construction industry when you started the Company?

_____

5. What were your roles and responsibilities on projects that you completed before starting the Company?

_____

6. What was your highest academic qualification when you started the Company? Since then have you studied further?

_____

7. How many years of experience did you have in management when you started the Company?

_____

8. Were you registered as a Professional (i.e. Pr Eng, Pr CPM, etc.) when you started the Company?

_____

9. What was the first project that the Company was awarded?

_____

10. What was the value of the project?

11. What are your roles and responsibilities on projects that have been awarded to the Company?

12. How many full time staff do you have employed?

13. How many technical staff do you have employed?

14. Do you provide any incentives for your employees on site to achieve targets? If yes, what are they?

15. How did you manage to secure work when you started the Company?

16. Did you receive financial assistance when starting the Company?

17. When applying for finance what type of difficulties did you encounter?

18. Was it difficult to obtain credit facilities with your suppliers when you started the Company? If yes, how did you manage to obtain credit facilities?

19. Have you ever participated in any Contractor Development Programmes? If yes, which programmes were you involved with and what type of training did you receive?

20. How often do you form joint ventures with larger companies? (Select A, B or C)
    A. Often
    B. Seldom
    C. Never
21. What are the advantages and disadvantages of these joint ventures?

22. How often do you form joint ventures with similar size companies? (Select A, B or C)
    A. Often
    B. Seldom
    C. Never
23. What are the advantages and disadvantages of these joint ventures?

_____

24. What type of projects is your company involved with?

_____

25. Do you only undertake projects in Gauteng? If no, in which other provinces do you undertake projects?

_____

26. Have you diversified into other markets? If yes, what other markets have you ventured into?

_____

27. Do you get most of your work from the public or private sector?

_____

28. Approximately how many projects do you undertake annually? How do you ensure continuity of work?

_____

29. Do your clients pay on time?

_____

30. What are the implications to your business if you are not paid on time?

_____

31. What contingency plan do you have in place if you are not paid on time?

_____

32. What percentage of profits do you reinvest back into the business?

_____

33. What fixed assets does the company invest in? (I.e. plant, equipment, property, etc.)?

_____