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AN EXPLORATION OF FUNDS MANAGEMENT BY EMERGING CONTRACTORS

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AN EXPLORATION OF FUNDS MANAGEMENT BY EMERGING CONTRACTORS

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ABSTRACT

Finance is a critical aspect that needs to be closely monitored in a business and during the lifespan of a construction project. Emerging contractors need to develop and run sustainable businesses in the construction industry. The extent of expertise in funds management by emerging contractors directly relates to their development. Therefore, all efforts must be geared towards their expertise, development and sustenance. Emerging contractors need to manage their finances, be competitive, and deliver projects in the required quality, time and within the allocated budget. This study aims at determining challenges faced by emerging contractors, the root causes of challenges of emerging contractors in funds management, the impact of emerging contractor challenges on project delivery time. Further, the study aims to develop a flow chart that will mitigate emerging contractor challenges in funds management.

The study was conducted in KwaZulu-Natal, South Africa using a questionnaire. Questionnaires were distributed in two phases and respondents to the study included emerging contractors and industry stakeholders. Random and systematic sampling techniques were employed in the selection of samples. A total of 85 questionnaires were analysed for the study. Inferential statistics was employed for analysis of data.

Findings include late payment for completed work which ultimately causes delays; interference with project performance; inadequate planning; unskilled site manpower; late delivery of material; late identification of errors and resolution of drawings, specification errors and omissions; community unrest, militancy and communal crises and interference by political leaders are some of the key factors that negatively affect emerging contractors' funds management. When adequate attention is given to these factors, it results in project success. In addition, improvement of contractor performance and quality of work; involvement of tribal authorities, provision of finances for project by funders, securing finances and materials credit; successfully managing project finances from inception to completion leads to profits being made and projects are completed successfully and within budget when payment for work done is effected on time.

Recommendations include ensuring that sufficient finances are secured, allocated and properly managed from inception to completion of a project; payments are prepared, submitted and paid on time. Planning is improved to combat project delays including

ordering materials in advance, identifying design and specification errors early, engaging all project stakeholders to avoid disputes and attending formal training courses to acquire skills that will assist in running projects and managing successful and sustainable businesses. It is also recommended that the new proposed programme and flowchart be adopted to assist the South African construction industry in improving the financial management practices and develop skill of emerging contractors; its adoption will alleviate challenges facing emerging contractors in funds management.

Keywords: Emerging contractors, financial management, project management, planning, skills development, business development

DECLARATION

This dissertation, except where indicated in the text, is the candidate's own work and has not been submitted in part, or in whole, at any other University or University of Technology.

This research was conducted at the Durban University of Technology under the supervision of Dr A.O. Aiyetan.

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DEDICATION

This dissertation is dedicated to my beloved parents, Mr W.M and Mrs N.V Merana, my only sister, my brothers and nephews. I am because you are.

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CHAPTER 1: INTRODUCTION

The Construction Industry Development Board (CIDB, 2011), describes an emerging contractor as any contractor registered with the (CIDB) level 1 to (CIDB) level 5, that may be recognised for appropriate development support and progression through their grading within CIDB programmes. Emerging contractors are essential for the growth and development of the South African construction industry, however, researchers (Mashatole, 2014; Nordberg, 2005; Meyer-Stamer, 2003; Ofori, 2000; Materu, 2000; Ssegawa, 2000 and Datta, 2000) have shown over the years that emerging contractors encounter different challenges which range from: Lack of proper technical skills required to execute construction projects because some emerging contractors are not technically oriented, they are not able to employ and pay relevant qualified technical personnel to assist them in managing their projects. They have little or no knowledge of business and financial management as a result of not being able to plan strategically before deciding to tender on a project and manage business finances before, during and after completion of the project. The inability to raise and manage cash flows as a result of poor planning and not knowing the available financial institutions that assist small businesses with funding, majority of these contractors do not have trained financial advisors and accountants that assist in financial management and planning. They struggle to obtain credit from commercial banks as a result of not having collateral or getting enough credit from material suppliers. They face a challenge of inconsistent work flow as a result of the high bidding competition; late payments due to late submission of claims by contractors and or consultants and other related internal challenges from clients; capacity and performance constraints due to not having the required working equipment and financial back-up which ultimately lead to project delays and in some cases, project failures (Nordberg, 2005; Ofori, 2000; Materu, 2000; (Ssegawa, 2000, Meyer-Stamer, 2003).

It is important to develop emerging contractors in order to alleviate these challenges. Government and private sector have a number of training and development programmes that have been developed to assist emerging construction companies to grow into sustainable and profitable fully fledged companies (CIDB, 2011). The (NEF, 2014) states that the development of emerging contractors is directly proportional to the development of the industry and the nation. The nation boasts of more professionals that join the industry. Consequently, it presents more opportunities for young people to pursue careers within the construction industry. Development of emerging contractors eliminates skills shortages and the sustenance of the industry. In addition, the development of

emerging contractors will lead to the standardisation of work in the construction industry with the result of skills improvement as more professionals enter the industry and bring broader and new knowledge (Kulemeka *et al*., 2015). Projects delays and failures will be minimised, quality of work will improve, and project costs will be kept realistic and managed properly. Proper project planning will be done, construction work programmes will be constantly monitored and updated and overall project management will also be improved (Abdul-Rahman *et al.,* 2009). This study therefore aims at exploring how emerging contractors manage their funds and also to identify and assess the root causes of challenges they encounter in running their businesses; the impact of those challenges on project delivery time as well as to identify and assess the current programmes relative to educating emerging contractors in funds management.

1.1 RESEARCH PROBLEM

There are many reasons for the substandard work produced by emerging contractors in the South African construction industry. This is due to a number of factors which stem from the company size and available resources and the challenges experienced in raising working capital. These companies are not able acquire larger industrial and commercial projects (Thwala and Mofokeng, 2012). The majority of emerging contractors do not have the financial capacity to secure insurance or secure enough credit for materials to finance projects when clients delay in paying for work done (Nordberg 2005, Ofori, 2000, Materu, 2000). This is a serious problem because the lack of funds is a cause for project delays, and at times projects fail and companies become insolvent (Chen, 2007). Another factor stems from the experience of the contractor in executing the construction work. Some of the emerging contractors have the experience required but lack knowledge and skills in financial planning and financial management which enable them to execute construction work efficiently and on time (Ssegawa, 2000, Meyer-Stamer 2003). Other challenges that are experienced by emerging contractors are related to the following: insufficient finances; not being able to get credit from material and plant suppliers; not being able to employ competent and qualified employees; pricing poorly in tenders; lacking skills for tendering and contract documentation; lacking mentors; being used as fronts for established contractors; lacking formal training; lacking resources to do large and complex work; lacking formal training; lacking technical skills, financial, contractual, entrepreneurial and managerial skills required in running a construction project and being paid late for completed work (Thwala and Phaladi, 2009).

The major challenge in the South African construction industry is that government has a serious shortage of human resource that is able plan and design projects (Nordberg, 2005). This is where the professional team (consultants) come in, to help bridge the gap of insufficient personnel that are technically competent in the government sector (SAACE, 2006). Inappropriate designs as a result of consultants issuing incomplete and complex drawings that are at times not possible to execute under certain site conditions also becomes a challenge for emerging contractors. Hence, some of the structures are built incorrectly due to poor supervision and lack of experience from the emerging contractors. These in turn have to be demolished and the costs of the remedial work are incurred by the contractor. Nordberg (2005); Datta (2000); Materu (2000) argue that the failure to secure plant and materials on time and ensure delivery thereof delays many projects. In addition, emerging contractors spend more time on paying idle labour on site which eventually uses up their profits. This is prevented when proper planning is done prior to the commencement of the project. Furthermore, the late delivery of material on site leads to project delays and possibility of penalties being imposed on these emerging contractors. The prevention of waste of the material on site becomes another challenge as most of the time, these emerging contractors do not have the necessary technical expertise to read and interpret construction plans. In other cases, poor estimates due to unrealistic rates and incorrect pricing of critical items from inexperienced emerging contractors becomes the fundamental basis for project failures (Chilipunde, 2007). Inappropriate tendering and contractual procedures that are sometimes influenced by political interests and corrupt officials who accept bribes from corrupt contractors in exchange for jobs; inefficient on-site supervision by contractors and poor construction management by inexperienced or overcommited consultants are additional financial constraints that emerging contractors experience (Nordberg, 2005; Datta, 2000 and Materu, 2000).

Studies related to financial management that have been conducted over the years prove that there are various factors that impact on the success or failure of emerging contractors and one of those is access to finances. Majority of emerging contractors cannot raise bridging finance or have sureties because of a lack of assets to be used as collateral. Mashatole (2014) also argues that material suppliers also do not give emerging contractors the necessary credit to obtain material and this results in project delays. Further, the majority of emerging contractors lack technical and management skills. Lack of technical skills leads to many unnecessary mistakes being made (Aiyetan, 2010). Emerging contractors lack basic business management skills and as a result the majority

of these companies close down within the first three years of existence (Ntuli, 2015). They misuse business resources for personal use because they are unable to differentiate between business and personal resources. Mismanagement of finances by small contractors is a major problem that leads to failure and tasks being done late. Emerging contractors do not make use of mentoring programmes that are provided to assist them in growing their businesses and this leaves them at a huge disadvantage. They take time to become fully fledged and sustainable contractors. (CIDB Best Practice Guide, 2004).

1.2 RESEARCH QUESTIONS

The following are the research questions:

What are the challenges of emerging contractors?
What causes the challenges of emerging contractors relative to funds management?
Are the impacts of these challenges on project delivery relative to funds management?
What current programmes are available relative to educating emerging contractors in funds management?
Is there a flow chart to mitigate emerging contractor challenges relative to funds management?

1.3 AIM OF THE STUDY

This study aims at assessing the challenges facing emerging contractors in the South African construction industry with a view of developing a flow chart to mitigate these problems.

1.4 OBJECTIVES OF THE STUDY

The objectives of this study are to:
Identify and assess the challenges of emerging contractors relative to funds management.
Identify and assess causes of challenges of emerging contractors relative to funds management.
Identify and assess the impact of these challenges on project delivery relative to funds management.
Identify and assess current programmes relative to educating emerging contractors in funds management.

Develop a flow chart to mitigate emerging contractor challenges relative to funds management.

1.5 SIGNIFICANCE OF THE STUDY

The challenges of emerging contractors have multiple effects. It affects the emerging contractor (in terms of profits, delivery time and the image of the contractor), construction industry (lack of patronage and lack of new entrants, leading to skills shortages) and the nation (in terms of poor infrastructure facilities and slow development). Steps must be taken to address these challenges. Mashatole (2014); Nordberg (2005); Meyer-Stamer (2003); Ofori (2000); Materu (2000); Ssegawa (2000) and Datta (2000) have identified over the years the challenges of emerging contractors such as not having access to finance. Emerging Contractors are unable to access finance due to lack of knowledge of funding institutions and work programming. They are unable to raise and manage cashflows because they lack financial management skills and starting capital. They lack experience and do not have technical educational background. Material and equipment is sometimes delivered late due to not being able to pay on time for material and plant as well as having to wait for hired plant to be made available. They are unable to raise sureties and guarantees, late payments by clients not honouring certificates due also delays the delivery time of construction projects (Thwala and Phaladi, 2009). Due to the high construction professional costs, emerging contractors are not able to hire and pay competent and qualified personnel market related salaries. Poor planning leads to project delays. Lack of business and financial management skills may lead to liquidation. Inconsistent work flow due to high competition cripples business finances and poor and incorrect pricing methods of critical items leads to project failures and compromised quality. Political influences and incorrect procurement methods affects project delivery time. Little or no supervision from skilled personnel leads to mistakes to that could be avoided. Complex designs that are sometimes not detailed enough nor suitable for certain sites becomes a problem facing emerging contractors (Aiyetan, 2010). Therefore, this study is initiated to evolve strategies and solutions to minimise these challenges.

1.6. CONTEXT OF THE STUDY

This section discusses the theories which this study considers. They are:
The Agency theory
The Pecking-Order theory or Framework, and
The Theory of Modern corporate finance.

The Agency theory deals with business owners and other people who are interested in it, for example managers, banks, creditors, family members, and employees of the particular business. The agency theory states that the day-to-day management of these businesses is conducted by the managers who are appointed by the business owners, also known as shareholders in those particular businesses. This theory has a principle that any financial transaction must involve two people who are acting in their best interest but have different expectations (Bomberg and Spremaan, 2012).This becomes the first of many stumbling blocks for the growth and development of emerging contractors because possibility of theft is very likely to occur. Secondly, tension is likely to be developed between the business owner and the manager who has been employed to look after owners' interest but ends up being in competition with his employer.

According to the Pecking–Order theory, which is considered in relation to small businesses; business owners prefer to use savings, then liability, followed by different forms of finance such as convertible loans, and last of all by using equity that is issued externally which results in bankruptcy, agency costs, and imbalanced information that play little role in affecting the capital structure of a company (Lambert *et al.,* 2011).

The Theory of modern corporate finance on the other hand states that this theory was not created for small businesses. For instance, the type of companies for which this theory was created is presumed to have access to external market reserves for debt and equity. The shareholders have little and manageable liabilities and also own diverse portfolios. A question that people who are interested in applying for business finances for small business is: Will the existing theory of corporate finance still be applicable? And if not, in what way would the theory for small business financial management differ? A starting point is to create a new plan for small business financial management and to identify characteristics of small businesses that are not considered in the modelling of the large companies because they are deemed unimportant or unnecessarily complicated (Donald *et al.,* 2014). This is unfortunately not the case in the construction industry when it comes to emerging contractors. Emerging contractors usually use their own savings that have been acquired over the years as start-up capital or acquire debt in the form of loans from banks or family members (CIDB, 2011). They do not have "easy access to finances" like the big well established companies nor have assets to use as collateral at financial institutions to access finances.

Business management, financial management and strategic planning play a vital role in the sustainability and growth of small businesses. Bryson (2017) describes strategic planning as a process where an organisation decides, in limited, simple terms, its position in the world presently, and where it plans to go in the future. It is a method of surviving, the glue that binds the organization together and the voice that informs the company culture, the norms, standards and code of conduct of the organisation. (Boone, 2010) also states that strategic planning is basically what drives the operation of the business. Once an organisation knows why it is functioning, it is then able to determine what is required to get to where it needs to go, including where to position its finances, how to plan for its staff needs, and where to obtain investments and financially plan for the future. Financial planning is all about strategically positioning limited resources such as money, employees and equipment, over time to reach the main goals as set out in strategic planning.

1.7 CONCEPTUAL FRAMEWORK

According to Lambert *et al.* (2011), small businesses use savings, then liability, followed by different forms of finances such as convertible loans, and last of all by using equity that is issued externally which results in bankruptcy, agency costs, and imbalanced information that play little role in affecting the capital structure of a company. There are various relationships in business between shareholders and managers and between debtors and creditors. These relationships are not always friendly and smooth sailing; as they are concerned with conflicts, or conflicts of interest between managers and shareholders (Bomberg ans Spremaan, 2012). Donald *et al.* (2014) also states that small business have financial challenges that are different to those experienced by larger firms such as access to finances, raising and managing cash-flows, inability to obtain credit from suppliers and loans from banks and overall financial management.

According to Donald *et al.* (2014), the theory of modern corporate finance was not developed for small businesses due to the unique characteristics and challenges that small businesses face as compared to large established companies. It is these special qualities of small businesses that make different kinds of financial problems or cause small businesses to look at the same set of problems in a different view. This may result in financial decisions being made differently as well as various types of financial arrangements with institutions and practices. In the case of an emerging contractor, this may mean having to choose which financial institution to approach for funding or

obtaining guarantees, which banking institution, accountant and financial adviser handles and monitors their account(s), which project will give the highest profit and which is running a loss and; ultimately having the choice on whether to tender on certain projects or not.

Cheriyan (2013) states that the Agency theory suggests that a company is seen as a mixed connection of contracts (loosely defined) between resources and shareholders. An agency relationship comes into being whenever one or more shareholders, employ one or more managers, to do the work and make decisions on behalf of the company. The primary agency relationships in business are those between shareholders and managers and between debtors and creditors. These relationships are not always smooth sailing as they are concerned with conflicts, or conflicts of interest between managers and shareholders.

In the context of the South African construction industry, these conflicts arise between stakeholders who have different roles to play but one target to meet. Considering the millions of rands that are injected into the industry yearly and challenges that are faced by the construction industry, conflict at some stage of the project cycle is inevitable (Thwala and Mofekeng, 2012). Conflicts, if not resolved in time result in numerous delays and these delays have a direct or indirect effect on project finances. Bomberg and Spremaan (2012) are of the view that there are many contributing factors that eventually lead to these conflicts among stakeholders and they may be between clients and contractors, consultants and contractors, clients and consultants, clients and community leadership structures, contractors and beneficiaries (community members) or among all the stakeholders.

1.8 CHAPTER OUTLINE

Chapter 1

This chapter introduces and provides a background on issues relating to the research problem by firstly introducing the problem from a wider context and narrowing it down to the South African setting. The second part explains the research problem and this is followed by the research questions, aim of the study, objectives of the study, significance of the study. The third part explains the context of the study which then becomes the building up of the conceptual framework. The fourth part of this chapter provides a brief discussion of the research's contribution to knowledge as well as the chapter outline.

Chapter 2

This chapter is a review of the literature. It reviews the South African Construction Industry, the Challenges facing emerging contractors, the Causes regarding challenges of emerging contractors in funds management, the Impact of emerging contractor challenges on project delivery time, Stakeholders contribution on success or failures of projects, Effects of lack of planning by emerging contractors as well Business management, the Financial management and Strategic planning of emerging contractors in the building industry in South African and in developing countries.

Chapter 3

This chapter starts by defining what research is and the different types of researches that are conducted. It also discusses the research method employed, population and sample size determination, the process and procedures for administering the research instrument, the data collection and analysis used as well the justification of the research method used.

Chapter 4

This chapter discusses the research findings and data analysis of the study. The data obtained from the questionnaire survey is presented and analysed with tables and figures. Reliability tests are done and results are also discussed and summarised.

Chapter 5

This chapter is developed to address the fifth objective identified in chapter one by providing a solution to the challenges facing emerging contractors. Existing contractor development programmes are reviewed as well as their effectiveness in the development of emerging contractors. A new programme is proposed to help improve emerging contractor financial management practices and skills development with the aid of a flowchart. The flowchart components are discussed and a questionnaire is used to validate the flowchart. Results of the validation questionnaire are analysed and discussed.

Chapter 6

This chapter addresses the summary of findings, conclusions relative to phase one questionnaire; conclusions relative to validation questionnaire; recommendations for phase one questionnaire; recommendations for validation of the flowchart and recommendation for further studies.

CHAPTER 2: LITERATURE REVIEW

Chapter 1 introduces and defines the research problem as being the financial management challenge experienced by emerging contractors in South Africa. This chapter also explains that financial management is the main contributor to poor project delivery and delays, insolvency of companies and the main hindering factor to growth and development of emerging contractors. It also contextualises emerging contractors and the challenges they face in the manner in which they operate and provide a holistic view of some of the challenges they encounter. The Chapter is based on the view proposed by Leedy and Omrod (2014) that an associational and historical perspective relating to the problem of study in question is needed to identify what other scholars have found in similar studies, and how they approached some of the teething problems relating to the concepts, theories and methodologies relevant to the topic under investigation.

Chapter 2 is therefore divided into four main parts, the first part discusses the holistic view of the South African construction industry including the establishment of the construction industry development board; the procurement policy and its impact on emerging contractors; the financial challenge facing emerging contractors; the quality of projects produced; and the dependence of developing countries on international construction firms. A comparative performance of the South African industry and international industries is given. The second part discusses the challenges of emerging contractors, the third part discusses the causes regarding challenges of emerging contractors in funds management and the fourth part discusses the impact of emerging contractor challenges on project delivery time. The fourth part also explores the contribution of stakeholders on success or failure of projects; the effects of lack of planning as well as business management, financial management and strategic planning of emerging contractors. This chapter ends with a presumption that emerging contractors experience different challenges, these challenges have underlying causes and an impact which directly affect the contractor's management in different areas of the business, growth and development.

Chris Kirubi, Centum Investment, Kenya, said "*Business is always a struggle. There are always obstacles and competitors. There is never an open road, except the wide road that leads to failure. Every great success has always been achieved by fight. Every winner has scars. The men who succeed are the efficient few. They are the few who have the ambition and will-power to develop themselves. So choose to be among the few today*."

The decision to start a business is only the first step that entrepreneurs make towards realising their goals. This step needs to be backed-up by proper business registration documents, securing space for identification as well as to conduct the business operations. The business needs to have a valid business account registered with an approved financial institution, it also requires the owner to offer goods or services to its target market that are unique from all the other similar businesses as well to secure finances for the business to operate. Financial discipline, planning and management are key features of most successful businesses and every entrepreneur must strive to possess these attributes (Ssegawa, 2012). Financial planning then becomes a process of organising, placing and managing the required finances for the smooth running of the business (Overton, 2008). Construction companies emerge on a daily basis which has pushed up competition and has resulted in some of the contractors reducing their profit margins greatly. Data from the Construction Industry Development Board Annual Report (2015/16) indicates the increase in the number of construction companies over the years. The total numbers of construction companies registered from 2004 to 2016 was: 148 690.

The construction industry requires a huge capital to operate, entrepreneurs find themselves using their savings or getting loans from financial institutions or family members to use as start-up capital. This concept applies to many emerging contractors in the construction industry of South Africa. When finances are involved, it is paramount that the business owner acquires business and financial management skills so as to be able to manage business finances and resources effectively and efficiently. Development of business and financial management skills goes hand-in-hand with strategic planning. This is of utmost importance to ensure success and profitability of small and large businesses. Emerging contractors also need to adopt these techniques to ensure they run sustainable businesses. However, due to the complexity of the construction industry, there are many factors that determine success or failure of an emerging contractor as well as the projects they run. This sector has, through all the challenges it is faced with, produced a number of entrepreneurs who play a vital role in the growth of the economy of the country. It is one of the biggest employing sectors for both educated and uneducated individuals, but is faced with numerous challenges that cripple the growth and sustainability of emerging contractors. According to Mashatole (2014) small businesses make up at least 60 % of all employment and 40 % of output. These businesses are mostly accessible by low income earners in our societies and are a vehicle by which economic opportunities are gained. A study conducted by Norton (1991)

found out that 75% of the small enterprises make financial decisions within a hierarchy or pecking order model. Holmes *et al*., (1991) concur that Pecking-Order Theory does not change with small business sectors because they are managed by owners who do not want their ownership to be diluted. Businesses that are managed by owners usually prefer to hold on to financial gain because they want to maintain control of assets and business operations. In the case of the South African construction industry, emerging contractors are faced with numerous challenges that impede their growth and at times makes it impossible for their companies to be sustainable. Emerging construction companies play a big role in the economy of the country. In June 2007, the industry employed 543 686 which included 35.6% (193 786) of the total number working for large enterprises, this was followed by the micro enterprises employing 30.8% (167 620) and this resulted in an increase of 24% in the last quarter of 2007 (Stats SA, 2007).

Construction industry has a huge share in the capital formation of South Africa. In most developing countries, construction industry has a big share in the gross domestic product. The construction industry is usually the second largest sector that employs people after agriculture (Nordberg, 2005). Datta (2000) concurs that the construction industry employs people with different levels of skills which includes unskilled labour to semi-skilled, skilled and specialists. The size of capital and labour figures in the industry reflects the country's economic growth or decline. When the sector increases, more jobs are created and this results in growth and stability of the economy (Datta, 2000; Palalani, 2000; Materu, 2000). Contractors, Consulting Engineers and Government sectors play a vital role in developing the construction industry. In many developing countries, like South Africa, the construction industry is not well developed and as a result faces numerous challenges on a daily basis. Nordberg (2005) states that when the industry does not fulfil its role in development, it presents serious challenges in infrastructure development and delivery of services. Nordberg (2005) further argues that there are many reasons that make the sector to be unable to produce and maintain performance and these include, having access to finances by contractors, lacking in financial and business management skills, insufficient training of Contractors, government policies and actions that are put in place.

Adding to the above statements, current studies indicate that although emerging contractors are important. They are constantly threatened with failure. Statistics also indicate that at least three out of five companies fail within the first few years of existence (Thwala and Phaladi, 2009). According to Thwala and Phaladi (2009) "lack of effective

management during their early stages is a major cause of business failure for emerging contractors and some key features of emerging contractors are that they are largely unregistered, operate in the informal sector of the economy and have very little formal business systems". Thwala and Phaladi (2009) also argue that these challenges include, amongst others, lacking resources to train contractors in managing finances, using poor procurement methods; as well as lacking capacity to manage resources and to prepare managers to manage their business excellently and efficiently. In addition, the failure of emerging contractors to run successful businesses in South Africa has been explained by Rwelamila, (2002), Croswell and McCutchen (2001), Mphahlele (2001), Ofori (1991), Miles (1980); and International Labour Organization –ILO- (1987) as being unable to raise sufficient finances and obtain credit from suppliers; being unable to employ competent and qualified workers; poor pricing methods in tenders, lacking in tendering and contract documentation skills; lack of mentorship opportunities; being used as fronts for established contractors; lacking entrepreneurial skills to run businesses; lacking in higher educational training; lacking resources for constructing large and complicated construction work; not possessing technical, financial and managerial skills; and delayed payments for completed work, are some of the alarming realities facing emerging contractors.

These challenges and obstacles usually lead to a poorly developed construction industry in many developing countries, which ultimately impedes growth and sustainability of emerging construction companies. This study aims to identify and assess the root causes of challenges of emerging contractors related to finances; it will also identify and assess the impact that these challenges have on project delivery time, the effects of lack of planning with respect to funds by emerging contractors as well business management, financial management, strategic planning; procurement procedures and related policies, the Construction Industry Development Board as well as further identifying and assessing current educational and mentoring programmes aimed at empowering emerging contractors. Lastly, a flowchart will be developed to mitigate the challenges facing emerging contractors in funds management.

For the purpose of this study, an emerging contractor is defined as any Contractor registered from (CIDB) level 1 to (CIDB) level 5, that possess potential to be recognised for appropriate development support and progression through their grading within cidb programmes (CIDB, 2011).

“An emerging contractor will also be defined as a sole trader, partnership or legal entity which complies with the statutory practices, is registered with National Home Builders Registration Council (NHBRC), with a CIDB grade between 1 and 3 and is under mentorship or an incubator programme” (Department of Human Settlement, Emerging contractor concept paper, 2010).

2.1. The South African Construction Industry

2.1.1. Historical Background

The CIDB (2004) states that the South African construction industry is a major role player in economic and social development and it provides the physical infrastructure. It is a pillar for economic activity and also an employment provider. However, there are developmental and transformation challenges that this industry faces. These include: Deriving better strategies on how the public sector spends money on physical infrastructure development and maintenance; upgrading systems of labour absorption, labour relations and stabilizing jobs; increasing the rate of transformation and access to opportunities, finance and training; minimizing the speed at which HIV and AIDS impacts the construction industry and being certain that international competitiveness is maintained.

Environment for Reconstruction, Growth and Development in the Construction Industry created a room for the CIDB to be started. The industry is one of the biggest contributors to economic growth in the country like in many developed and developing countries; it contributes about US $7 billion to GDP per year Gasa, *et al.*, (2002) and it provides the infrastructure that is needed for other sectors to flourish as well as play an important role in generating employment options for all types of workers including unskilled, semi-skilled and skilled workers, (Palalani, 2000, Datta, 2000). In South Africa, this sector is made up of two kinds of construction companies i.e. Established and Emerging Contractors. Established construction companies were started mostly during the apartheid regime and benefited the most from the local markets which were not exposed to external competition due to sanctions that were imposed to South Africa (Murray and Baiden, 2002). Those established companies are now international competitors and they compete with international contractors for work that is not in the country. Established contractors these days depend on international contracts because the local market has shrunk and competition is extremely high. The government policies and preferential

procurement practices are designed to grow emerging contractors for small jobs and do not economically benefit to big companies due to small profits they give (Murray and Baiden, 2002). It has been stated that minimal participation of established contractors in local markets negatively impacts on the growth and development of the construction sector. Government policies such as, the Preferential Procurement Policy Framework Act (PPPFA) encourage the expansion of emerging companies and these companies are mainly owned by non-whites who were historically disadvantaged and denied from participating in higher disciplines of the construction industry during the apartheid regime (Murray and Appiah-Baiden, 2002). Murray and Appiah-Baiden (2002) further state that it is important for South Africa to equip and grow small companies because they play a huge role. Emerging companies bridge the gap in the industry because they are always ready to do small and odd projects that established companies do not find profitable.

It is evident that the services of Emerging Contractors are required in the construction industry and the development of this industry is critical for their sustainability (Ssegawa, 2012). On the same view, emerging contractors should not only be seen as small businesses who will remain in this way. Government and private sector must provide support and mentorship programmes that will assist companies to develop, be sustainable and competitive in the world market in the near future (Thwala and Phaladi, 2009). Even if these emerging contractors do not reach the level of established contractors in terms of size and resources, they must still be able to provide services of equal standard. Emerging businesses should have the means to construct medium to large projects when training and support is provided to them. They should also be equipped to employ and keep skilled employees just as their established counterparts (CIDB, 2011). It cannot be disputed that the Preferential Procurement Policy seems to focus and give attention mostly to emerging contractors whilst established companies are ignored. For growth and prosperity to be seen in the industry, it is important to ensure that both the needs of established and emerging contractors are catered for because both sides contribute to the economy in different ways.

Government policies such as the Preferential Procurement Policy Framework Act (PPPFA) were designed to balance out opportunity levels and are applied in the whole country. Emerging Contractors, however, still encounter numerous challenges which affect their growth and performance negatively. Factors that relate to accessing finances, delayed payments from clients, procurement practices and policies, unsustainable work opportunities and limited training and mentorship programmes are

some of the hindrances that contribute to project delays during the project implementation phase. Some of the problems that have been mentioned are discussed below.

2.1.2 The Establishment of the Construction Industry Development Board

The CIDB was established in 2001 "*to provide leadership to stakeholders and to maintain sustainable growth, reform and improvement of the construction sector for effective delivery and the industry's enhanced role in the country's economy*" (CIDB, 2014). The primary goals of the Board are to ensure that the built environment is capable of meeting development needs of the whole society. It is also to ensure that access to the mainstream economy for sectors of society that have been previously disadvantaged by the policies of apartheid is made possible within the construction industry. The main goal is to ensure that the construction industry is competitive and meets global standards of performance in terms of quality, productivity, safety, health and the environment (CIDB, 2004). The CIDB was started in line with the 1999 Construction Industry White Paper and the Construction Industry Development Board Act, (Act 38 of 2000). The Act defines the CIDB as a statutory body (CIDB, Construction Registers Service, 2000).

2.1.2.1 Interventions by Construction Industry Development Board

The interventions of the CIDB will be discussed in terms of the construction register service and the code of conduct.

Construction Registers Service

Interventions of the CIDB are ways in which the construction industry is addressing challenges as an overseer of the industry. The interventions by the board include, carrying out research, arranging workshops for contractors, national conferences with different construction stakeholders and academics so as to provide platforms to engage in dialogue and to find solutions to the problems encountered in the industry. The CIDB evolved and is implementing construction register service so as to register all contractors who undertake construction work according to their respective trades and capacity (CIDB, Construction Register Service, 2014). The register provides information for all contractors who operate in the industry with regards to their size, capability and distribution. The registration of contractors is a response to some of the contractors challenges mentioned in this chapter, such as unsustainable work flow, high failure rate, rigid and long procurement processes. According the CIDB, the register is to: minimize

risk management during the tendering process; reduce the burden of administration associated with the awarding of contracts; reduce the costs of tendering for both clients and contractors; make access by the emerging contractors to work and development opportunity effective; enable assessing the performance of contractors in executing contracts and provide performance record for contractors; promote minimum standards, regulate the behaviour and best practice of contractors; store and provide information regarding the size and distribution of contractors operating in the industry, their volume, nature, performance and development of contractors and target groups; and provide access by the private sector and facilitate private sector procurement (CIDB, 2008).

Time is wasted when contractors prepare tenders and when those tenders are adjudicated by clients for awarding of contracts because there are volumes of tender documents that are evaluated from contractors who are not capable of implementing construction work tendered for. With the register in place, contractors are able to tender for construction work within the specified categories and grades. The transparency of the register makes information about the Contractor's financial and technical performance available and it also makes it easy for the CIDB to establish a contractor's track record and monitor performance on a continuous basis (Construction Register Service, 2014). In instances where contractors are underperforming, problems are identified and necessary training is be offered. Registration of all public and private sector construction projects is also undertaken for projects valued from R30 000.00 including vat. The aim of the register "*is to gather information on the nature, value and distribution of public and private sector projects. It also promotes transparent practices that shape healthy, sustainable and competitive industry*" (Construction Register Service, 2014). The register is a source of information for the construction industry and benefits decision makers, clients, service providers, contractors and the public in understanding the functions of the industry. It also makes information available and knowledge that will lead to the improvement of the service. It improves financial planning and allows stakeholders to identify the cost of activities that are undertaken and ensure that better and informed decisions are taken to improve the use of resources to deliver services (Pautz *et al.*, 2002).

The Code of Conduct

"The Construction Industry Development Board is a Schedule 3A public entity established in terms of the Construction Industry Development Board Act, 2000 to provide leadership to stakeholders to stimulate sustainable growth, reform and

improvement of the construction sector for effective delivery and the industry's enhanced role in the country's economy" (CIDB: Code of Conduct, 2003). The Code of Conduct is a tool that is developed by CIDB to ensure transparent, honest, good behaviour that complies with legislation and regulations in procurement practices by all stakeholders in public and private construction related businesses (CIDB: Code of Conduct, 2003). The development of the code of conduct was to respond to irregular behaviour, such as, fronting for established contractors, the abuse of subcontractors by main contractors in payment procedures, nepotism and favouritism in the award of tenders by public and private sectors (CIDB Best Practice Guide 2004, CIDB 2005). How stakeholders conduct themselves in the industry impacts on the ability to deliver value, perform efficiently and competitively (CIDB, Code of Conduct, 2003).

2.1.3 The Procurement Policy and its impact on Emerging Contractors

The Constitution of South Africa (Act 108 of 1996) requires that the public procurement system to be "fair, equitable, transparent, competitive and cost effective." It also allows for the establishment of a procurement policy to provide for "categories of preference in the allocation of contracts" and "the protection or advancement of persons, or categories of persons, disadvantaged by unfair discrimination" on provision that the policy is implemented accordingly with a framework provided for in the national legislation.

The Preferential Procurement Policy Framework Act of 2000 (Act No. 5 of 2000) arises from the Constitutional provisions to provide a framework to implement preference points system which requires the transparent awarding of preference points and the limitations of potential economic rents associated with such a system. Public sector departments and corporations use the procurement policy as required by the Act (PPPFA). According to the Act, preference is given to historically disadvantaged companies by different public sector entities when tenders are awarded. They also enables public sector to use an unbundled system. In an unbundled system, a project that is performed by one contractor is divided to small portions and performed by different contractors so that more companies are able to benefit (CIDB, 2004). This unbundled system is advantageous in the sense that it provides business opportunities to many companies at once and thus expands employment opportunities and development of emerging contractors is encouraged.

As much as the PPPFA favours Emerging companies, it has a lot of disadvantages in the construction industry. For instance, it prevents established contractors from participating because small contracts in big firms stretch management capability (Murray and Appiah-Baiden, 2002). Emerging contractors view unbundling of tenders as a process that brings minimal profits which have a negative impact in sustaining their companies. It has also been discovered that emerging contractors and the public sector clients lose on unbundled projects. It also results in responsibilities being divided inappropriately, contractual risks are increased as well all administrative requirements due to limited capacity in the public sector. This in turn leads to an increase in the costs of designing and supervision by consultants as their scope of work is increased (CIBD, 2004, and CIBD, 2005).

In a number of cases, consulting engineers are usually not paid for the extra workload that they incur in supervising additional contractors who are imposed on them. Service level agreement with consultants are signed before the tender process is undertaken, and at that stage, the number of contractors to be employed and supervised is not known. Procurement of tenders is a major challenge in projects that do not allow for escalation especially when public clients extend the tender validity period and this is becoming a norm in many public sector entities (CIBD, 2005). The supply chain management and technical departments responsible for tender administration delay in adjudicating and awarding tenders. They also request contractors to retain project amounts quoted on the tender until procurement administration process is completed. The increase in the costs of materials either on a monthly or quarterly basis, results in outdated prices and limited opportunities for making profit when the validity period is extended by clients (Mbonane, 2005).

In other instances, when consulting engineers are responsible for compiling adjudication reports, recommendations made in tender adjudication reports by consultants are ignored (CIDB, 2005). It is not easy for public sector employees to assess the consultant's selection criteria in the current procurement system as it is known that some consultants have negative attitude towards some emerging contractors and conclude that they are failures in the field, as a result, they do not want to work with them due to past encounters (CIDB Best Practice Guide, 2004). Mbonane (2005) is of the view that procurement processes are flawed because everyone is eligible to tender; it then becomes difficult to choose between committed and fly-by-night contractors.

When competition is based on low tender price versus best value, innovation is discouraged (CIBD 2005; CIBD 2004; Gasa *et al.*, 2002). Awarding contracts to the lowest tenderer opens room for selecting contractors who may fail to deliver expected results because the contract amount cannot cover project costs and needs. This also adds to the corruption encountered as some government officials and consulting engineers communicate expected prices to their favoured contractors. The lack of uniformity in procurement requirements is another hurdle that the industry is faced with and this at times proves to be a difficult concept for emerging contractors to grasp and follow in complicated contract documents (CIDB Best Practice Guide 2004, CIDB 2005).

Mistakes are made during the pricing of Bills of Quantities (BOQ) and contractors charge low prices for critical items. They use unrealistic rates and the whole BOQ becomes arithmetically unbalanced. The procurement process is lengthy, it increases tender costs and contribute significantly to delays. Adjudication and awarding of tenders is delayed because clients receive a large number of responses from contractors who do not have the capacity to successfully implement the project. The CIDB grading system did not help the situation initially, instead it made any emerging contractor who was in that band grade required for the project eligible to submit a tender, thus putting administration pressure on clients. The Standard for Uniformity in Construction Procurement was then introduced and the Contractor Grading System in Public Contracts was implemented. This system is driven by the CIDB and has improved procurement efficiency and predictability to the benefit of both clients and industry although there are still administrative challenges experienced (CIDB, 2005).

The uniformity in procurement has reduced delays and decreased the costs associated with cancelling tenders or re-tendering except in exceptional cases where delays are inevitable. The current procurement practices results in non-competitive selection of contractors. The preferential procurement practice prevents and limits innovation on the part of contractors. Rigid structures of the procurement processes do not reward performance but result in the Public Sector being bombarded by poor performing contractors. Rwelamila and Lobelo (2000) are of the view that unfavourable market conditions coupled with declining workloads and an increase in competition results in companies being forced to reduce fees. Emerging construction companies produce the quality of work tailored to suit the low price they have tendered with. The poor quality projects constructed by some emerging contractors has dire consequences because they are unable to get more work from the public and private sector and this hinders

sustainability and growth of these businesses. Poor workmanship produced by some emerging contractors is linked to administration challenges within government departments. It is for these reasons that procurement of public tenders is assessed in the manner explained below.

2.1.4 The financial challenge facing Emerging Contractors

The small size of Emerging Contractors limits their capacity to raise sufficient working capital that will sustain them until their first claims are paid out due to the magnitude of the projects they undertake. According to Materu (2000) emerging contractors are a world-wide phenomenon as similar companies are found in Japan (77%), United States (93%), Britain (89%) and West Germany (55%). Emerging contractors have also successfully completed the construction of many projects despite being limited by size, capacity and resources. Promoting and supporting these companies leads to growth and sustainability of the industry. The majority of emerging construction companies in developing countries are still not able to take care of insurance or secure sufficient credit with material suppliers and finance projects when clients delay in paying them (Nordberg, 2005). In agreement Materu (2000) argues that delaying payments has a negative impact on business cash flows and leads to insolvency in most cases. He further states that in countries like Tanzania, there are inadequate finance and credit facilities for businesses. Emerging Contractors rarely have collateral to use and the interest rate on overdraft is often too high. Additional to this, tax that is paid by these companies is quite high because there are no clear guidelines on how value added tax should be applied on construction contracts (Materu, 2000). Another contributing factor is the lack of resources which leads to the contractor being limited in terms of project scope he is able to undertake. This lack in resources usually results in project delays and sometimes failure. It therefore becomes practically impossible to do larger projects without the required resources and hence growth potential is limited only to small projects.

In Tanzania, emerging contractors perform work to the value of $ 125’000.00 (Materu, 2000). Similar challenges are experienced in Botswana and South Africa and this hinders their potential to grow (Palalani, 2000; Murray and Appiah-Baiden, 2002; and Nordberg, 2005). Datta (2000) is also of the view that the construction industry is unreliable and profit margins are too low to sustain healthy development of the small companies. As these different authors have stated, there are numerous challenges of

accessing finances and the reality in South Africa is that, financial institutions do not have much confidence in lending money to emerging contactors as the majority of them do not have good track records or traceable references or are listed in credit bureau. It then becomes extremely risky to lend emerging contractors start-up capital because there is not much guarantee that it will be paid back as most of them become insolvent during first two to five years of existence (Datta, 2000; Palalani, 2000; Murray and Appiah-Baiden, 2002; and Nordberg, 2005).

Another hindrance in developing the construction industry is how much clients and public sector rely on selecting engineers and contractors based on low tendered prices. Datta (2000) concurs that this is a major barrier to improvement. On the other hand, the lack of fiscal discipline, poor business and project management skills combined with a bad attitude of neglecting finances contribute to poor performance of emerging contractors (Ssegawa, 2000). Research undertaken in Botswana indicates that the many construction companies use pure cash even for paying of large amounts. This method is preferred by material suppliers who have experienced a serious challenge of bouncing of cheques in the past (Ssegawa, 2000). A similar challenge is experienced in South Africa whereby suppliers want upfront payment before any material or plant is delivered to site. Raising this much needed money becomes a serious problem for many emerging contractors as financial management methods are ignored in many small companies. It was also discovered in a study conducted in Botswana that many emerging contractors do not use qualified accountants to do their books. 40% of the companies use unqualified people to manage their business accounts and 60% of the companies use qualified bookkeepers instead of accountants. In the South Africa construction industry, this is not any different because a lot of emerging contractors are owing tax, or are not paying their workers and suppliers on time due to a backlog of debt acquired in previous projects or years. Majority of emerging contractors find themselves in a tight corner due to lack of proper financial planning. It is therefore concluded that mismanagement of finances contribute to the perception that the construction industry is a high risk business hence financial institutions are sceptical about lending contractors money. In addition, poor financial management is a root cause of many business failures and project delays (Ntuli, 2015).

2.1.5 Quality of the construction industry products

The underdevelopment of the construction industry in South Africa and in many developing countries leads to the poorly constructed infrastructure projects. Palalani and

Materu (2000) concur that in Botswana and Tanzania, the quality of workmanship for services rendered is very unsatisfactory. Palalani and Materu (2000) further state that contractors produce poor workmanship because they either want to make more profit from the project or there is a lack of understanding in the what is required due to not having sufficient project knowledge. When companies have limited resources such as finances, equipment and human resources, project delays are inevitable. According to Datta (2000), in Tanzania, Zambia, Zimbabwe and Botswana, at least 40% of construction has to be redone, 8% of total project costs are used for accidents that occur on site and 20% - 25% of materials is wasted. These are some of the contributing factors that make the construction industry to be viewed as a poor investment. In other cases, site consulting engineers or construction project managers are either overloaded with projects or do not have the necessary and required experience or are under-qualified or are not committed to the project they are constructing. The lack of commitment at times stem from lack of support from employers. It is becoming normal for consultants and contractors to carry on for months without being paid by clients. In such cases, consultants usually abandon sites or are bribed by Contractors to authorise poor workmanship in projects Palalani (2000). In other instances, consulting engineers are the main cause of poor performance because they issue insufficient information to contractors and poorly supervise projects. Poorly supervised work usually results in poorly constructed projects (Palalani, 2000).

In South Africa, the quality of work produced by emerging contractors is sometimes appalling. In the construction of low cost housing, for example, cracks are seen on walls and floor even before the whole structure is completed (Mbonane, 2005). Ncwadi and Dangalazana (2005) state that by the time these structures are supposedly complete for occupation, they are in such a dilapidated state that they become a health hazard to the occupants and the type of materials used is the cheapest that you find on the market. Most of these emerging contractors do not show any commitment to the work they do, hence the poor workmanship in the completed products and they mostly lack the required skills and experience (Malongane, 2014). On the other hand, committed clients and consulting engineers and emerging contractors who have a good educational construction background and experience produce work of a high standard which is according to specifications, within budget on the specified time (. This is also coupled with larger profits being obtained and quality of work being upheld. It is therefore concluded that Emerging contractors have capabilities of producing high quality work.

2.1.6 The Dependence of Developing Countries on International Construction Firms

The underdevelopment of the construction industry in South Africa as previously mentioned cannot be denied as this industry is largely dominated by the international contractors. The lack of bridging finance, capacity constraints, technological knowledge and limited resources of emerging contractors needed to implement highly technological construction projects is filled by international companies (Mbonane, 2005). This gap in skills and advancement of technology is filled by international companies and they implement construction projects in many developing countries. The positive side of hiring foreign companies, is that are able to provide bridging finance and thus makes it possible to implement several projects which otherwise would have failed. Ofori (2000) is of the view that international companies bring into the country investment from abroad and this leads to an increase in construction demand and create work opportunities which is at most times is not possible with local companies. Competition for projects among international companies reduces the cost of the project. Moreover, engaging international companies advances the scope for the transfer of technology so as to develop and upgrade of local companies (Ofori, 2000).

Thwala and Phalani (2009) state that although there are advantages in engaging international companies, there are also disadvantages within the process. South Africa has been over dependent on international companies and this has resulted in the industry not investing much in technology, innovation and research development until recently because these services are easily obtained when they are required from international companies. Moreover, majority of developing countries do not invest much in developing the capacity and capability of emerging contractors. This results in small contractors constructing only small projects while the larger projects are given to international construction companies (Nordberg, 2005). Palalani (2000) argues that although the involvement of international companies is necessary in the current circumstances, it also has a negative impact in the long run because these foreign companies dominate in consulting, contracting and supply while not contributing to the country's socio-economic development. In Botswana, for example, emerging contractors have been active in the construction sector for over 20 years, but they are still struggling, surviving largely through special projects. Similar problems are also encountered in Tanzania (Palalani, 2000, Materu, 2000).

Ofori (2005) is also of the same view that the international companies dominate the construction industry of developing countries and transfer a very small portion of technological skills, if any and this makes it difficult to develop local companies. International companies utilise strategies that prohibit skills transfer and support of the host country's effort to develop their industries because they see the whole process as promoting future competitors. Local companies are also in most instances not in a position to benefit from technology transfer or to subsequently utilize the acquired expertise (Ofori, 2000; Zwadie and Langford, 2000). Ofori (2000) therefore, proposes that since we cannot escape globalization, strategic alliances between construction firms from developing countries and international companies are required for the benefit of both sides. He also argues that in India, skilled people and foreign companies have set up skills-intensive operations such as design and information technology offices in the country. However, few Indian construction firms are successful overseas. Ofori (2000) is of the view that strategic alliances and partnerships will allow companies to work jointly in modern construction business and technology development. This system has been realized in China and has produced several international contractors but foreign firms are also active on its market. Although international companies help in bridging the gap in the South African construction industry, skills transfer and upliftment of local contractors should be a requirement in such contracts.

2.2 CHALLENGES FACING EMERGING CONTRACTORS

There are many challenges that face emerging contractors in the construction industry. They range from unique characteristic that small businesses possess and these challenges at times lead to business and project failures. Mashatole (2014) identifies these challenges as: being unable to obtain credit from material and plant suppliers, inability to raise and manage cashflows and to secure bank loans; inability to employ competent staff due to affordability; poor skills in contract documentation; being used as fronts by established contractors; lacking entrepreneurial skills; lacking proper training; Lacking resources for large and complex construction work; lacking skills in technical, financial, contractual, and managerial areas and being paid late for completed work which ultimately causes project delays.

2.2.1.1 Inability to get credit from material and plant suppliers, inability to raise and manage cashflows and to secure bank loans

Emerging contractors struggle in obtaining and raising finances to start and run projects from banks due to not having sureties or collateral that banks hold on to when payment is not received. Their inability to raise funds upfront leads to suppliers being very sceptical about giving material and plant on credit due to fear of not getting paid. It also stems from not having a good credit record (Mashatole, 2014; Kulemeka, Kululanga and Morton, 2015).

2.2.2.2 Inability to employ competent staff due to affordability

The majority of emerging contractors use unqualified personnel mainly because they cannot afford to pay qualified staff market related salaries and wages (Mashatole, 2014) and (Thwala and Mofokeng, 2012). This becomes a big problem because incompetent staff make a lot of mistakes and end up wasting material, compromising quality and delaying the project all together.

2.2.3.3 Poor contract documentation skills

As a result of cheap labour and incompetent staff (Thwala and Mofekeng, 2012), contract documentation skills are lacking in most emerging companies. This results in incomplete documents, incorrectly filled documents and not understanding the importance of documents required by clients and consultants (Mashatole, 2014).

2.2.4.4 Fronting for established contractors

Competition is tough in the industry and projects are limited (Chilipunde, 2007). In order to obtain jobs and make quick money, established contracting companies use emerging contracting companies as fronts so as to qualify for functionality and certain prerequisite of projects. This becomes a challenge in the sense that no skills are transferred to emerging contractors in this fronting as most of the time upon appointment, they are bought out of the contract or get very little money out of the project because the actual work, plant, and material are supplied by the established companies (Kulemeka; Kululanga, and Morton, 2015).

2.2.5.5 Lack of entrepreneurial skills

The majority of emerging contractors lack entrepreneurial skills and this leads them to make decisions that affect the running of their companies (Mashatole, 2014 and Ntuli,

2008). The lack of these skills makes majority of these companies insolvent in the first few years of existence.

2.2.2.6 Lack of proper training

Little or no training in emerging firms leads to many mistakes being made because the owners and people who work in these have no idea how to do the work. This leads to poor products being produced which give a bad name to the industry as a whole. Other emerging contractors have no idea that training programmes are available to help with their growth and sustainability (Ofori, 2000 and Mashatole, 2014).

2.2.2.7 Lack of resources for either large or complex construction work

The challenge of not having sufficient financial resources leads to challenges in obtaining the correct plant and material for their respective projects. This becomes a challenge in the quality of work project produced due to cheap material or defective plant being used in most projects (Palani, 2000; Memon, Rahman, Abdulah and Azis, 2011 and Mashatole, 2014)

2.2.8.8 Lack of technical, financial, contractual, and managerial skills

According to Mashatole (2014, the lack of technical, financial, contractual and managerial skills are some of the biggest obstacles facing emerging contractors. All these skills seem to be lacking in a lot of these firms and are what determine success or failure of their business. Emerging contractors need to acquire and master these skills if they are to run sustainable and stable business as well as to make a good name for them with suppliers, financial institutions and prospective clients.

2.2.9.9 Late payment for the work done which ultimately causes project delays

Late payments by clients is one of the challenges that cripple emerging contractors. For any project to proceed, it needs finances. When payments are processed late by clients, it delays the project as a whole because emerging contractors struggle in obtaining finances to complete their projects as well as finances to procure plant and material. This also dents the image of these contractors as they cannot honour their debts in time or get discounts if payment is done upfront. This in the long run affects even their planning because they are not sure when payments due to them will be paid out (Thwala and Phaladi 2009; Aiyetan, 2010 and Mashatole, 2014).

The study of Mashatole (2014) on causes of SMME failures states that even though SMMEs are very important in the country's economy, they experience a high degree of business mortality which impacts negatively on their ability to create sustainable employment opportunities in the long term. Operating capital is consequently lost in business ventures due to avoidable mistakes and problems. Problems related to accessing finance, poor quality products and services, lack of highly skilled and technical personnel, inappropriate training, lack of investing in research and development, absence of organized active and committed Contractor and Professional Associations, government policies and actions are some of the barriers that prevent growth of the construction sector of developing countries. These problems also contribute to under-development and failure of emerging contractors to implement projects successfully in the industry. Special attention needs to be placed on issues affecting Emerging Contractors, in their struggle to establish and grow their businesses.

2.3 CAUSES REGARDING CHALLENGES OF EMERGING CONTRACTORS IN FUNDS MANAGEMENT

Sunjka and Jacob (2013) state that projects are delayed due to a number of different factors. Each factor plays a significant role in the success or failure of a project and has either a positive or negative effect on the client, consultant, contractor or the beneficiaries of the project. These factors have been categorised in eight key points as follows: Clients' related issues; Contractor-related issues; Labour and equipment related issues; Materials-related issues; Consultant-related issues; Community related issues; Contractual relationship related issues and External issues. A project is affected and delayed by a number of causes of challenges as listed above and all the causes have sub-causes that will be explained below. All these causes of challenges interfere with project execution and delay many projects. These main causes of challenges discussed above also have sub-causes and are discussed as follows:

2.3.1 Clients' related issues

Clients are the initiators of projects but they also have their own challenges which could stem from having insufficient funds to do or complete projects or they delay paying for work done by not honouring the contractors certificate when due, to not having the required resources to do the work or not allocating enough time for projects to be performed or interfere with the work as the project proceeds by changing designs or by using consultants and contractors who do not have the expertise to perform their tasks.

Clients contribute either positively or negatively to funds management of emerging contractors. The constant flow of funds could assist in good planning of funds by these contractors. The lack of constant flow of funds may disrupt plans and lead to inadequate supply of materials, payment of wages and adversely affect the project. The factors that measure clients' contribution to poor funds management of emerging contractors as identified by Abdul-Rahaman; Takim and Wong Sze Min, (2009) and Sunjka and Jacob, (2013) are: inadequate finances, interfering with project performance, late payments or non-payment for completed works, allocating resources impractically, giving unrealistic contract duration, choosing wrong consultants and contractors, making decisions slowly and altering designs and change orders.

2.3.1.1 Insufficient funding

When funds are not sufficient or are released haphazardly during relevant phases of project execution, it results in difficulties and delays and payment milestones cannot made on time due to organizational lapses or bureaucracy (Sunjka and Jacob, 2013). Insufficient funding of projects leads to cash flow challenges, delays in delivery of materials and equipment to the site and in late payment of workers' salaries.

2.3.1.2 Interference with project performance

Senior management from clients interfere in project execution because of vested interest. They impose a changes in scope or force matters to have their preferred subcontractors to work on certain projects without due authorization or following the correct procedures (Vafaice *et al.,* 2010). This happens mostly if the management staff were instrumental in the appointment of the contractor.

2.3.1.3 Delay or non-payment for completed works

When agreed payment milestones are not honoured, project delays are inevitable and cash flow challenges affect the project implementation plan. In public sector projects, if the passing of the year's appropriation bill is delayed by the National Assembly, it could lead to delays in processing payments of Contractors and Consultants (Sambasivan and Soon, 2007).

2.3.1.4 Impractical allocation of resources

If finances and manpower is not enough to complete a project, it means clients have not properly assessed whether they have the required resources to complete such projects

and delays in such instances cannot be avoided (Nguyen and Ibbs, 2006). Impractically allocated resources usually lead to contractual disputes and profit margins are minimized.

2.3.1.5 Unrealistic contract duration

This is usually as a result of underestimating the size of the project, inexperienced personnel, wrong packaging of the contract document or political interference. Where the stated completion duration is not practical, the onus lies on the stakeholders to review the initial expected completion time and make necessary amendments (Sunjka and Jacob, 2013). Project duration should be determined by a lot of factors such as site ground conditions, project scope, complexity of the design and magnitude of the project, to mention a few.

2.3.1.6 Wrong choice of Consultants & contractors

Clients appoint Consultants and Contractors to execute their projects and if there are irregularities in selection process, under-qualified and inexperienced companies will be employed (Aibinu and Jagboro, 2002). This could lead to recurring disputes and conflicts arising which results in additional costs and delays in project completion.

2.3.1.7 Slow decision making

Clients are the custodians of the projects and when they stall in making decisions regarding project matters, they slow down activities at the project sites. Slow decision making could be caused by an organization's internal politics or using wrong channels of communication (Vaifaice *et al.,* 2010). This in turn delays progress and leads to late completion of projects.

2.3.1.8 Design alterations & change orders

Sunjka and Jacob (2013) state that any change in designs, specifications and scope which were not considered initially must be communicated well and additional time taken to make those changes to be added back on the contract because temporary stoppages that delay overall project completion will be encountered.

2.3.2 Contractor-related issues

Contractors on the other hand are the main causes of their own challenges which range from lack of experience of the work, late delivery of materials and wastage, lack of project planning and using wrong construction methods which often leads to rework as well as

failing to manage subcontractors and late payments which lead to cash flow problems. In the same vein that clients' contribute to emerging contractors' poor funds management, emerging contractors also contribute in many ways to this phenomenon. The level of accounting management capabilities of emerging contractors' affects his/her success in funds management. Arslan and Kivrak, (2008) and Chilipunde, (2007) identify factors that are attributable to poor funds management of emerging contractors. These include: poorly coordinated subcontractors, construction methods that are not appropriate, inadequate planning, inadequate experience, and avoidable mistakes during construction stage, incompetent site management and wrong choice of bankers.

2.3.2.1 Poor coordination of subcontractors

Aspects of construction work that will be subcontracted to nominated specialist subcontractors need to be closely monitored and well planned in advance. These subcontractors must be properly coordinated by main contractors to ensure timely delivery of assigned aspects of works (Sunjka and Jacob, 2013). Main contractors must also ensure that each subcontractor delivers at the stipulated time and to specifications.

2.3.2.2 Inappropriate construction methods

According to Nguyen and Ibbs (2006), construction work requires correct methods and tools to be used and if correct procedures are not followed, mistakes happen which lead to rework and delays. Inappropriate construction methods also leads to injuries which could be avoided if correct procedures are followed.

2.3.2.3 Inadequate planning

When contractors appoint construction managers, they expect them to provide assistance in drawing up workable project plans and practical methods for implementing projects. An impractical work plan leads to delays in project completion. Majority of emerging contractors do not have practical work programs from the initial stage of the project. This makes it difficult to monitor project progress against the stipulated time frame as these programmes are not realistic and need to be constantly revised. If work is not properly planned, it cannot be realised and therefore delays will be encountered (Abdul-Rahaman; Takim and Wong Sze Min, 2009).

2.3.2.4 Inadequate experience

A contractor who does not possess the required experience usually makes a lot of mistakes and for those mistakes to be rectified, proper supervision, rework and more

money is required. In some instances, lacking experience leads to poorly constructed projects and delays in activities (Sunjka and Jacob, 2013).

2.3.2.5 Mistakes during construction stage

Mistakes during construction stage are avoided if work plans are studied and understood clearly. Carelessness and lack of experience of contractors leads to mistakes if projects are not closely monitored. Employing qualified and experienced personnel for projects and following the correct construction methods and procedures is another way in which mistakes may be avoided. This will also reduce additional costs which are incurred from rework and additional costs for labour and materials (Memon *et al.,* 2011). Rework of an already executed aspect of a scope slows down project progress and this has serious impact if it involves execution of critical tasks.

2.3.2.6 Incompetent site management

Sunjka and Jacob, (2013) state that if contractors employ unskilled and incompetent personnel to manage their projects, it will result in poor workmanship, rework and delay in completion of tasks.

2.3.2.7 Wrong choice of Bankers

Banks provide bridging finances for most projects but when the release of finances is delayed due to internal processes, it affects activities on site. The banks actions and inactions directly impact on a contractor's ability to execute the project as scheduled and this happens especially when a contractor requires credit facilities such as loans to finance the project (Sambasivan and Soon, 2007).

2.3.3. Labour and equipment related issues

The level of management of labour and equipment has direct impact on the availability of funds of emerging contractors in the continuity of the project. There is a time to engage labour and also a time to lay off labour. Knowledge of this assists in funds management of contractors. Regarding equipment, it needs regular maintenance and be adequate for high productivity with respect to time completion of project. Factors that measure labour and equipment related issues affecting emerging contractors' funds management are: unskilled site manpower, improper equipment selection and faulty equipment and labour dispute (Memon, Rahman, Abdulah and Azis, 2011; and Aiyetan, 2010).

2.3.3.1 Unskilled site manpower

The employment of unskilled personnel on projects delay the execution of work, it leads to wrong interpretation of specifications or mistakes during construction (Aiyetan, 2010). Time is then spent on alterations and corrections.

2.3.3.2 Improper equipment selection & faulty equipment

Using incorrect and faulty equipment is costly, it delays projects as it extends the time taken to do the task; faulty equipment leads to delays due to the time spent on repairs (Memon *et al.,* 2011).

2.3.3.3 Labour disputes

Labour disputes such as strikes slow down construction as time is spent on negotiation and settlement of grievances (Sunjka and Jacob, 2013). Civil commotion, riots which may lead to violence and destruction of infrastructure also cause delays in projects, damage to equipment and material.

2.3.4 Materials-related issues

The ability to adequately estimate materials requirement and procedure schedule for on time delivery affects emerging contractors' profit. This is in order to avoid waste and excessive waiting time for materials. Aiyetan (2010) and Pourrostam, Ismail and Mansounejad (2011) identify factors that measures materials influences on contractors' funds management as: poor quality materials, material shortages, late delivery of material and material shortages resulting from damages. These factor are applicable to emerging contractors.

2.3.4.1 Poor quality materials

Poor quality materials lead to poor quality workmanship, thus an unacceptable product. Most often, the clients or consultants insist that repairs be made on parts of work or to be completely redone (Aiyetan, 2010).

2.3.4.2 Material shortages

This results in slowed activities and sometimes temporary abandonment of sites. Without material, activities cannot proceed on site (Pourrostam, Ismail and Mansounejad, 2011)).

2.3.4.3 Late Delivery of Material

The late delivery of material leads to delays in the project (Aiyetan, 2010). When material is not delivered timeously, critical items cannot commence or proceed on the project, thus ultimately leading to delays in the whole project. Delays in work have dire consequences as penalties are charged for finishing the project late.

2.3.4.4 Material shortages resulting from damages

Careless use of material results in damages which are avoidable when materials are used with caution (Arslan and Kivrak, 2008). Material shortages mainly result from carelessness of workers which ultimately leads to more costs being incurred in procuring more material for the project (Pourrostam; Ismail and Mansounejad, 2011).

2.3.5 Consultant-related issues

Consultants at times may not have the required experience in certain types of work or do not allocate enough time for supervision which may result in many mistakes which are avoidable when proper time is allocated. They also contribute to delays by not issuing instructions on time or changing designs or delay in issuing required information in time. The capability of consultants directly or indirectly affects the funds management of an emerging contractor. Delays result in contractors staying too long on site and this may incur additional overhead cost and other running costs. The factors that measure consultants' contribution to an emerging contractor's poor funds management as identified by Chen, (2007) are: incorrect design, poor skills in project management, identifying errors late in drawings, delay in issuing resolution drawings, specification errors and omissions, preparing contract documents late, packaging and delivering contracts improperly, conducting inspections all the time or waiting long periods of time to inspect and conduct tests on site, coordinating information inappropriately, inappropriate construction methods and poor supervision resulting in rework (Sunjka and Jacobs, 2013).

2.3.5.1 Inappropriate design

Incorrect design stalls project execution because of the time taken to redesign and make changes on site for acceptable construction works (Sunjka and Jacob, 2013). When errors are identified early in the designs, work is temporarily suspended until such errors are rectified. This usually happens in organisations where the procurement process of implementing agents is compromised (Chen, 2007).

2.3.5.2 Poor contract management

If projects are not managed properly to ensure that milestones and budgets are adhered to, they result in failure. Clients and consultants need to ensure contracts are managed properly. In some projects, consultants are forced to act as contract managers to ensure that contractors comply with the contract but if this is lacking, challenges are encountered in construction and budgets are overrun. Projects get delayed when the required management principles are not utilised during project execution (Chilipunde, 2007).

2.3.5.3 Late identification of errors & resolution of drawings; specification errors & omissions

Vaifaice *et al.* (2010) state that it is a requirement for projects to be completed on time, within budget and according to the correct specification. When consultants fail to identify mistakes in time or omit information on drawings and specification, activities that have already been completed may require to be altered due to mistakes that are identified late or due to missing information in the drawings and project specifications.

2.3.5.4 Late preparation of drawings and other contract documents

If drawings are prepared late, other contract documents such as Bills of Quantities (BOQ's) and tender documents will also be delayed. If the project is already under construction, site instructions will be issued late to temporarily suspend the work in order to finalise the designs. This will in turn delay the completion date of the project as activities will be stalled (Aiyetan, 2010).

2.3.5.5 Improper contract packaging/delivery strategy

The lack of capacity of clients usually leads them to outsourcing packaging and delivery of many projects. Mistakes occur in the procurement of these contracts resulting in incompetent service providers being appointed. A mistake made at this stage is transferred to the overall project performance because if challenges are not properly captured and addressed at the initial stages, project management will be done incorrectly. Contract packaging issues must be addressed and dealt with before project activities are started on site so as to avoid impacting factors that lead to legal redress (Aibinu and Jagboro, 2002).

2.3.5.6 Over inspection

Inspection is required during the execution of a construction project so as to be able to monitor quality, progress, finances and the performance of the contractor throughout its lifespan (Chilipunde, 2007). However, when inspections are conducted frequently, contractors tend to become distracted and this often impedes contractors' progress.

2.3.5.7 Long waiting time for inspection & testing

According to Memon *et al.* (2011) there are certain aspects of work that require inspection and testing before other activities are carried out. Chen, (2007) agrees that usually, Consultants and Clients' staff are tasked with the responsibility of coordinating such exercises and when these activities are done late by the responsible stakeholders, it delays the project progress.

2.3.5.8 Inappropriate coordination of information

When information is not distributed timeously or contractor's requests are not addressed in time, project activities are negatively affected. A good communication management plan must be in place and followed so that site information is properly channelled and coordinated as and when required. Lack of proper coordination of information results in misunderstanding and causes conflicts that must be resolved in time before activities proceed on site (Pourrostam, Ismail and Mansounejad, 2011).

2.3.5.9 Inappropriate construction methods

Chen (2007) states that inexperienced consultants may make contractors to implement construction methods that are not suitable for some contracts. This mainly results in delays and rework as well as wastage of material in most instances (Sunjka and Jacob, 2013).

2.3.5.10 Poor supervision resulting in rework

When consultants do not visit the site regularly to give guidance to contractors, rework is inevitable. Lack of supervision results in many mistakes being made especially if contractors themselves are inexperienced, ultimately leading to wastages of material and delays that could have been avoided if the project was closely monitored (Chilipunde, 2007).

2.3.6 Community related issues

Communities also delay projects by not buying-in and by having disputes among themselves. The issues of communities relate to the participation in a project by the community members, which may be in the form of labour supply, thereby reducing the cost of importing labour for the project. This affords the opportunity to managing funds well. Chen, (2007) and Meyer-Stamer, (2003) state that the factors that measure the community related issues having negative impact of emerging contractors' funds management are: lack of community buy-in, delay or non-payment of compensation and community unrest, militancy and communal crises.

2.3.6.1 Lack of community buy-in

Local communities are important stakeholders in public sector projects and the majority of these projects are carried out to improve socio-economic conditions of the local community. IDPs are conducted annually by public sector clients in order to understand the needs of people in the local areas and projects are then prioritised by the clients. If communities are left out at this stage, needs assessment will be overlooked and local community leadership structures are likely not to partner with projects that they know will not address their needs (Sunjka and Jacob, 2013). It is therefore important to ensure community buy-in from the onset so that beneficiaries embrace the development in their local communities and co-operate well with clients, consultants and contractors during implementation phase.

2.3.6.2 Delay or Non-payment of Compensation

When development is taking place, certain areas are affected in the local area, including some properties. At times people in the community are required to give up their properties for demolition to achieve project objectives. In contracts, provisions are made for payment of compensation. Delay in making these payments or non-payments may stall project execution because, the affected owners of such properties resist attempts for their properties to be demolished without provision for replacement (Sunjka and Jacob, 2013).

2.3.6.3 Community unrest, militancy & communal crises

There are frequent unrest all over South Africa due to local communities being agitated and protesting for basic quality services. This poses a major challenge in projects execution in most areas. Community unrest results in an unconducive working environment and slowed working pace. At times projects are abandoned when lives are

at risk due to communal crisis and militancy. Community strikes need to be addressed by the relevant stakeholders in time so that they do not delay service delivery (Vaifaice *et al.,* 2010).

2.3.7 Contractual relationship related issues

Pourrostam, Ismail and Mansounejad (2011) declare that it is important for the contractor to maintain a healthy communication with professionals on a project. Healthy communication affords accessibility to each other, the clarification of issues, promotes an avenue that workers look forward to, regarding meeting and working. It aids in the elimination of disputes and litigation. These all affect funds management. The factors that could be attributed to contractual relationship are: lack of adequate communication between the parties, major disputes and negotiations and wrong organisational structure linking to the project (Chen, 2007; Pourrostam; Ismail and Mansounejad, 2011).

2.3.7.1 Lack of adequate communication between the parties

When communication proper channels are not followed, important information will not be channelled and conveyed properly. Lack of communication between parties leads to misunderstanding and misrepresentation of facts (Vaifaice *et al.,* 2010). This could breed conflicts and consequently hinder smooth progress of activities.

2.3.7.2 Major disputes & negotiations

Chen (2007) state that when there are major disputes and negotiations between parties in a project, it impede progress of work as aggrieved parties wait until grievances are resolved before they continue with any activities. Mediation is important at early stages during a conflict so as to avoid having issues escalating in the long run.

2.3.7.3 Wrong organizational structure linking to the project

Project stakeholders directly impact on the success or failure of a project. When the structure linking to the project is wrong, it affects project progress. There are certain projects that cannot be managed by certain types of organisational structures. For instance, it is difficult to execute quick impact projects in a functional organisational structure because of the slow decision making processes and bureaucracies associated with such a structure (Sunjka and Jacob, 2013). Project structure must be in line with the project needs and its urgency. Use the right people to get the job done right.

2.3.8 External issues

External conditions such as weather, interference by political decisions and leaders as well as natural disasters delay projects. Aiyetan (2010) declares that external factors such as rain, flood, fire and so on, are factors that man has no control over. Their occurrence could be devastating resulting in negative impact on funds of contractors. Aiyetan, (2011) identifies these external factors as: weather conditions, change in government's leadership and policies, natural disasters and interference by political leaders.

2.3.8.1 Weather conditions

In areas where rain is experienced frequently, enough time must be allocated to complete the project. Consultants must ensure that in the implementation plan they prepare for clients, enough time is allocated for interference by weather. Consultants must ensure that they account for weather projections in their project implementation plan and contractors need to take measures to ensure that when such disturbances occur, they explore other options and apply in time for such delays (Aiyetan, 2010).

2.3.8.2 Change in government's leadership & policies

Certain projects are stalled and abandoned when politics interfere. Sometimes, changing government policies such as monetary and fiscal policies lead to an increase in the cost of construction materials and equipment. When such changes are effected, majority of emerging contractors are not be able to continue with projects as scheduled because they need time to spend in obtaining approvals for price fluctuations and contract revisions (Memon *et al*, 2011). Often times if a project is politically driven, when political leadership changes, new leadership will want to investigate if there was any corruption involved in awarding the tender and this leads to more delays in project execution.

2.3.8.3 Natural disasters (e.g. floods, lightning strikes)

There are areas that usually experience natural disasters such as floods and lightening which causes major damage in many areas. South Africa is not an exception to such disasters which amount to millions in infrastructure that needs to be repaired. These disasters are generally unpredictable (Chilipunde, 2007). However, well established project management organisations possess requisite skills to manage natural disasters and take necessary precautions to minimise the damage to infrastructure.

2.3.8.4 Interference by political leaders

This is mostly experienced in public sector projects. When political leaders have vested interest in particular projects, delays are inevitable. Political leaders may interfere by requesting additional scope to be incorporated which was not catered for in the original budget, as well as by imposing contractors that do not meet the evaluation criteria to be appointed or impose incompetent subcontractors on contractors that are already on site (Arslan and Kivrak, 2008). This leads to poorly constructed projects, budget and time overrun.

2.4 IMPACT OF EMERGING CONTRACTORS' CHALLENGES ON PROJECT DELIVERY TIME

The South African construction industry consists of different stakeholders and they stem from clients, to consultants, to contractors and community members and their leadership structures in which projects are developed as well as the various construction industry affiliated organisations. All these stakeholders have a vital role to play in the project delivery time of projects as well as the development of the industry. Various factors influence project delivery time at various stages of the projects and that influence is either positive or negative to the industry and to each stakeholder. The industry poses a great challenge because it is extremely important to generate wealth, improve the quality of life of the citizen by proving social and economic infrastructures that link the whole spectrum of the economy with a multiplier effect that enables other industries to prosper alongside (Construction Industry Working Group on Payment, 2007).

The construction industry is regarded as one of the most risky, dynamic and challenging business, which has suffered a temporary crisis during the economic crisis, but has improved gradually since then. However, delays still occur in construction projects as the industry is famous for poor risk management because many projects fail to meet deadlines and cost targets. Delay is common, it is costly, complex and increases problems encountered in the construction of a project (Alaghbari *et al.,* 2007). Shen *et al* (2001), state that the majority of the construction projects usually cannot be accomplished within the stipulated contract period because delays occur and the magnitude of these delays differs from project to project. Encountering delays in projects is a worldwide challenge and in Australia, one-eighth (1/8) of the projects are accomplished within the scheduled completion dates, and the average time overrun exceeds 40 % (Bromilow, 1974). In addition, Aiyetan (2010) also identified twelve factors that influence project

delivery time and they are: The client's understanding of the design, procurement, and construction processes; Quality management during design; Quality management during construction; Management techniques used for planning and control; Economic policy; Constructability of design; Site ground conditions; Motivation of staff; Management style; Site access; Physical environment considerations, and Socio-political considerations. All these factors have a huge impact on the project delivery time. Emerging contractors who know their trade are able to overcome most of these challenges and finish their projects within time however for those who rarely have technical and project management, business and financial management skills, it becomes almost impossible for them to finish projects in time, within budget and uphold quality to the highest standard. All stakeholders have a contribution and a role to play in the life cycle of a project.

2.5 STAKEHOLDERS CONTRIBUTION ON SUCCESS OR FAILURE OF PROJECTS

The challenges faced by the industry have a huge impact on the contractor themselves, the consultants they work with, the communities they work in and the clients that employ them. When one of the stakeholders is not playing their role in fulfilling his responsibilities, the whole team suffers and one cannot operate without the other as they are interconnected in one way or the other. The impact felt by the stakeholders affects the construction industry as a whole and gives it a bad name. There are also factors that impact on emerging contractors and they are:

2.5.1 Management factors

Experience in any kind of management is important and it plays an important role in ensuring that a business succeeds or fails. Lack of effective management is one of the main causes of failure of small businesses (Longenecker, *et al*., 2006). Good management indicates that the business owners are aware of all factors make up a successful business which include strategy, marketing, pricing and financial control (Douglas, 1985). Financial mismanagement and management incompetence lead to failures in construction (Kangari, 1988), (Henry, 1991), (Schleifer, 1990), (Potgieter and Frank, 1990).

2.5.2 Financial factors

The high competition among emerging contractors has contributed to increase in financial failures of the emerging market, making it unsustainable (Mvubu and Thwala, 2007). Financial management is the key, which determines business growth (Young and Hall,

1991). The most prominent causes of failure with construction companies results from inadequate cash resources and failure to convince creditors of the availability of money (Hsing-Hui, 1989; Ren, 1992; Jach, 1985 and Tong, 1990). Lack of access to finance during pre-construction disqualifies emerging contractors from meeting guarantees and performance bond requirements, and during construction it leads to cash-flow problems, incomplete work and even liquidation (Mvubu and Thwala, 2007).

2.5.3 Expansion factors

Some emerging contractors win more tenders than others and this means an increase in the number of projects they do but they do not always manage because of the required production capacity. Over-expansion drives a company to a higher risk investment with financial debt and increases its chance of business failure (Enshassi, Al-Hallaq and Mohamed, 2006). Being overcommitted in projects and where those projects are going to be done also contributes to the expansion factor. It stretches limited resources to the maximum and in most cases leads to incomplete or poor quality projects.

2.5.4 Economic factors

Rwelamila and Lobelo (1996) state that economic factors are perceived to be beyond the control of management. Ntuli and Allopi (2009) concur that while economic factors are worth nothing, they may be perceived as being external to a company's operations and failure of a company to recognize that their efforts may lead to the termination of its business operations. The construction industry has very distinct characteristics that make it much more susceptible to failure than others such as tendering within a high uncertain environment, pricing for a project before it is constructed, high competition in pricing and low fixed capital requirements to enter into the industry result in it being over capacitated (Ren, 1992; Jack, 1985; Kangari, 1988 and Davis, 1991). High interest rates, stringent rules, and regulations that are set by the government are identified as prominent causes of business failure (Hall and Young, 1991). These factors are not under industry control and hence completely outwit the sphere of emerging companies influence.

2.6 EFFECTS OF LACK OF PLANNING BY EMERGING CONTRACTORS

The key challenges to the success of emerging contractors is linked to access to credit, financial mismanagement, delayed payments by clients, inconsistent work flow, procurement practices, poor quality of work resulting from poor supervision, inadequate training and mentorship programmes as well as little or no planning from emerging

contractors. Some of the contributing factors that have been identified by different scholars over the years are due to poor planning and have an effect in the construction industry as well as in the financial standing of emerging contractors. The factors as described by Sunjka and Jacob (2013) include: time overrun, budget overrun, poor quality completed project, bad public relations, litigation, arbitration, disputes, claims, delays. The lack of proper planning involves high project costs and delays. However, if proper planning is done prior to the implementation, these effects could be avoided. The beneficiaries of the project are also negatively affected and this has a bad effect on the client, the consultant and the contractor responsible for the project. This at times results in community unrests for service delivery but it is avoidable when planning is done properly and constantly reviewed to check progress against the plan.

2.7 BUSINESS MANAGEMENT, FINANCIAL MANAGEMENT AND STRATEGIC PLANNING

Business management, financial management and strategic planning are the fundamental requirements that business owners should possess to ensure sustainability of their businesses.

2.7.1 Business Management

Owning a business requires one to know the fundamental principles of business management. Emerging contractors need to adopt and implement principles that will help them in the smooth running of their businesses and also to develop new business management skills. It is argued that a shortage of skills in the construction industry is closely linked with the failure rate of many businesses. The skills shortage presents a huge challenge for small contractors as the majority cannot afford to hire qualified construction professionals and business managers due to the high demand of built environment professionals. Contractors who lack the experience in construction and who cannot afford to outsource the required skills are not likely to succeed. Mashatole (2014) argues that contractors who lack business management skills battle in sustaining their business due to the following parameters: payments are processed late by public sector clients; they experience difficulties in arranging for securities; they lack the track record required by suppliers for the provision of credit facilities and they experience difficulties in getting loans from financial institutions.

“It is therefore fairly debatable that those in the minority with sound business management skills are able to withstand unfavourable circumstances in the market and sustain their businesses. Planning and execution of sound management skills are probably the greatest obstructions amongst small construction firms. Some examples include the inability to prepare procurement schedules for materials and construction programme, detection of possible delays and planning for transport requirements. These shortfalls often have significant impacts on small contractors since margins for errors are relatively small in the small-scale construction sector. Lack of entrepreneurial training is also a reason small businesses fail. Most emerging small business owners or managers start their enterprises without prior entrepreneurial training. Since many studies have proven it, there is no doubt that people are trained to become entrepreneurs” (Mashatole, 2014).

Entrepreneurship training is required in every discipline to be a success and the construction industry should not be an exception to that. High quality training reduces the failure rate and increases the profit and growth of the company. Emerging contractors that survive the start-up and early years have the capacity to grow and be productive, competitive and profitable, provided they display competence and apply a particular mix of business skills. The most significant reason emerging companies fail is the inability to make adequate use of essential business skills and perform management practices. Many companies fail to develop an initial plan, and those that do, fail to adjust and use it continuously as a benchmarking tool. There is also an over emphasis on short-term profitability, rigid decision-making patterns, and failure to use external advisors (Chen, 2007). Small business owners and managers need to learn to apply the following business skills in order to succeed: business planning, financial planning, operational management and control, financial management and control, human resource management, awareness of knowledge management and be open to e-commerce.

2.7.2 Financial Management

Maheshwari (2014) defines financial management as being concerned with raising financial resources and their effective utilisation towards achieving the organisational goals. The objective of financial management in public sectors is to deliver the goals and projects within the agreed set budget; manage those funds; plan; forecast and deliver value for money. In the private sector, it is to maximise profits, maximize wealth, estimate total financial requirements properly, mobilise finances and utilise them properly, maintain a proper cash flow, ensure the company survives in a competitive

business environment by creating reserves, coordinating and creating goodwill, it must increase efficiency, financial discipline, reduce cost of capital, reduce risks and prepare a capital structure (Saxena, 2011). Financial Management is what determines the growth of the business (Young and Hall, 1991). Scholars such as Thwala and Phaladi (2009), Ofori (2000) and Ssegawa (2012) argue that the most notable cause why construction companies fail is because of inadequate cash resources and failing to convince creditors that money is available. This is a problem that affects even profitable companies and could force them into liquidation (Ntuli, 2015). If demand for payment and settlement of outstanding accounts is not met at the critical time, companies find themselves in deep debt. Money is needed to smoothen out the strains on the cash flow which result from the occurrence of cost and uncertainty (Ren, 1992). Without access to finances prior to construction, emerging contractors are disqualified from meeting guarantee and performance bond requirements. During construction, it leads to cash-flow problems, incomplete work and even liquidation of some companies (Mvubu and Thwala, 2007) and (Ntuli, 2015). According to Mashatole (2014), in developing countries, government lacks management capacity and financial resources to train contractors. This presents a major challenge for small contractors that join the construction business. This problem is currently facing South Africa as a whole. Without effective management in the early stages of a company, emerging companies are bound fail. Emerging contractors prefer to manage their business themselves in order to avoid high operating costs and engaging other people to do so (Thwala and Phaladi, 2009). Poor record keeping is another factor that is reported as one of the leading causes for start-up business failure. In such cases, this is not only due to the low priority that is given by new entrepreneurs to their businesses, but also a lack of basic business management skills. Majority of entrepreneurs lose track of their day-to-day transactions and cannot account for their expenses and profits at the end of the month.

For any company to operate smoothly, systems must be in place and be properly managed. In the construction industry where the majority of work is organised by projects, the normal financial management system designed around 'functional' work organisation is not appropriate (Peterson, 2005). This is because each project a company secures is unique; it has different specifications and requirements, clients may not be the same, location is different with different challenges and it aims to satisfy different needs. This is the reason why each project must be treated as a cost centre as opposed to the normal permanent cost centres found in functional based work organisations (Peterson, 2005). Business failure in the construction sector is a global problem. The high rate of emerging

construction company failure makes the construction industry to be seen by financial institutions as a high risk sector in any economy which is second to the exploitation of minerals. There are several reasons that have been put forward to explain the persistent situation which points to issues of financial management. Although business failure is inevitable in the construction industry, there is room for improvement. Clients in the construction industry who pay contractors late are another source of financial problems. Failure by clients to pay on time is an endemic problem and frequently causes a cash flow crisis for many small businesses (Ssegawa, 2008). This point is further reinforced by Upson (1987) who observed that construction companies in Britain, especially the smaller firms, were just too busy with construction work at site to pay attention to financial matters such as the prompt and accurate recording of transactions, budgeting, cashflow forecasting, and cost-value reconciliations.

Other studies conducted by Ntuli (2015), Ssegawa, (2012) and Thwala and Phaladi (2009) which focused on the construction industry identified the causes of construction business failures as the lack of experience in construction business; inadequate project estimating and cost control; insufficient working capital; difficulty in managing receivables; intense competition; lack of advertising; lack of technical expertise; wrong location of service in relation to the market; poor inventory control; and fraud. The challenges listed above show that financial management systems are inadequate or are completely lacking in numerous construction companies. Other cases show a lack of business management skills particularly in marketing and technical skills by the managers of these construction companies. These challenges do not only affect developed countries like USA and UK but they are also common in developing countries such as South Africa, Botswana, Tanzania and Swaziland (Ssegawa, 2012). In developing countries, their impact is aggravated by these two key issues: majority of economies in developing countries have been economically depressed especially dating back from 1940's to 1990's and this resulted in diminished demand for construction services and reduced project procurement; and the construction industry is highly dependent on government projects as a major contributor of work in developing countries. The government of Botswana provided 80% by value, of construction jobs in 2000 (Ssegawa, 2000), while South Africa provided around 130 000 temporary construction jobs in preparation for the 2010 world cup, (The Guardian, 2010).

It is therefore concluded that South African emerging contractors are not the only ones with financial challenges as this is a universal problem. It is for these reasons that the

CIDB (2011) has identified a need for the support of emerging contractors financially and the working together of financiers in the development of financial models to bridge this gap. The CIDB brought together financial sector role players aiming to have the recommended models embraced by the sector so as to consolidate existing financial and non-financial support to contractors, and develop appropriate tailored models, products and packages that target the needs of the emerging contractors. Emerging contractors play a vital role in local and international markets because the days when mass resources were needed to break international barriers are gone. Specifically, emerging contractors contribute to social, economic and industrial development and provide entrepreneurial outlets, which foster innovation, create competition, create employment, foster economic growth and synergy with large enterprises (CIDB, 2011).

2.7.3 Strategic Planning

Business management and financial management go hand-in-hand with strategic planning. One cannot exist without the other if the business is to be success. Strategic planning is defined as an organization's management role that is used to set priorities, focus energy and resources, strengthen operations, ensure that employees and other stakeholders are working toward common goals, establish agreement around intended outcomes/results, assess and adjust the organization's direction in response to a changing environment (Boone, 2010). A disciplined effort produces core decisions and actions that help in shaping and guiding what an organization is, who it serves, what it does, and why it does it, with a focus on the future. Effective strategic planning does not only show where an organization is heading and the actions that need to be taken to make progress, but also how it will determine its success. Emerging contractors need the skills to run efficient and profitable businesses. All these are acquired through formal education and will assist in the sustainability of their businesses in the future. The South African Construction Industry has a long way to go in its aim to be fully developed and have sustainable contractors (Materu, 2000). Emerging contractors need to be fully equipped with technical, financial and business management skills as well as strategic planning skills to combat the challenges and obstacles they face. They should also maintain and apply them. The best way to learn is by doing the job. Owners and managers also learn and build skills more effectively through practical situations, they learn through their successes and failures. Learning creates the best potential for small business success. According to Ssegawa (2008), emerging contractors need to pay more attention to matters that include strategic management so as to ensure a long-term view of their companies. Strategic plans must be developed and implemented through

operational plans. A joint effort must be made by all emerging contractors to ensure that projects are controlled as this is the only way to achieve a sustainable profit and satisfy clients.

2.8 CHAPTER 2 OVERVIEW

The South African construction industry is still in the initial stages of development and has a good potential to nurture and produce sustainable construction companies. Commitment is needed from all industry stakeholders to ensure a smooth project life cycle. Skills development is paramount to the sustainability of emerging contractors as well as ensuring that the challenges experienced, their causes and the impact they have on all industry stakeholders are minimised. Public and private sector need to work together to assist in the development of this industry and contractors need to commit to their projects, acquire new skills that will assist them in managing projects. They also need to have proper management systems in place and improve their overall business acumen.

CHAPTER 3: RESEARCH METHODOLOGY

In this chapter, methods and procedures used in gathering information in the research will be discussed and they include data collection, research method, sampling and the research instrument to be used. The sample frame for the study consists of emerging contractors in KwaZulu-Natal province, South Africa, and the research instrument will be a survey questionnaire. Simple statistical tools, such as the mean score, percentages and frequencies will be used to analyse data obtained.

3.1 Definition of Research

Leedy and Ormrod (2014) describe research as a process in which information is collected, analysed and interpreted using a systematic manner so as to better understand a phenomenon which is of interest to the researcher with verifiable facts. Research is a process of inquiring and investigating literature in a systematic and methodological manner. Mutai (2000) also defines research as a "systematic search for pertinent information which leads to new knowledge." It includes investigating relationships among different factors that operate in a given situation (Aiyetan, 2010).

Goddard and Melville (2001) state that the purpose of research is to discover new knowledge, describe phenomena, be able to predict, enable control, explain a phenomena and enable theory development.

3.2 Types of Research

There are different types of research. Research may be descriptive, correlative or exploratory. Aiyetan (2010) is of the view that when choosing the correct type of research to employ in attempting to solve a problem, researchers need be guided by the characteristics of the problem, the knowledge they have at the initial stages, the factors that influence change, as well as determine why the investigation is being conducted. According to Mouton (2001) and Kumar (2005), after establishing the research design, the next step is to choose a plan of how the research will be conducted.

3.2.1 The different types of research are:

Descriptive; Experimental; Case study; Survey (questionnaire); Historical, and Correlative research.

3.2.1.1 Descriptive Research

A descriptive research is not definite in defining either a quantitative or qualitative research methodology but it may use both elements within the same study. Descriptive is a term that is used by the researcher to refer to the type of research question, design, and data analysis that will be applied to a given topic. Descriptive statistics tell what is, while inferential statistics try to determine cause and effect (Aiyetan, 2010). The type of questions that the researcher asks ultimately determine the type of approach that is necessary to complete and conduct the research. In descriptive studies, the primary concern is to find out “what, how and why type of questions. Descriptive studies are either quantitative or qualitative and involve the collection of quantitative information that is tabulated along a continuum in numerical form such as scores on a test or the number of times a person chooses to use a certain feature of a multimedia program, or it describe categories of information such as gender or patterns of interaction when using technology in a group situation. Descriptive studies report summary data such as measures of central tendency including the mean, median, mode, deviance from the mean, variation, percentage, and correlation between variables. Like other types of research, descriptive research includes multiple variables for analysis, yet unlike other methods, it requires only one variable (Borg & Gall, 1989). A descriptive study employs methods of analysing correlations between multiple variables by using tests such as Pearson's Product Moment correlation, regression, or multiple regression analysis. On the other hand, descriptive research might simply report the percentage summary on a single variable. Descriptive statistics utilize data collection and analyse techniques that yield reports concerning the measures of central tendency, variation, and correlation. The combination of its characteristic summary and correlational statistics, along with its focus on specific types of research questions, methods, and outcomes is what distinguishes descriptive research from other research types. The main purpose of research is to describe, explain, and validate findings. Description emerges following creative exploration, and serves to organize the findings in order to fit them with explanations, and then test or validate those explanations (Krathwohl, 1993).

3.2.1.2 Experimental Research

Experimental research is usually employed in sciences such as sociology and psychology, physics, chemistry, biology and medicine. It is a collection of research designs which use manipulation and controlled testing to understand causal processes. Generally, one or more variables are manipulated to determine their effect on a

dependent variable. The experimental method is a systematic and scientific approach to research in which the researcher manipulates one or more variables, and controls and measures any change in other variables. Experimental Research is often used where time is a priority in a causal relationship (cause precedes effect); there is consistency in a causal relationship (a cause will always lead to the same effect) and the magnitude of the correlation is great. The word experimental research has a range of definitions. In the strict sense, experimental research is what we call a true experiment. This is an experiment where the researcher manipulates one variable, and control/randomizes the rest of the variables. It has a control group, the subjects have been randomly assigned between the groups, and the researcher only tests one effect at a time. It is also important to know what variable(s) you want to test and measure.

3.2.1.3 Case Study Research

The case study research design has evolved over the past few years as a useful tool for investigating trends and specific situations in many scientific disciplines. The case study has been especially used in social science, psychology, anthropology and ecology. This method of study is especially useful for trying to test theoretical models by using them in real world situations. For example, if an anthropologist were to live amongst a remote tribe, whilst their observations might produce no quantitative data, they are still useful to science. A case study is an in depth study of a particular situation rather than a sweeping statistical survey. It is a method used to narrow down a very broad field of research into one easily researchable topic. Whilst it will not answer a question completely, it will give some indications and allow further elaboration and hypothesis creation on a subject. The case study research design is also useful for testing whether scientific theories and models actually work in the real world. For psychologists, anthropologists and social scientists they have been regarded as a valid method of research for many years. Scientists are sometimes guilty of becoming bogged down in the general picture and it is sometimes important to understand specific cases and ensure a more holistic approach to research.

3.2.1.4. Survey Research

Survey research is one of the most important areas of measurement in applied social research. The broad area of survey research encompasses any measurement procedures that involve asking questions of respondents. A "survey" is anything from a short paper-and-pencil feedback form to an intensive one-on-one in-depth interview. There are different types of surveys and they are roughly divided into two broad areas:

Questionnaires and Interviews (Leedy and Omrod, 2014). Once a survey method is selected, the survey itself has to be constructed. A number of issues including: the different types of questions; decisions about question content; decisions about question wording; decisions about response format; question placement and sequence need to be included in the instrument.

Types of Surveys

Surveys are divided into two broad categories: the questionnaire and the interview (Leedy and Omrod, 2014). Questionnaires are usually paper-and-pencil instruments that the respondent completes. Interviews are completed by the interviewer based on what the respondent says.

Questionnaires

Questionnaire may be administered via mail or given out in groups whereby a sample of respondents is brought together and asked to respond to a structured sequence of questions. Questionnaires are also administered by household drop-off survey. In this approach, a researcher goes to the respondent's home or business and hands the respondent the instrument. In some cases, the respondent is asked to mail it back or the interviewer returns to pick it up. This approach attempts to blend the advantages of the mail survey and the group administered questionnaire (Leedy and Omrod, 2014). Like the mail survey, the respondent works on the instrument in private, when it's convenient. Like the group administered questionnaire, the interviewer makes personal contact with the respondent, they do not just send an impersonal survey instrument. The respondent is able to ask questions about the study and get clarification on what is to be done. Generally, this is expected to increase the percent of people who are willing to respond.

Interviews

Interviews are a far more personal form of research than questionnaires. In the personal interview, the interviewer works directly with the respondent. Unlike with mail surveys, the interviewer has the opportunity to probe or ask follow-up questions. Interviews are generally easier for the respondent, especially if what is sought is opinions or impressions (Aiyetan, 2010). Interviews are very time consuming and they are resource intensive. The interviewer is considered a part of the measurement instrument and interviewers have to be well trained in how to respond to any contingency.

3.2.1.5 Historical Research

Historical research is the system of collecting and evaluating data to describe, explain, and understand actions or events that occurred sometime in the past. There is no manipulation or control of variables as in experimental research. An attempt is made to reconstruct what happened during a certain period of time as completely and accurately as possible (Leedy and Omrod, 2014).

3.2.1.6 Correlative Research

Correlation methods are used to determine the extent to which two or more variables are related among a single group of people. There is no attempt to manipulate the variables (random variables). In correlational research, variables are not influenced but only measured and look for relations (correlations) between some set of variables. Data from correlational research is only “interpreted” in causal terms based on some theories that we have, but correlational data cannot conclusively prove causality (Aiyetan, 2010). Although a relationship between two variables does not prove that one caused the other, if there is no relationship between two variables then one cannot have caused the other. Within this similar context the most appropriate types of research for this study are descriptive and correlative or explorative research. It is an exploratory research type as it seeks to find new knowledge and a correlative study in that it seeks to discover or establish the existence of a relationship between two or more aspects of a situation. These types of research will be applicable to this study, comprising a questionnaire survey.

3.3 Qualitative versus quantitative research methodology

Three approaches are employed in this study. They are the quantitative, qualitative and the mixed method.

3.3.1 The quantitative approach

A quantitative approach is chosen as the methodology that is most appropriate for the study because the purpose of the research concerns explanation of different aspects of project management, financial management and business management. It also involves explaining of the various factors challenging emerging contractors in funds management, the causes of these challenges and the impact that these challenges have on project delivery time, as well as identifying and assessing the current training and development programmes that assist emerging contractors in funds management and successful

project delivery time. Factors and sub-factors that cause challenges will be measured in ordinal values as the perceptions of emerging contractors in the industry. Furthermore, the quantitative approach is chosen as appropriate as it involves numerical data. In terms of the availability of literature for the study, its availability could be assumed to be largely one of the criteria suggested. Therefore, the quantitative approach was chosen, according to Leedy *et al.* (2014). The time for the field work of the research is relatively short. Leedy *et al.* (2014) advises that when the time available for the research is short, the quantitative approach is appropriate. Based on this, the quantitative approach was chosen. The target population for the study are emerging contractors. The characteristics of the data for the study are that they are numeric, representative and consist of large samples. Data will be analysed statistically and findings communicated in numbers. Based on these considerations, the quantitative approach is considered appropriate as a method for conducting the research.

3.3.2 Qualitative approach

A qualitative approach is also employed in this research. For the aim of this research to be illustrated, descriptive and explanatory methods are used and part of the findings will be expressed qualitatively.

3.3.3 Triangulation/ Mixed Method

Triangulation is used because it is a method that employs the use of qualitative and quantitative data to address a single research question or problem (Kumar, 2005). Fellows and Liu (2003) describe triangulation as the means of using both qualitative and quantitative techniques together. Further, they state that such combination is very powerful to gain insights and results. Methodological triangulation was used because more than one method of data analysis was employed and it include a mix of quantitative and qualitative sources, this method was bested suited for this study as it catered for qualitative and quantitative analysis methods.

3.3.3.1 Triangulation as a convergent method

This principal tenet of triangulation – that is, usually three investigative components being related to each in a research setting according to Edwards and Holt (2010) is also generally known as “convergent methodology”. A graphical description of a “multi-component” is shown in Figure 3.1. A triangulated component will therefore in some way be “related to its neighbours“. Figure 3.1 reveals that, component 2 is seen to have two relationships, these being to components 1 and 3 (labelled r1,2 and r2,3 respectively)

but, such relationships are not causal. An example in practice might mean that components 1-3 are separate data sources, entirely independent of each other, but relevant to the phenomenon being studied and therefore, in that way "related".

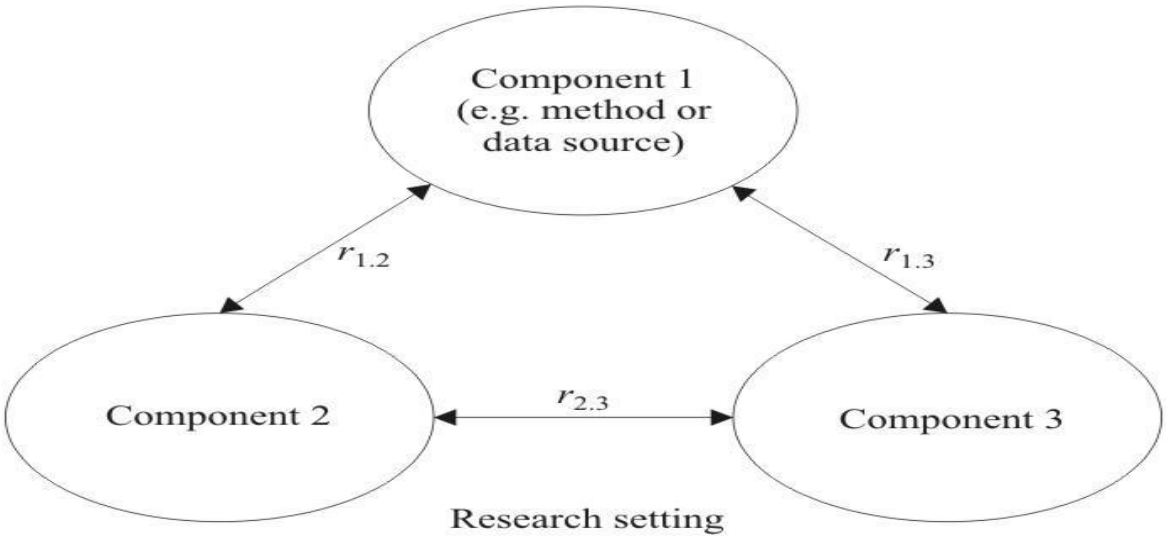

Figure 3.1 Related research components – the tenet of triangulation (Jack and Raturi (2006) cited in Edwards and Holt (2010)

Figure 3.2 indicates how components of triangulation (a convergent methodology) are intended to unite on a point, in reaching a research conclusion. Note that the contribution of each component to the point of convergence will typically differ in a given research setting (here shown as distance d1, d2 and d3) because each component is by design dissimilar. The rationale of triangulation therefore, is that any strengths or weaknesses in one component will be reconciled or tempered by another.

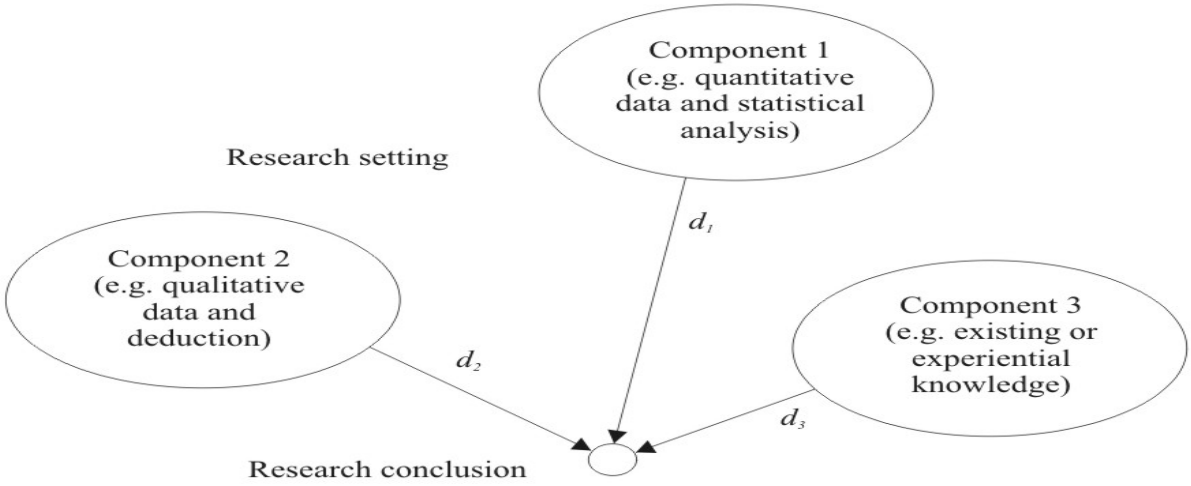

Figure 3.2 Convergence on a research conclusion using hybrid triangulation (Jack and Raturi (2006) cited in Edwards and Holt (2010))

3.3.3.2 Types of triangulations

There are five types of triangulation according to Edwards and Holt (2010) cited in Jack and Raturi (2006). They are: data; investigator; theory; method, and multiple triangulations.

Data triangulation

This involves more than one method of data sampling strategy and / or more than one way of data analysis is employed; may be single source taken in slices over time or related to space or origin.

Investigator triangulation

This involves more than one observer employed in data collection and / or more than one investigator is employed in data interpretation.

Theory triangulation

Theory triangulation is that which more than one theoretical scheme or theoretical standpoint is employed to interpret the phenomenon, that is, via data.

Methodological triangulation

Methodological triangulation is where more than one method of data collection and / or analysis is employed; may include a mix of quantitative and qualitative sources.

Multiple (Hybrid) triangulation

Multi or hybrid triangulation is the combination of different observers, perspectives, data sources, and methodologies used in the same investigation.

3.4 Research Method

The research is exploratory in nature. As explained above, it will use qualitative, quantitative and triangulation methods. Information or research data will be collected in the form of questionnaires from Emerging Contractors on issues relating to challenges, causes and impact of challenges they face in funds management and project delivery time. The questionnaires are distributed by emails and also given out on site visits. The methods are chosen because they are convenient for researcher and also minimise the waiting time to receive responses from research participants.

3.4.1 Data Collection

3.4.1.1 Primary and Secondary Sources

Primary Sources

The data used in this study is acquired by surveying existing literature regarding the challenges of emerging contractors, causes of challenges of emerging contractors in funds management and the impact of the challenges on project delivery. This process marked the development of the literature review of the study, after which two questionnaires are designed for gathering data.

Questionnaires are distributed to Emerging contractors and other construction industry stakeholders. The internet is used to get respondents contact details from Construction Industry Development Board, Government Departments such as Public Works, Department of Human Settlement, Department of Transport and Municipality websites. The websites for these organisations was visited to search for relevant information to the study. The information obtained from the respondents constitutes the primary data.

Secondary sources

The secondary data used in this research is obtained from various South African and international sources, including peer reviewed journals, published and unpublished conference papers, articles, books, theses and dissertations and the internet. The search for information is undertaken in the Durban University of Technology (DUT) library. The following data bases are searched for information and they included: EBSCO HOST; Nexus; Sabinet on-line, and Science direct.

3.5 Sampling

Sample

A sample in research implies a study of a sub-set of a population of interest**.** The sample consists of emerging contractors ranging from CIDB grade 1 to CIDB grade 5 registered under the General Building work category. Sampling is very important as it is not possible to examine the entire population. The population of the study is situated in KwaZulu-Natal Province, and it is selected for the following reasons: It guarantees inclusion of active contractors from the CIDB register and it takes into account what is feasible to meet the

aim of this research. In order to meet the aim and objectives outlined, this study adopts KwaZulu-Natal construction companies as the focus of the study. However, the focus is on the general building category only, which is denoted as “GB” in the CIDB grading.

3.5.1 Sample Frame

The composition of sample frame included KwaZulu Natal emerging contractors between CIDB grades 1 to CIDB grade 5 on the construction register service and who are active in the General Building (GB) category of works only. According to the CIDB registered contractors, there is a total of at least 6 237 registered contractors between (grades 1-5) in the general building category within the selected geographical area of KwaZulu-Natal at the time of sampling.

Table 3.1: Number of Registered Construction Companies

Grade	**Tender Value Limit (R)**	**Class of Works**
		GB
1	200 000.00	5 000
2	500 000.00	737
3	2 000 000.00	190
4	4 000 000.00	194
5	6 500 000.00	116
6	13 000 000.00	647
7	40 000 000.00	312
8	130 000 000.00	125
9	>130 000 000.00	47
Total		**7368**

Source: CIDB ANNUAL REPORT 2015/16

For the purpose of this study, contractors registered in General Building “GB” category within the province of KwaZulu-Nata between CIDB grade 1 to CIDB grade 5 are examined and presented in Table 3.2 below

Table 3.2: Composition of emerging contractors sample frame as at 14 August 2016

Grade	**Tender Value Limit (R)**	**Class of Works**
		GB
1	200 000.00	5 000
2	500 000.00	737
3	2 000 000.00	190
4	4 000 000.00	194
5	6 500 000.00	116
Total		**6 237**

Source: CIDB ANNUAL REPORT 2015/16

3.5.2 Sample Size

This indicates the number of respondents that are surveyed related to this study. According to the CIDB registered contractors, there is a total of at least 6 237 registered contractors between (grades 1-5) in the general building category within the selected geographical area of KwaZulu-Natal. This number makes it impossible to distribute questionnaires and expect responses from everyone. Leedy *et al.* (2014) advise that researchers should endeavour to maximise the sample size and provide the following guidelines for selecting a sample size:

For small populations with fewer than 100 people or other units, there is little point in sampling, survey the entire population;

If the population size is around 500, 50% of the population should be sampled;

If the population size is around 1 500, 20% should be sampled, and

Beyond a certain point (at about 5 000 units or more), the population size is almost irrelevant and a sample size of 400 should be adequate.

Table 3.3: Composition of emerging contractors sample size

Grade	**Tender Value Limit (R)**	**Class of Works**
		GB
1	200 000.00	400
2	500 000.00	250
3	2 000 000.00	100
4	4 000 000.00	100
5	6 500 000.00	100
Total		**950**

Source: CIDB ANNUAL REPORT 2015/16

Sampling was very important as it is not possible to examine the entire population. A total of 950 contractors were sampled.

3.5.3 Sampling techniques

Two major sampling approaches were identified by Leedy *et al* (2005) and they are:

Probability and Non-probability sampling approaches.

Probability

Probability sampling is the type which allows all the members of a population to be represented in the sample. In this study, samples were chosen from the larger population by a process known as random sampling. This is a process that allows each member of the population to have an equal chance of being selected. The various sampling

techniques employed in the selection of a probability sample are simple random, stratified random, systematic, and cluster sampling.

Simple random sampling allows the samples to be chosen by simple random selection whereby every member of the population has an equal chance of being selected.

Stratified random sampling happens in populations which consist of different groups. The samples are selected equally from each one of the group so as to be represented equally.

Cluster sampling was selected for this study because it sub-divides a huge area into smaller units. The KwaZulu-Natal province was sub-divided into three regions and further into districts. The clusters regions were made similar to one another as possible, with each region containing an equally heterogeneous mix of individuals. A subset of the identified region was randomly selected. The geographical area surveyed was KwaZulu-Natal.

Non-probability sampling

In non-probability sampling, individual elements of the population are not represented equally and members of the population have little or no chance of being sampled.

Proportional stratified sampling

The main characteristics of simple stratified random sampling design is that all the strata of the population is essentially equal in size. Proportional stratified sampling is characterised by a population that contains a definite strata that appears in different proportions within the population. Therefore, a sample option that will not disadvantage any strata is chosen for the selection of sizes. This implies that the member of each stratum has an equal opportunity of being selected. Selection of sample size is done proportionately (Leedy *et al.,* 2005).

Systematic sampling technique was used to select a sample size in sequence. A list of emerging contractors in KwaZulu-Natal was made from a population of interest. Every tenth unit on the list was selected and reconciled with the list to obtain the name of company to be surveyed.

Sample stratum and sample selection

KwaZulu-Natal is divided into three administrative regions namely: Southern Region; Northern Region and Midlands Region. The sample stratum and selection of sample size was discussed together. They were discussed based on the various contractors and their grades in the industry.

Table 3.4: Contractor grading and number

Contractor grading Number	Number available
Stage 1 contractors	5000
Stage 2 contractors	737
Stage 3 contractors	190
Stage 4 contractors	194
Stage 5 contractors	116

Source: CIDB Annual Report 2015/16

Not all emerging contractors in the province could be surveyed, because they constitute a very large sample size, based on the division of the KwaZulu Natal as described above. In order to achieve fair representation, KwaZulu-Natal contractors in different grades were chosen. This is also a province in which construction activity is high.

Proportional stratified sampling techniques and random sampling were employed in the selection of sample sizes. The population was sub-divided into alphabetical groups (stratified), and based on these groups, the proportional stratified sampling was chosen as appropriate for the selection of samples. Leedy *et al.* (2005) state that, if the population contains definite strata that appear in different proportions within the population, proportional stratified sampling should be employed. Having obtained the sample sizes based on this formula given as: (Number of sample in alphabetic group) X (total number to be sampled) / (total population). A cardboard box of 20 x 20 x 20 cm was made and pieces of paper numbered one to the number equivalent to the number of the sample size was folded, placed in the box and shaken together. From this the total number of the sample size was drawn. Then it was reconciled with the name on the list of each group and questionnaires were sent to these organisations. Tables 3.2 presents the sample sizes for the various grading category.

3.6 Research Instrument

The research instrument for this study is a questionnaire survey.

Questionnaire Design

The study is divided into two phases which consisted of different questionnaires:

The first phase entailed the main questionnaire that was developed and circulated among contractors of different grades with interested and willing participants. The first questionnaire addressed the research questions asked in the first chapter as well as addressing the issues found in the literature review section. The responses obtained from the participants was the basis for the development of the flowchart.

The second questionnaire was for the purpose of validating the flowchart and addressed the last objective stated in chapter one.

3.6.1 Tools for data analysis

The statistical tools for data analysis included percentages, mean scores, standard deviation, Cronbach's alpha coefficient and factor loading, with the aid of using the SPSS statistical package.

3.6.1.1 Factor Analysis

Why is factor analysis important?

Factor analysis is a statistical technique whose main goal is to scale down data. A typical use of factor analysis is in survey research, where a researcher wishes to represent a number of questions with a small number of hypothetical factors. For example, as part of a provincial survey on contractor's funds management, respondents have answered three main separate questions regarding challenges of emerging contractors, causes of challenges relative to funds management and the impact of challenges on project delivery time. Each question, by itself, would not be enough to measure contractor financial management practices, but combined they provide a better measure of funds management. Factor analysis is used to check whether the three measures do, in fact, measure the same thing. If so, they are then merged to create a new variable, a factor score variable that contains a score for each respondent on the factor. Factor techniques are relevant to a variety of situations. A researcher may want to know if late payments have an impact on project delivery time, or if technical skills help in the successful delivery of a project. You need not believe that factors actually exist in order to perform a factor analysis, but in practice the factors are usually interpreted, given names, and spoken of as real things.

3.6.1.2 Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO)

Kaiser-Meyer-Olkin (KMO) Test is a measure of how suited your data is for Factor Analysis. The test measures sampling adequacy for each variable in the model and for the complete model. The statistic is a measure of the proportion of variance among variables that might be common variance. The lower the proportion, the more suited your data is to Factor Analysis. KMO returns values between 0 and 1. A rule of thumb for interpreting the statistic:

KMO values between 0.8 and 1 indicate the sampling is adequate

KMO values less than 0.6 indicate the sampling is not adequate and that remedial action should be taken.

KMO Values close to zero means that there are large partial correlations compared to the sum of correlations. In other words, there are widespread correlations which are a large problem for factor analysis.

If two variables share a common factor with other variables, their partial correlation (aij) will be small, indicating the unique variance they share.

aij = (rij •1, 2, 3, …k)

KMO = (ΣΣ r2 ij) / (ΣΣ r2 ij + (ΣΣ a2 ij)

If aij ≅ 0.0 the variables are measuring a common factor, and KMO ≅ 1.0

If aij ≅ 1.0 the variables are not measuring a common factor, and KMO ≅ 0.0

Table 3.5: Interpretation of the KMO as characterized by Kaiser, Meyer, and Olkin …

KMO Value	Degree of Common variance
0.90 to 1.00	Marvelous
0.80 to 0.89	Meritorious
0.70 to 0.79	Middling
0.60 to 0.69	Mediocre
0.50 to 0.59	Miserable
0.00 to 0.49	Unacceptable

3.6.1.3 Bartlett's test of sphericity

Calculates the determinate of the matrix of the sums of products and cross-products (S) from which the inter correlation matrix is derived. The determinant of the matrix S is converted to a chi-square statistic and tested for significance. The null hypothesis is that the inter-correlation matrix comes from a population in which the variables are non-collinear (i.e. an identity matrix) and that the non-zero correlations in the sample matrix are due to sampling error.

$$T= (N-k) \ln s_p^2 - \sum_{i=1}^{k} (N_i-1) \ln s_{i1}^2 + (1/(3(k-1))) \left(\left(\sum_{i=1}^{k} 1/(N_i-1)\right) - 1/(N-k)\right)$$

In the above, s_i^2 is the variance of the *i*th group, *N* is the total sample size, *Ni* the sample size if the *i*th group, *k* is the number of groups, and s_p^2 is the pooled variance.

Chi-square

$$x_c^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

3.6.3 Ethical issues

Durban University of Technology research ethics policy:
The Durban University of Technology (DUT) has a clear policy on all research conducted by members of its community. The research is classified as Expedited review (minimal risk to humans, animals or environment). Each category has a committee which receives applications from researchers and reviews their submissions prior to issuance of ethics' clearance. The policy stipulates that ethics clearance be sought prior to conducting any research in the named categories. This is to ensure that relevant ethical issues are adequately considered in the research methodology adopted. This policy is in line with conventional research ethics observed by National Institute of Health office of Extramural Research for "Protecting Human Research Participants". This research has humans as subjects; therefore all research ethics' protocols of DUT are observed. The University's research policy stipulates that all human survey research must be reviewed and approved by the relevant research committee before its commencement.

3.6.4 Limitations of the study

Time given to conduct field work is short. The study would have benefited more from a broader context such as examining South Africa instead of focusing on just one province.

3.6.5 Validity and reliability

Studies in general have to be conducted in a valid and logical manner. The basis of the argument and evidence that supports the study should be logical and valid (Aiyetan, 2010). Mouton (2001) states that, to collect data, measuring instruments have to be used. These could be complicated instruments stemming from high resolution microscopes to

gas spectrometers, or instruments such as questionnaires, observation schedules, interviewing schedules and psychological tests. Leedy *et al.* (2014) highlight validity and reliability as two factors that are vitally important when considering the measurement of data: Validity is how sound and effective is the measuring instrument. This refers to how the instrument functions and how accurate it is in reading data; and Reliability deals with how accurate the measuring instrument is and how dependable the data read or taken from the instrument is.

There are many ways in which the validity of a measurement is tested. These include: Face validity (this is a subjective judgement and is given by the researcher); Criterion related validity (judgment is made of the measurement based on the standards that have been set); Content validity (this is the accuracy with which an instrument measures the factors or situations under study); Construct validity (this is the extent to which the conclusions reached in a study is free from bias), and External validity (this is the extent to which the conclusions reached in a study are generalised and applied to samples in other cases. Kruger and Welman (2001), agree that there are two types of validity, namely: Construct validity (when a variable is measured with an instrument, the instrument must measure particularly what it is intended to measure) and Criterion-related validity (this refers to the correctness of the result of a measurement to the widely accepted standard result. The validity of the research instrument was determined through face validity and content validity. Respondents in the study confirmed that the instrument could provide adequate data to address the research objectives. The researcher also carried out scrutiny and modification of the research instrument to arrive at a workable questionnaire.

Reliability is the extent to which assessments are consistent. It is concerned about being accurate. Leedy *et al.* (2014) state that the measuring instrument must be consistent, it must yield certain results when measurement is repeated and show the extent of error of a result. Reliability is about the question: with what accuracy does the measurement, test inventory or questionnaire measure what it is intended to measure? In this study, for the first questionnaire, Cronbach's Alpha coefficient was calculated for all questions designed to be responded with Likert scale such as: challenges of emerging contractors (question one); causes of challenges of emerging contractors in funds management (question two) and the impact of emerging contractor challenges on project delivery time (question three). Results of reliability and validity analyses are presented in chapter four. A flowchart was developed to mitigate emerging contractor challenges in funds

management and validated in chapter five, the process explained above was done for validity and reliability.

CHAPTER 4: RESEARCH FINDINGS AND DATA ANALYSIS

This chapter presents the results and discusses the findings obtained from the questionnaire in this study. The questionnaire is the primary tool that is used to collect data and is distributed to 950 contractors. The data collected from the responses is analysed with SPSS version 24.0. The results will present the descriptive statistics in the form of graphs, cross tabulations and other figures for the quantitative data that was collected. Inferential techniques include the use of matrix tables which present Kaiser-Meyer-Olkin measure, Bartlett's Test and chi-square test values. The requirement is that Kaiser-Meyer-Olkin Measure of Sampling Adequacy should be greater than 0.50 and Bartlett's Test of Sphericity less than 0.05.

4.1 Response to questionnaires

Two questionnaires were used for the study which included one main and a validation questionnaire which will be analysed in the next chapter.

4.1.1 Response to Main Questionnaire

Table 4.1 presents the respective response rates of emerging contractors in KwaZulu-Natal province.

Table 4.1: Contractor's response rate according to region in KwaZulu-Natal.

Region	**Sample size (No.)**	**Questionnaires received (No.)**	**Response rate (%)**
Southern	317	35	11.0
Northern	317	12	3.8
Midlands	316	13	4.1

Questionnaire success rate = questionnaire received x 100 / (questionnaires administered –returned questionnaires)

60 x 100 / 950 = 6.3%

The questionnaire response rate for main questionnaire is 6.3%. Based on the number of questionnaires received, the response rate is deemed sufficient for statistical analysis that is to be conducted.

4.1.2 Response rate

The following steps were taken in order to improve the response rate:
The respondents were assure that they will remain anonymous; the covering letter made a humane appeal to the respondents and explained what needs to be measured; the length of the questionnaire was kept to a minimum; phone calls and site visits were constantly made to remind respondents about completing the questionnaire.

4.1.3 Missing Values

Missing values in questionnaires cannot be avoided even though that is not preferable, as some of the respondents may have limited understanding of some factors. The questionnaire was designed in such a manner so as to provide the respondents with the opportunity to choose the “unsure” option instead of rating a factor incorrectly.

4.2 Demographic data

This section describes the demographics of the respondents surveyed in this research. It reveals their gender, age, highest qualification and their position in the organisation they work for and their CIDB grade.

4.2.1 Region

Figure 4.1 indicates the province distribution of the respondents. The majority of respondents belong to the southern region and constitute (58%) of the total sample.

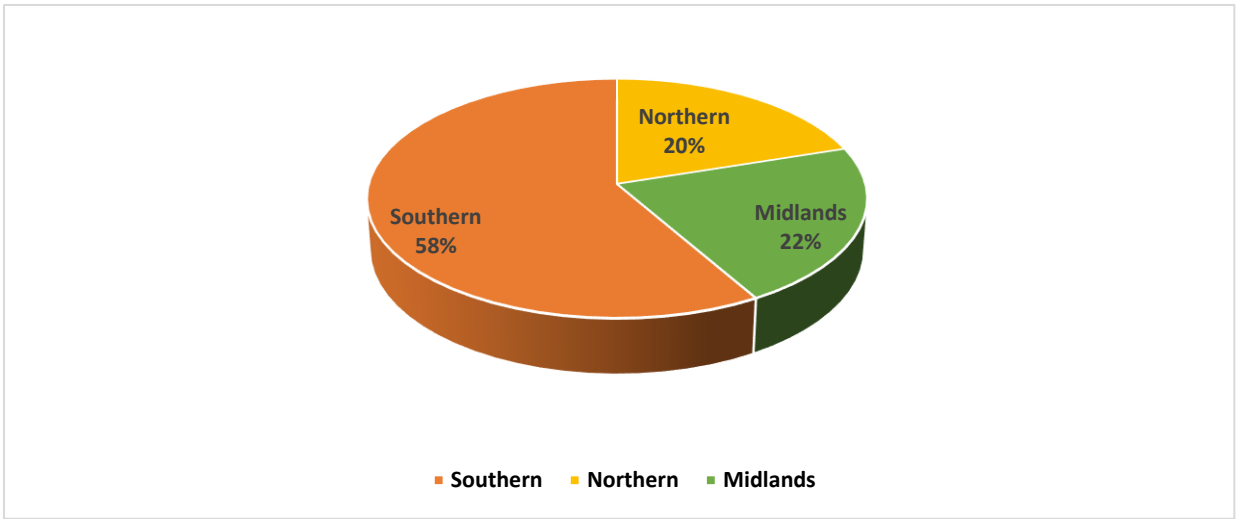

Figure 4.1: Region distribution of emerging contractors in KwaZulu-Natal

4.2.2 Gender

Figure 4.2 indicates that male gender is dominant in the construction industry in KwaZulu-Natal with 75% representation. This supports the norm that construction industry is male dominated.

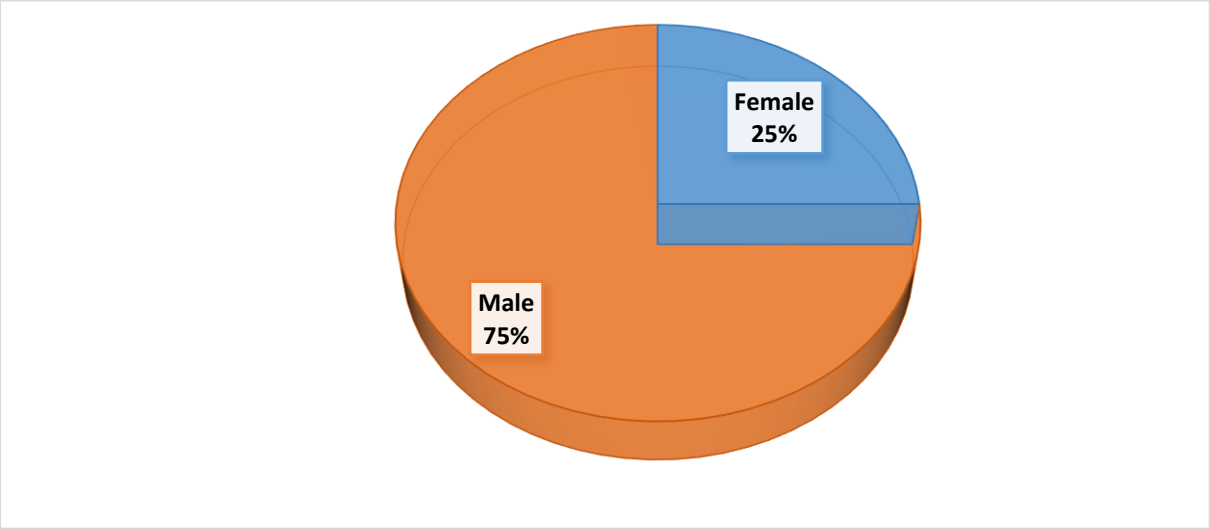

Figure 4.2: Gender distribution of respondents

4.2.3 Respondents' age

Figure 4.2 indicates the frequency of respondents' age. Respondents that are over the age of thirty one predominate (48.3%) in the sample investigated. Respondents between the age of twenty-six and thirty constitute 23.3% while those between the ages forty-one to fifty constitute 20%. It is be concluded that respondents that make up the survey sample are mature, have a high probability of being responsible, and are sufficiently experienced in the industry.

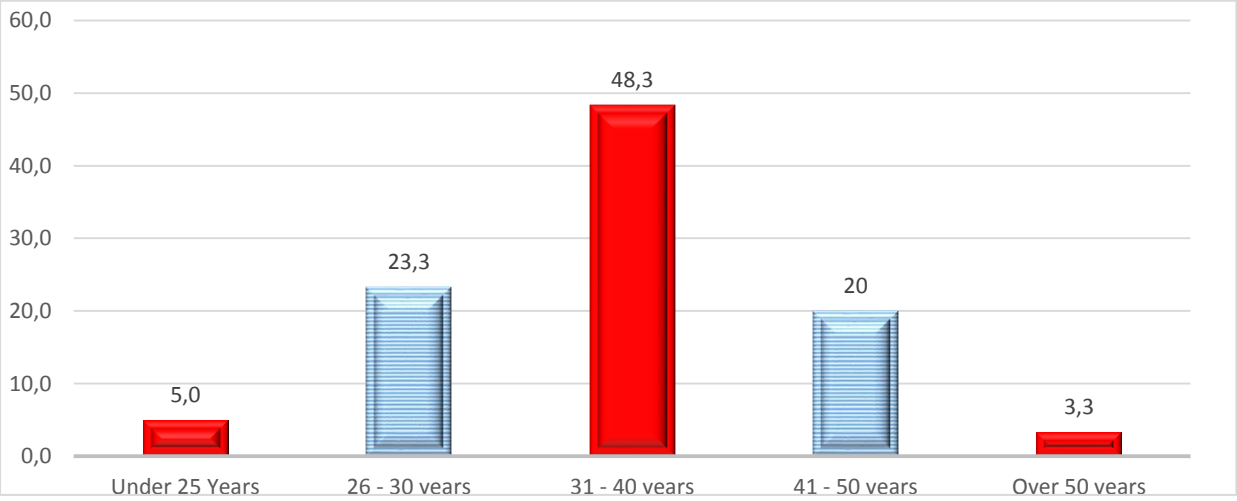

Figure 4.3: Respondents age

4.2.4 Respondents highest formal qualification

Figure 4.4 indicates the highest academic qualification of the respondents. Most (40%) of the respondents have diplomas, and they dominate in the sample. Following closely are respondents with matric certificates, totalling 35%. Respondents with the B. Tech qualification rank next to those who have matric certificates in the form of 21.7%. A fraction constituting 1.7% has bachelors' degrees and the rest of the respondents have other relevant qualifications in the industry they are employed in. This analysis reveals that well qualified personnel are employed in the industry therefore performance is expected to be optimal. It also indicates that their perceptions are relied on.

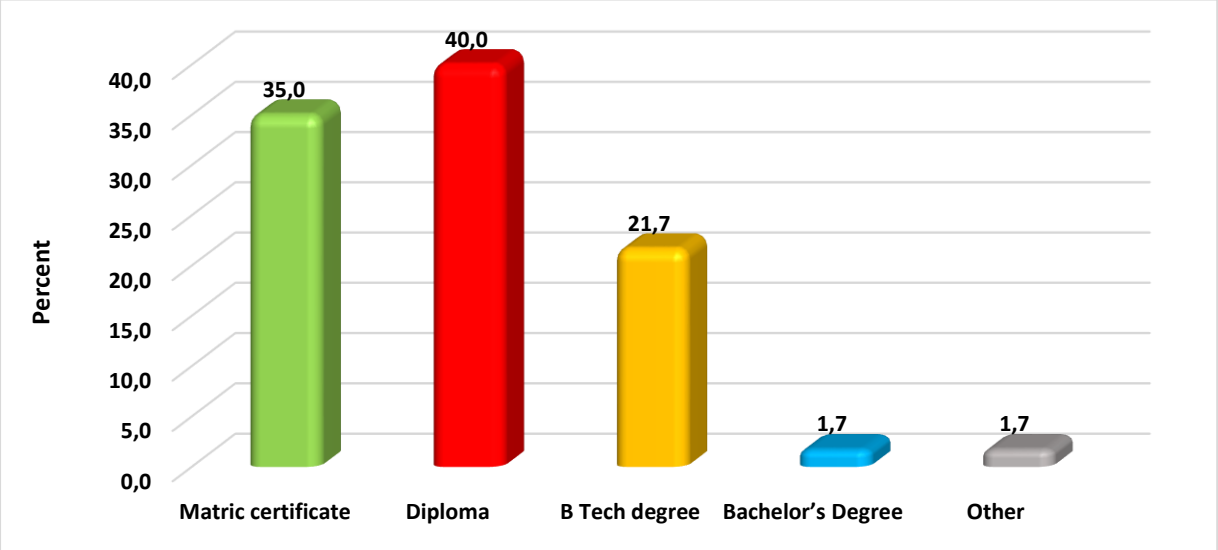

Figure 4.4: Distribution of respondent's qualifications

4.2.5 Respondents CIDB grading

Figure 4.5 indicates the CIDB grading of the respondents. 38% of the respondents have CIDB grade 5, and they predominate in the sample. Following closely are respondents in CIDB grade 1, totalling 27%. Respondents with CIDB grade represent 13% while following closely are CIDB grade 3 with 12% and lastly CIDB grade 2 respondents representing only 10%. This analysis reveals that entrants into the industry are many, but growth potential from one grade to another is a huge struggle for many contractors. It takes a long time for many contractors to reach CIDB grade 5 and move into the pool of sustainable companies. This is a challenge that the industry needs to address.

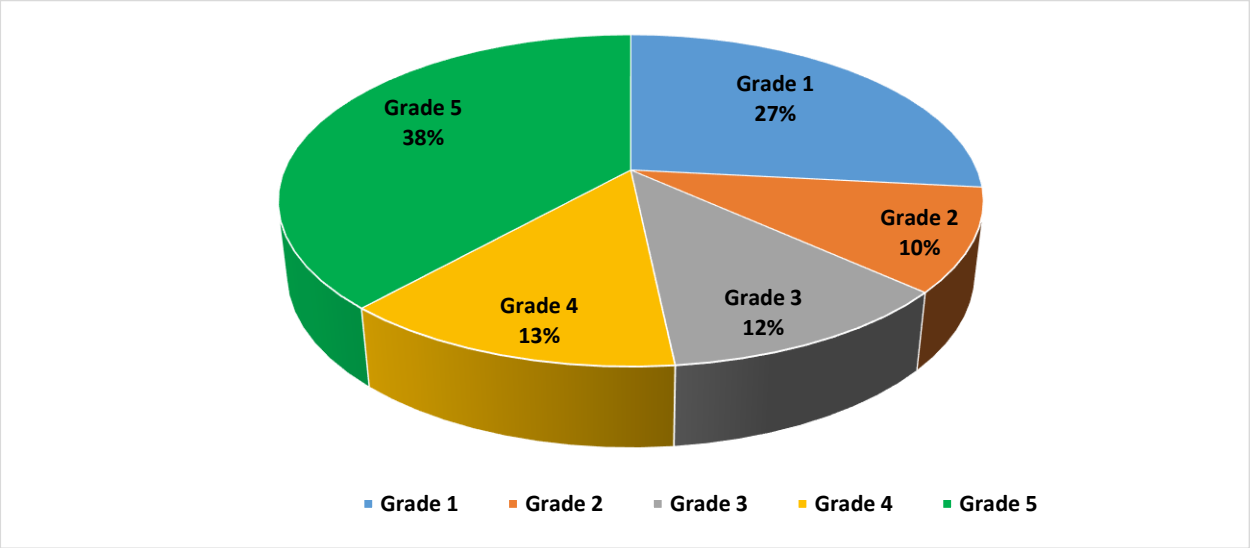

Figure 4.5: Distribution of respondent CIDB grading

4.2.6 Status of respondents in their organisation

Figure 4.6 indicates that managing directors / managing members / principals make up (66.7%) and are predominant among respondents. Following are other key role players in the industry such as project managers, quantity surveyors and inspectors, making (11.7%). Next is site agent/ clerk of works constituting (10%), followed by supervisors/foreman making up (8.3%). The lowest response is relative to senior executives/ managers making up only (3.3%). Based upon the above analysis 70% constitute business owners or senior staff, which is an indication that the data obtained from these workers are relied on.

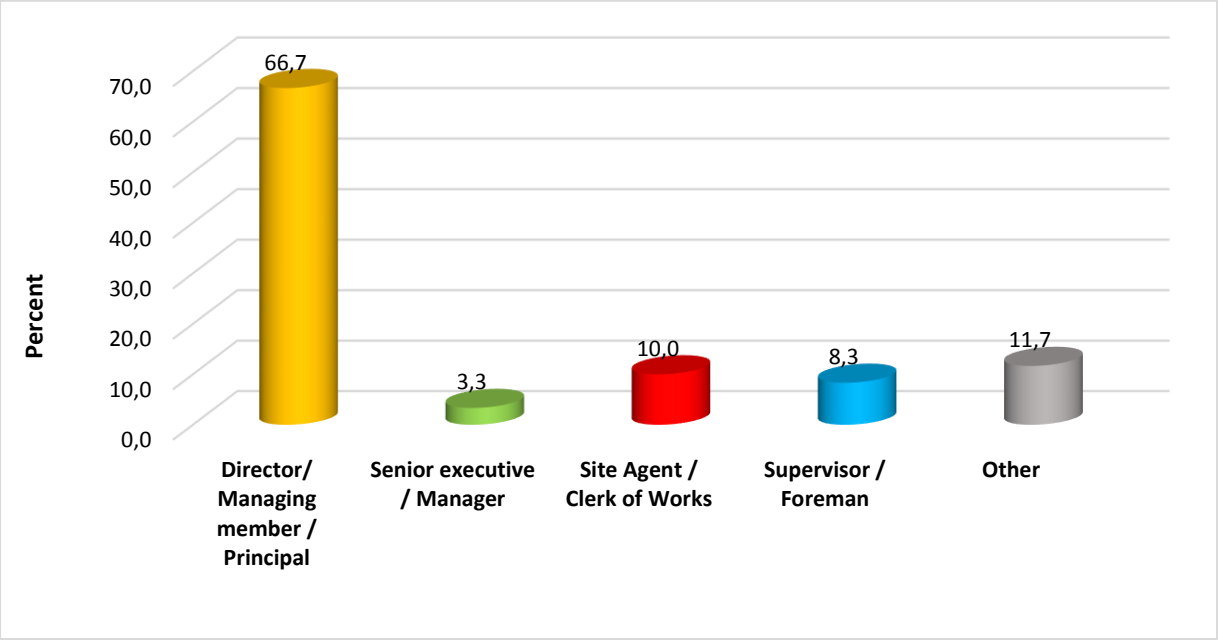

Figure 4.6: Respondents status in their organisation

4.2.7 Respondents' years of experience

Figure 4.7 indicates the respondents experience in the industry, 41.7% of the respondents have between six to ten years experience in the construction industry, and they predominate in the sample. Following closely are respondents with zero to five years, totalling 30%. Respondents with eleven to fifteen years experience represent 20%, while those who have between sixteen to twenty years experience represent 6.7% and only a fraction of respondents have experience between twenty one to twenty five years representing 1.7%. This analysis indicates that the industry is highly dominated by young and energetic people representing an overall percentage of 91.7%, who have sufficient experience and ought to be producing good quality projects. A respondent that has obtained up to five years' experience is considered to be knowledgeable in his / her discipline; therefore the data obtained from these respondents is deemed to be reliable.

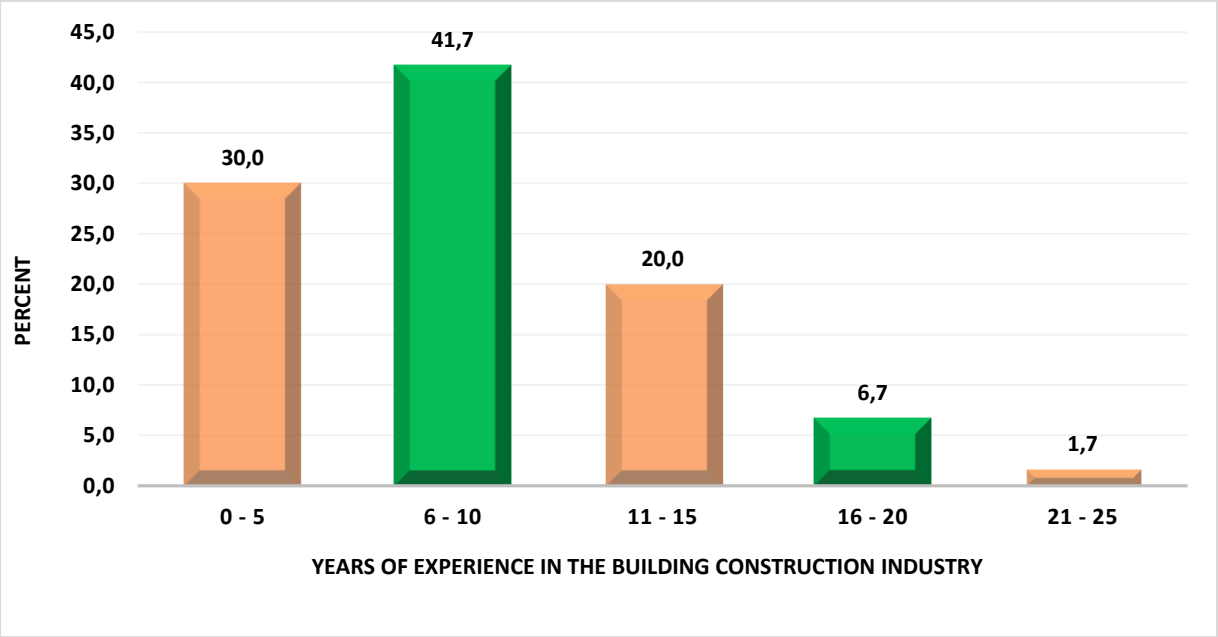

Figure 4.7: Respondents experience in the industry

4.2.8 Type of facility being constructed

Figure 4.8 presents the type of facility being constructed by the respondents. The predominating types of facilities that respondents have been involved in is other (which constitutes of civil works such as roads, bridges and sport fields) representing (40%). Following closely is the development of residential facilities (26.7%); next is community halls (11.7%), followed by office parks and school buildings (8.3% each), and lastly hospitals, block of flats and hotels/motels (1.7%) respectively. It is deduced from the analysis that respondents have been involved in the construction of facilities that have a

long duration and bring a wealth of experience to answering the questions contained in the questionnaire satisfactorily.

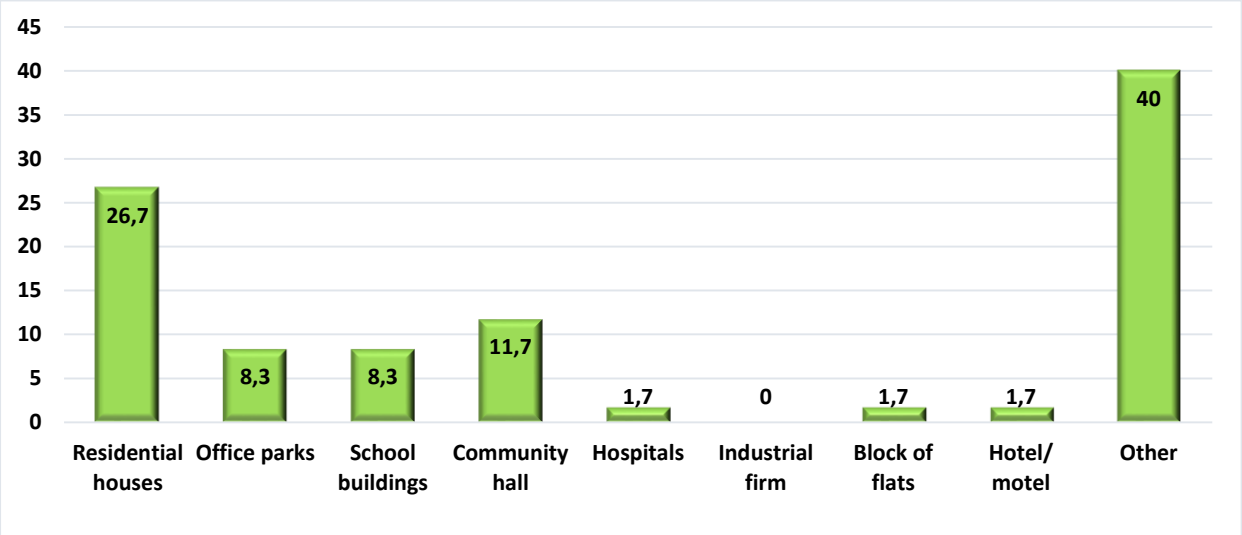

Figure 4.8: Type of facilities being constructed by respondents

4.2.9 Number of floors of facility

Figure 4.9 indicates that most of the respondents (74.5%) have been involved in the construction of facilities with more than one floor, followed by those constructing between two and three to five floors (10.6%) respectively and only a fraction of respondents are experienced in constructing six and more than six floor facilities (2.1%). Based upon this, respondents are deemed to have adequate capacity for responding to the questionnaire.

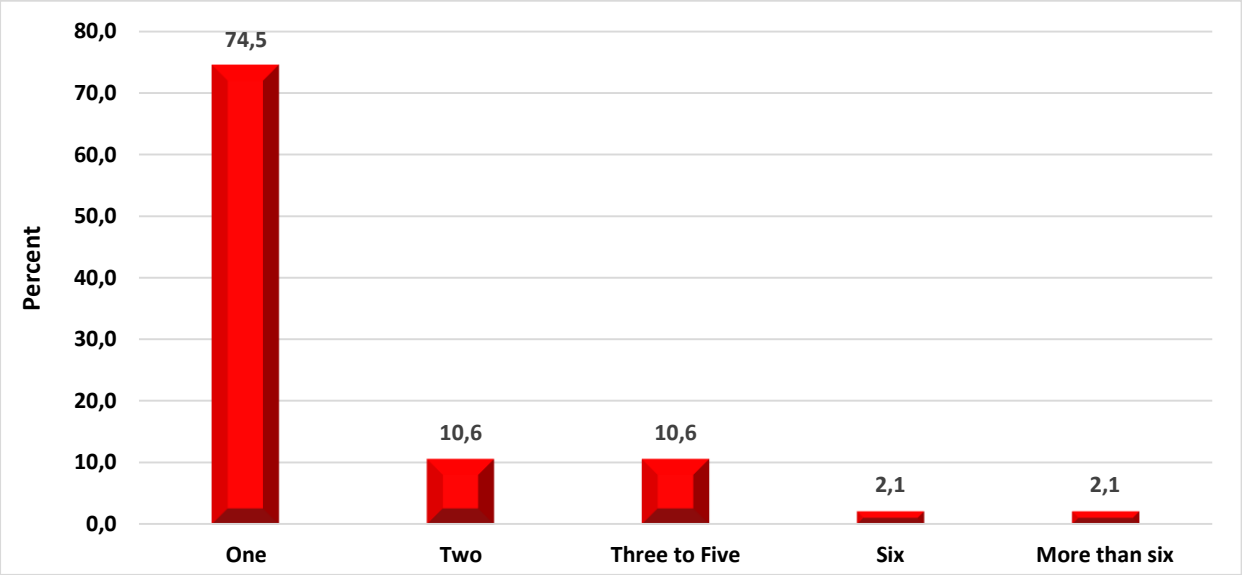

Figure 4.9: Number of floors of facilities being constructed

4.2.10 Project scope details

Table 4.10 presents the mean in terms of cost and project duration. The mean for initial and final project costs are R11.48m and R12.64m respectively. The mean construction period is 31, 5833 weeks. It indicates that projects that respondents are involved with are medium to large and that the respondents are likely to be experienced and matured service providers.

Table 4.2: Project scope details

Factor	Descriptive statistics		
	Valid no.	Mean	Std. Dev.
Initial cost (Rm)	60	11, 48	30,11
Final cost (Rm)	60	12,64	34,59
Final Construction Period at Tender Award (in weeks)	60	31,5833	33,5571

4.3 Analysis of main questions in first questionnaire

Questionnaires were used in the collection of data. A five-point Likert scale including “Unsure‟ (U) and “Does not‟ (DN) options were used to measure the perceptions of emerging contractors in the construction industry in KwaZulu-Natal province. Tables 4.5 to 4.7 indicate the perceptions of respondents relative to the challenges of emerging contractors, the causes of challenges of emerging contractors in funds management and the impact of emerging contractor challenges on project delivery time in terms of percentage responses to a scale of 1 to 5, and a MS ranging between 1.00 and 5.00. Mean Scores were calculated for each statement to enable an interpretation of the percentages relative to each point on the response scale. Given that there are five points on the scale, and that 5 – 1 = 4, the ranges were determined by dividing 4 by 5 which equates to 0.8. Consequently the ranges and their definitions are as follows:

>4.20 ≤ 5.00 between a near major to major / major influence;

> 3.40 ≤ 4.20 between moderate influence to a near major / near major influence;

> 2.60 ≤ 3.40 between a near minor to moderate influence / moderate influence;

> 1.80 ≤ 2.60 between a minor to near minor influence / near minor influence, and

> 1.00 ≤ 1.08 between a minor to near minor influence.

4.3.1 Reliability tests

The two most important aspects of precision are **reliability** and **validity**. Reliability is determined by taking several measurements on the same subjects. A reliability coefficient of 0.60 or higher is considered as “acceptable” for a newly developed construct. The results of the item analysis conducted to determine the reliability of the summated scores calculated for the various factor categories are reported in this section. The item analysis was conducted for the sixty five items (statements) in the questionnaire that were summarised into scores for the ten factor categories. For each factor Cronbach’s coefficient α was calculated and a factor analysis specifying a one factor model was conducted.

4.3.1.1 Cronbach’s coefficient α test

Tests for the internal reliability of the factors in each category were conducted by determining their Cronbach’s coefficient α value. Table 4.3 presents the results:

Table 4.3: Cronbach’s coefficient α value for all factor categories

Factors categories	No. of Items	Cronbach’s Alpha
Challenges of emerging contractors	9	0,902
Client related issues	8	0,932
Contractor-related issues	7	0,930
Labour and equipment related issues	3	0,773
Materials-related issues	4	0,847
Consultant-related issues	10	0,943
Community related issues	3	0,742
Contractual relationship related issues	3	0,911
External issues	4	0,884
Impact of emerging contractors’ challenges on project delivery time.	12	0,925

The reliability scores for all the sections exceeded the recommended Cronbach’s alpha value of 0.600 for a newly developed construct. This indicates a degree of acceptable, consistent scoring of the research. It should be noted that Cronbach’s α values of 0.50 to 0.70 are acceptable.

4.3.1.2 Results of factor analysis

The matrix tables is preceded by a summarised table that reflects the results of KMO and Bartlett's Test. The requirement is that Kaiser-Meyer-Olkin Measure of Sampling

Adequacy should be greater than 0.50 and Bartlett's Test of Sphericity less than 0.05. In all instances, the conditions are satisfied which allows for the factor analysis procedure. Factor analysis is done only for the Likert scale items. Certain components are divided into finer components. This is explained below in the rotated component matrix. The results of the analysis are presented in Table 4.4.

Table 4.4: Summary of factor analysis conducted for category analysis

Factor Analysis	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	Bartlett's Test of Sphericity		
		Approx. Chi-Square	df	Sig.
Challenges of emerging contractors	0,816	167,667	36	0,000
Client related issues	0,859	260,969	28	0,000
Contractor related issues	0,882	205,115	21	0,000
Labour and equipment related issues	0,669	41,403	3	0,000
Materials related issues	0,788	86,661	6	0,000
Consultant related issues	0,830	363,823	45	0,000
Community related issues	0,595	38,387	3	0,000
Contractual relationship related issues	0,700	91,173	3	0,000
External issues	0,790	85,347	6	0,000
Impact of emerging contractors' challenges on project delivery time.	0,821	380,244	66	0,000

All of the conditions are satisfied for factor analysis. That is, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy value should be greater than 0.500 and the Bartlett's Test of Sphericity sig. value should be less than 0.05.

Table 4.5: Challenges of emerging contractors

Rotated Component Matrix[a]		
Factor	Component	
	1	2
Inability to get credit from material and plant suppliers, inability to raise and manage cash flows and to secure bank loans.	0,526	0,477
Inability to employ competent staff due to affordability	0,601	0,499
Poor contract documentation skills	0,892	0,146
Fronting for established contractors	0,345	0,726
Lack of entrepreneurial skills	0,841	0,203
Lack of proper training	0,879	0,188
Lack of resources for either large or complex construction work	0,735	0,186
Lack of technical, financial, contractual, and managerial skills	0,846	0,243
Late payment for the work done which ultimately causes project delays.	0,007	0,942
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.		
a. Rotation converged in 3 iterations.		

The following tables fall under Table 4.6: Causes of challenges of emerging contractors in funds management and have been divided into eight main sub-headings as follows:

Table 4.6 (a): Client related issues

Rotated Component Matrix[a]		
Factor	**Component**	
	1	**2**
Insufficient funding	0,363	0,806
Interference with project performance (vested interests)	0,262	0,903
Delay or non-payment for completed works	0,305	0,895
Impractical allocation of resources	0,540	0,667
Unrealistic contract duration	0,704	0,316
Wrong choice of consultants & sub-contractors	0,897	0,282
Slow decision making	0,854	0,331
Design alterations & change orders	0,881	0,331
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.		
a. Rotation converged in 3 iterations.		

Table 4.6 (b): Contractor related issues

Component Matrix[a]	
Factor	Component
	1
Poor coordination of subcontractors	0,792
Inappropriate construction methods	0,925
Inadequate planning	0,905
Inadequate experience	0,919
Mistakes during construction stage	0,844
Incompetent site management	0,872
Wrong choice of bankers	0,581
Extraction Method: Principal Component Analysis.	
a. 1 component extracted.	

Table 4.6 (c): Labour and equipment related issues

Component Matrix[a]	
Factor	**Component**
	1
Unskilled site manpower	0,865
Improper equipment selection & faulty equipment	0,868
Labour disputes	0,759
Extraction Method: Principal Component Analysis.	
a. 1 component extracted.	

Table 4.6 (d): Materials related issues

Component Matrix[a]	
Factor	**Component**
	1
Poor quality materials	0,710
Material shortages	0,858
Late delivery of material	0,894
Material shortages resulting from damages	0,857
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

Table 4.6 (e): Consultant related issues

Component Matrix[a]	
Factor	**Component**
	1
Inappropriate design	0,913
Poor contract management	0,907
Late identification of errors & resolution of drawings; specification errors & omissions	0,910
Late preparation of drawings and other contract documents	0,786
Improper contract packaging/delivery strategy	0,752
Over inspection	0,524
Long waiting time for inspection & testing	0,794
Inappropriate coordination of information	0,860
Inappropriate construction methods	0,882
Poor supervision resulting in rework	0,769
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

Table 4.6 (f): Community related issues

Component Matrix[a]	
Factor	**Component**
	1
Lack of community buy-in	0,663
Delay or non-payment of compensation	0,862
Community unrest, militancy & communal crises	0,901
Extraction Method: Principal Component Analysis.	
a. 1 component extracted.	

Table 4.6 (g): Contractual relationship related isues

Component Matrix[a]	
Factor	**Component**
	1
Lack of adequate communication between the parties	0,880
Major disputes & negotiations	0,957
Wrong organizational structure linking to the project	0,928
Extraction Method: Principal Component Analysis.	
a. 1 component extracted.	

Table 4.6 (h): External issues

Component Matrix[a]	
Factor	**Component**
	1
Weather conditions	0,819
Change in government's leadership & policies	0,877
Natural disasters (e.g. floods, lightning strikes)	0,935
Interference by political leaders	0,823
Extraction Method: Principal Component Analysis.	
a. 1 component extracted.	

Table 4.7: Impact of emerging contractor challenges on project delivery time

Rotated Component Matrix[a]			
Factor	**Component**		
	1	**2**	**3**
The client's understanding of the design, procurement, and construction processes	0,925	0,152	0,145
Quality management during design	0,933	0,220	0,148
Quality management during construction	0,840	0,363	0,255
Management techniques used for planning and control	0,661	0,303	0,531
Economic policy	0,551	0,108	0,619
Constructability of design	0,250	0,575	0,515
Site ground conditions	0,074	0,722	0,363
Motivation of staff	0,164	0,275	0,861
Management style	0,162	0,218	0,820
Site access	0,375	0,823	-0,013
Physical environment considerations	0,203	0,869	0,236
Socio-political considerations	0,222	0,572	0,441
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 5 iterations.			

Factor analysis is a statistical technique whose main goal is to minimise data. A typical use of factor analysis is in survey research, where a researcher wishes to represent a number of questions with a small number of presumed factors. With reference to the table above: The principle component analysis was used as the extraction method, and the rotation method was Varimax with Kaiser Normalization. This is an orthogonal rotation method that minimizes the number of variables that have high loadings on each factor. It simplifies the interpretation of the factors. Factor analysis/loading show inter-correlations between variables. Items of questions that loaded similarly imply measurement along a similar factor. An examination of the content of items loading at or above 0.50 (and using the higher or highest loading in instances where items cross-loaded at greater than this value) effectively measured along the various components.

It is noted that the variables that constituted the various sections loaded along 2 or 3 components (sub-themes). This means that respondents identified different trends within the section. Within the section, the splits are colour coded and codes are separated as follows: Code 1 is yellow; Code 2 is green and Code 3 is blue. Based upon the factor analysis loadings (rotated component matrix) obtained for factors, the majority are greater than 0.50. It is deemed that the items for all factor categories have good agreement and this means that the factors adequately describe these categories.

4.4 Main Questionnaire Analysis

4.4.1 Challenges of Emerging Contractors in starting and managing a project

Table 4.8: Challenges of Emerging Contractors- factors

Factor	Response (%)							Mean Score	Standard Deviation	Rank
	Unsure	Does not	Minor.....Major							
			1	2	3	4	5			
Late payment for the work done which ultimately causes project delays	0,0	8,3	15,0	16,7	23,3	11,7	25,0	3,16	1,437	1
Lack of resources for either large or complex construction work	0,0	6,8	22,0	15,3	18,6	16,9	20,3	2,98	1,484	2
Inability to get credit from material and plant suppliers, inability to raise and manage cash flows and to secure bank loans	8,3	5,0	23,3	13,3	11,7	20,0	18,3	2,96	1,533	3
Inability to employ competent staff due to affordability	3,3	8,3	23,3	16,7	15,0	16,7	16,7	2,85	1,486	4
Lack of technical, financial, contractual, and managerial skills	0,0	8,3	30,0	16,7	13,3	20,0	11,7	2,64	1,458	5
Lack of proper training	0,0	15,0	31,7	11,7	15,0	11,7	15,0	2,61	1,537	6
Poor contract documentation skills	3,3	3,3	38,3	11,7	26,7	6,7	10,0	2,34	1,366	7
Lack of entrepreneurial skills	1,7	10,0	38,3	21,7	11,7	11,7	5,0	2,13	1,272	8
Fronting for established contractors	13,6	27,1	32,2	10,2	3,4	6,8	6,8	2,09	1,463	9

Table 4.8 presents the respondents' rating of the challenges of emerging contractors on various factors of starting and managing a project. It is notable that all factors in the category have MSs > 2.08 ≤ 3.16, which indicates that the factors have between a near minor to moderate / moderate influence on starting and managing a project.

The factor with the most significant influence is late payment for the work done which ultimately causes project delays (MS = 3.16). This agrees with the findings of Mashatole (2014) as one of the major challenges facing emerging contractors in funds management. Payment may not be effected as a result of poor work standard, which negatively affects the funds management of these contractors. The lack of funds affects the purchasing power of these contractors' relative to resources required (MS=2.98) for the execution of project, hence they fail. The inability to secure credit for materials and bank loans (MS=2.96) adversely affects their funds management. This could be as a result of credit worthiness or lack of adequate knowledge to obtain them. This factor agrees with the findings of Chen, (2007) on contributory factors to emerging contractors' failure.

The second most significant factor in this category is lack of resources for either large or complex construction work (MS= 2.98). Majority of emerging contractors lack the required resources to do work due to not having sufficient finances to purchase construction equipment that is needed or money to pay required specialists at project implementation phase. This forces them to hire equipment which is not always readily available when needed due to the high demand for plant or employ specialists on a contract basis and release them on project completion.

The third most significant factor in this category is inability to get credit from material and plant suppliers, inability to raise and manage cash flows and to secure bank loans (MS= 2.96). Securing credit from suppliers is one of the biggest challenges that emerging contractors have because they do not have collateral and their credit ratings are usually not in good standing. Raising and managing cashflows is also another challenge because of inconsistent workflow and delayed payments. Financial institutions do not easily issue loans to emerging contractors because they view construction as a risky business with a bad reputation. It becomes extremely difficult secure any loan when emerging contractors do not have collateral.

Poor contract documentation skills (MS=2.34) and lack of entrepreneurial skills (MS=2.13) are least significant factors in this category. Without these skills, businesses are likely to fail. Business and contract documentation skills go hand-in-hand to assist business owners to secure contracts and run successful businesses.

The least significant factor is fronting for established contractors (MS=2.09). The construction industry is a sector where all entrepreneurs want to grow and fronting for established companies does not assist emerging contractors in their growth potential. Fronting also does not transfer any skills or resources to the company that is being used as a front hence this factor is least influential.

4.4.2 (a) Causes of challenges of emerging contractors in funds management

Table 4.9 (a): Causes of challenges of emerging contractor's in funds management-factors

Factor	Response (%)							Mean Score	Standard Deviation	Rank
	Unsure	Does not	Minor.....Major							
			1	2	3	4	5			
Client related issues										
Interference with project performance (vested interests)	13,3	8,3	13,3	18,3	18,3	13,3	15,0	2,98	1,375	1
Delay or non-payment for Completed works	1,7	8,3	26,7	15,0	11,7	16,7	20,0	2,87	1,567	2
Insufficient funding	8,3	11,7	31,7	5,0	18,3	10,0	15,0	2,65	1,564	3
Slow decision making	1,7	5,0	28,3	25,0	13,3	13,3	13,3	2,55	1,426	4
Design alterations & change orders	3,3	6,7	41,7	16,7	8,3	10,0	13,3	2,30	1,513	5
Impractical allocation of resources	11,7	6,7	28,3	23,3	18,3	10,0	1,7	2,18	1,112	6
Wrong choice of Consultants & sub-contractors	3,3	15,0	45,0	11,7	11,7	5,0	8,3	2,02	1,377	7
Unrealistic contract duration	6,7	11,7	38,3	25,0	8,3	3,3	6,7	1,96	1,224	8
Contractor related issues										
Inadequate planning	0,0	6,7	23,3	20,0	18,3	13,3	18,3	2,82	1,466	1
Inadequate experience	0,0	6,7	28,3	11,7	23,3	15,0	15,0	2,75	1,455	2
Poor coordination of subcontractors	1,7	6,7	18,3	25,0	21,7	16,7	10,0	2,73	1,283	3
Mistakes during construction stage	0,0	1,7	20,0	36,7	11,7	11,7	18,3	2,71	1,415	4
Inappropriate construction methods	0,0	8,3	26,7	20,0	21,7	15,0	8,3	2,55	1,317	5
Incompetent site management	0,0	1,7	28,3	23,3	23,3	13,3	10,0	2,53	1,318	6
Wrong choice of bankers	11,7	25,0	31,7	16,7	8,3	3,3	3,3	1,89	1,158	7
Labour and equipment related issues										
Unskilled site manpower	0,0	6,7	13,3	28,3	23,3	13,3	15,0	2,88	1,294	1
Labour disputes	0,0	11,7	23,3	20,0	21,7	6,7	16,7	2,70	1,436	2
Improper equipment selection & faulty equipment	5,0	5,0	23,3	26,7	13,3	13,3	13,3	2,63	1,405	3

Table 4.9 (a) continued

Materials related issues										
Late delivery of material	0,0	1,7	11,7	26,7	18,3	28,3	13,3	3,05	1,265	1
Material shortages	0,0	5,0	28,3	15,0	20,0	18,3	13,3	2,72	1,436	2
Material shortages resulting from damages	3,3	5,0	21,7	36,7	16,7	10,0	6,7	2,38	1,178	3
Poor quality materials	5,0	10,0	38,3	18,3	11,7	11,7	5,0	2,14	1,296	4
Consultant related issues										
Late identification of errors & resolution of drawings; specification errors & omissions	10,0	10,0	30,0	25,0	11,7	5,0	8,3	2,21	1,304	1
Poor supervision resulting in rework	3,3	11,7	36,7	21,7	18,3	3,3	5,0	2,04	1,166	2
Poor contract management	3,3	10,0	40,0	25,0	8,3	6,7	6,7	2,02	1,260	3
Late preparation of drawings and other contract documents	6,8	10,2	35,6	25,4	13,6	3,4	5,1	2,00	1,155	4
Inappropriate design	8,3	15,0	43,3	10,0	11,7	3,3	8,3	2,00	1,382	5
Inappropriate coordination of information	3,3	5,0	36,7	33,3	11,7	6,7	3,3	1,98	1,080	6
Inappropriate construction methods	10,0	8,3	36,7	26,7	10,0	8,3	0,0	1,88	0,992	7
Long waiting time for inspection & testing	1,7	8,3	48,3	18,3	13,3	6,7	3,3	1,87	1,150	8
Over inspection	8,3	15,0	45,0	18,3	5,0	5,0	3,3	1,74	1,124	9
Improper contract packaging/ delivery strategy	8,3	11,7	45,0	21,7	10,0	1,7	1,7	1,67	0,930	10
Community related issues										
Community unrest, militancy and communal crises	5,0	16,7	41,7	10,0	10,0	6,7	10,0	2,15	1,474	1
Delay or non-payment of Compensation	6,7	6,7	41,7	18,3	20,0	3,3	3,3	1,94	1,110	2
Lack of community buy-in	5,0	6,7	46,7	18,3	16,7	3,3	3,3	1,85	1,099	3
Contractual relationship related issues										
Lack of adequate communication between the parties	5,0	5,0	35,0	25,0	8,3	13,3	8,3	2,28	1,366	1
Major disputes and negotiations	6,9	10,3	41,4	8,6	19,0	5,2	8,6	2,17	1,389	2
Wrong organizational structure linking to the project	10,2	10,2	42,4	15,3	11,9	5,1	5,1	1,94	1,241	3
External issues										
Interference by political leaders	3,3	6,7	15,0	25,0	13,3	21,7	15,0	2,96	1,373	1
Weather conditions	1,7	3,3	5,0	36,7	33,3	10,0	10,0	2,82	1,054	2
Change in government's leadership & policies	10,0	11,7	33,3	11,7	13,3	8,3	11,7	2,40	1,499	3
Natural disasters (e.g. floods, lightning strikes)	1,7	23,3	40,0	10,0	8,3	6,7	10,0	2,16	1,492	4

Respondents were required to rate the causes of challenges of emerging contractors in funds management. The causes of challenges were divided into eight main categories which are client-related issues, contractor-related issues, material-related issues, consultant-related issues, community-related issues, contractual relationship-related issues and external issues. Under each main factor, there were sub-factors. The factors with the most influence in these categories have MSs > 1.66 ≤ 3.05, which indicates that these factors have between a near minor to moderate / moderate influence on the causes of challenges of emerging contractors in funds management.

The factor that has the most significant influence under client related issues is: interference with project performance (vested interests) (MS=2.98). The probable reason for the first factor stems from clients (officials) who issue out projects but have their own interests of benefiting from the projects they issue. They impose change of scope without following the due processes or pressurise contractors who are on site to appoint subcontractors of their choice as well or to employ strategies that will favour them in their personal capacity instead of benefiting the people for whom the project is being implemented.

The second most significant factor in this category is delay or non-payment for completed works (MS= 2.87). There are many reasons for delayed payments and it could stem from insufficient funding from the clients, late submission of claims by contractors or consultants or delays from clients internal processes. This negatively affects emerging companies in terms of cash flows, and may cause delays in the other phases of the project.

The least significant factor in this category is unrealistic contract duration (MS= 1.96). This implies that the duration of a contract is estimated correctly but if other factors are not taken into consideration, the project is be delivered later than the expected time.

The factor that has the most significant influence under contractor related issues is inadequate planning (MS= 2.82). Poor planning is a result of being disorganised. If planning is not done properly from the inception of the project, delays are inevitable. This challenge of poor planning becomes extreme when the contractor does not have a recovery plan to catch up with lost time as it costs him a lot in the long run.

The second most significant factor in this category is inadequate experience (MS= 2.75). Without adequate experience, avoidable mistakes are easily made. Inadequate experience also decreases the chances of securing bigger projects which could benefit the contractor.

The least significant factor in this category is wrong choice of bankers (MS= 1.89). The banking industry has similar processes and requirements to meet. If these due processes are followed and requirements are met, the contractor does not experience many challenges.

The factor that has the most significant influence under labour and material related issues is unskilled site manpower (MS= 2.88). Lack of skills is one of the industry's biggest obstacles. Skills are required because construction requires specialist skills. When these important skills are lacking, mistakes during implementation are inevitable. Construction industry workers need to be equipped with skills for the industry to be developed, have potential to grow and be employable. This factor is interlinked with planning. When planning is poor, everything else falls behind schedule.

The least significant factor in this category is improper equipment selection and faulty equipment (MS= 2.63). Faulty equipment delays the project as it will need repairs to be done on site and work is temporarily halted. Improper equipment cannot reach the desired outcome due to various functions of different construction plant.

The factor that has the most significant influence under materials related issues is late delivery of materials (MS= 3.05). When material is delivered late, it delays the progress on site and ultimately leads to delay in delivery of the project. Material needs to be ordered timeously in order to be delivered as and when required, this requires proper planning from the contractor's side. Material are be delivered late because they been ordered late or it is due to other issues such as a shortage of suppliers in the local area of the project or due to late payment if credit is not secured with the material supplier.

The least significant factor in this category is poor quality materials (MS= 2.14). Some suppliers produce low quality material and sell it at cheaper prices. Contractors who want bigger profits share purchase this material and use it on projects. This poor material easily breaks and cannot withstand all weather conditions and forces on site. At times it results in collapse of structures due to its poor quality.

The factor that has the most significant influence under consultant related issues is late identification of errors & resolution of drawings; specification errors & omissions (MS= 2.21). When errors are identified late in drawings, it results in delays as drawings have to be changed. This also applies when specifications are omitted or there are errors.

The second most significant factor in this category is poor supervision resulting in rework (MS= 2.04). When construction work is not supervised properly, it results in many mistakes being made especially if the contractor is also not experienced enough in the type of work being undertaken. Without proper skills, it is not possible to differentiate what is right or wrong especially in large complex projects. Without proper supervision, errors cannot be easily picked up. A combination of lack of skills and poor supervision results in rework and at times the project fails.

The least significant factor in this category is improper contract packaging/delivery strategy (MS=1.67). Although this factor is the least influential in all these categories, it does not imply its effect is negligible because of the challenges it poses in funds management of the project. The factors with the most influence in each category agree with the conclusion of studies by Sunjka and Jacob (2013), Mashatole (2014) and Kulemeka, Kululanga and Morton (2015).

The factor that has the most significant influence under community related issues is community unrests, militancy and communal crises (MS= 2.15). Disputes arise from within the community leadership structures or between community members and other stakeholders within the project. These disputes also arise between contractors and local labourers or among all the stakeholders involved in the project. These challenges need to be sorted out as and when they arise.

The least significant factor in this category is lack of community buy-in (MS= 1.85). This usually results if stakeholders are not well informed from the onset or interests are different from the stakeholders.

The factor that has the most significant influence under contractual relationship related issues is lack of adequate communication between the parties (MS= 2.28). This factor is directly linked with all the other factors. Without proper and open communication channels, contractual relationships are likely to suffer and lead to disputes within the project stakeholders.

The least significant factor in this category is wrong organisational structure linking to the project (MS= 1.94). If the organisational structure is wrong, disputes and project delays are inevitable, proper communication channels are not followed and messages are not conveyed to all stakeholders. This leads to challenges in projects.

The factor that has the most significant influence under external issues is interference by political leaders (MS= 2.96). This factor is connected with the first and the sixth factor, politically driven projects are usually not completed in time, nor within budget and to the required quality. Politicians affect the construction programme either positively or negatively depending on where their interests are vested. If they have personal interests, it results in a lot of disputes and incomplete projects but if the interest are for the people, disputes and delays are avoided and they advocate for faster service delivery.

The least significant factor in this category is natural disasters (e.g. floods, lightning strikes), (MS= 2.16). Natural disasters are beyond human control and insurances need to be in place for such things before they happen as they have adverse effects on projects.

4.4.2. (b) General Ranking of causes of challenges of emerging contractors in funds management according to their Mean Scores and Standard Deviation

Table 4.9 (b): General Ranking of factors (causes of challenges) according to their Mean Scores and Standard Deviation

Factor	Valid no.	Mean score	Standard Deviation	Rank
Late Delivery of Material	59	3,05	1,265	1
Interference with project performance (vested interests)	47	2,98	1,375	2
Interference by political leaders	54	2,96	1,373	**3**
Unskilled site manpower	56	2,88	1,294	4
Delay or non-payment for completed works	54	2,87	1,567	5
Weather conditions	57	2,82	1,054	6
Inadequate planning	56	2,82	1,466	7
Inadequate experience	56	2,75	1,455	8
Poor coordination of subcontractors	55	2,73	1,283	9
Material shortages	57	2,72	1,436	10
Mistakes during construction stage	59	2,71	1,415	11
Labour disputes	53	2,70	1,436	12
Insufficient funding	48	2,65	1,564	14
Improper equipment selection & faulty equipment	54	2,63	1,405	15
Inappropriate construction methods	55	2,55	1,317	16
Slow decision making	56	2,55	1,426	17
Incompetent site management	59	2,53	1,318	18
Change in government's leadership & policies	47	2,40	1,499	19

Table 4.9 (b) continued

Material shortages resulting from damages	55	2,38	1,178	20
Design alterations & change orders	54	2,30	1,513	21
Lack of adequate communication between the parties	54	2,28	1,366	22
Late identification of errors & resolution of drawings; specification errors & omissions	48	2,21	1,304	23
Impractical allocation of resources	49	2,18	1,112	24
Major disputes & negotiations	48	2,17	1,389	25
Natural disasters (e.g. floods, lightning strikes)	45	2,16	1,492	26
Community unrest, militancy & communal crises	47	2,15	1,474	27
Poor quality materials	51	2,14	1,296	28
Poor supervision resulting in rework	51	2,04	1,166	29
Poor contract management	52	2,02	1,260	30
Wrong choice of consultants & sub-contractors	49	2,02	1,377	31
Late preparation of drawings and other contract documents	49	2,00	1,155	32
Inappropriate design	46	2,00	1,382	33
Inappropriate coordination of information	55	1,98	1,080	34
Unrealistic contract duration	49	1,96	1,224	35
Delay or non-payment of compensation	52	1,94	1,110	36
Wrong organizational structure linking to the project	47	1,94	1,241	37
Wrong choice of bankers	38	1,89	1,158	38
Inappropriate construction methods	49	1,88	0,992	39
Long waiting time for inspection & testing	54	1,87	1,150	40
Lack of community buy-in	53	1,85	1,099	41
Over inspection	46	1,74	1,124	42
Improper contract packaging/delivery strategy	48	1,67	0,930	43

Table 4.9 (b) indicates the influence of forty three factors on funds management of emerging contractors. Late delivery of materials had the highest influence with (MS = 3.05), which means that material must be delivered in time so as to avoid delays in the project. This improves the performance and minimise delays encountered due to material shortages stemming from late delivery.

Interference with project performance (vested interests) (MS=2.98) had the second highest significant influence. When interests are personal and not for the benefit of the project; disputes, delays and project failures caused by interference are inevitable. Stakeholders must learn to have interests on government projects so that projects are delivered as required.

Interference by political leaders (MS=2.96) has the third highest significant influence. Politicians must not interfere with how construction projects are run by trained consultants unless there are disputes within communities or project finances are being misused. They

must also use the correct channels to raise their concerns and not stop contractors on site from working or impose on them people whom they want to be employed.

Unskilled site manpower (MS=2.88) has the fourth highest significant influence. People must strive to obtain skills so as to put themselves in better positions for employment opportunities.

Delay or non-payment for completed works (MS=2.87) has the fifth highest influence. Delayed payments is the main cause of financial challenges of emerging contractors. Clients must pay on time for complete work so as to assist contractors to finish projects on time.

Weather conditions (MS=2.82) has the sixth highest influence. Precautions and proper planning needs to done in order to cater for unpredictable weather conditions. Weather delays also need to be documented properly and submitted within the required time so as to be able to claim for weather delays and avoid time overrun penalties.

Inadequate planning (MS=2.82) and inadequate experience (MS=2.75) have the seventh and eighth highest significant influence respectively. Planning goes hand-in-hand with experience. When contractors lack the required experience, they are not in a position to plan for unforeseen circumstances.

Poor coordination of subcontractors (MS=2.73) and material shortages (MS=2.72) have the ninth and tenth highest significant influence respectively. When subcontractors are not coordinated properly, it results in delays and budget overrun. Materials must be ordered in time so that all subcontractors have enough to work with and there are no shortages. While working, subcontractors need to be given targets and monitored to ensure that those targets are met.

Although improper contract packaging/ delivery strategy (MS= 1.67) had the least significance in all the factors, it does not mean its impact has to be neglected as it has an effect on the financial management of contractors.

4.4.2 (c) Ranking of factors by their average mean scores on causes of challenges of emerging contractors in funds management

Table 4.9 (c) below presents factor categories on causes of challenges of emerging contractors in funds management based on their average mean scores. From Table 4.10, it is evident that emerging contractors need intervention measures to help to overcome the causes of challenges relative to funds management and the impact they have on project delivery time.

Table 4.9 (c): Ranking of factors by their average mean scores on causes of challenges of emerging contractors in funds management

Factors categories	Mean score	Ranking
Causes of challenges of Emerging contractors in funds management		
Labour and equipment related issues	2.73	1
External issues	2.59	2
Contractor-related issues	2.57	3
Materials-related issues	2.57	4
Client related issues	2.44	5
Contractual relationship related issues	2.12	6
Community related issues	1.98	7
Consultant-related issues	1.94	8

Table 4.9 (c) indicates that all these factor categories ranked from 1 to 8 are related to causes of challenges of emerging contractors in funds management. The highest ranking factor in Table 4.9 (c) with (MS=2.73) falls under the category of labour and equipment related issues and ranks number one. From this finding, it is deduced that emerging contractors need assistance in managing project resources. The second highest ranking factor represents external issues (MS=2.59) that have been discussed in the preceding sections. From this finding it is evident that emerging contractors experience a lot of challenges emerging from external issues such as weather conditions, political influence and changes in government policies and leadership. The third highest ranking factor represents the contractor related issues (MS=2.57). From this finding it is deduced that contractors also contribute to the industry's poor development through poor planning, poor coordination of subcontractors, inadequate experience and incompetent site management. These causes of challenges need to be dealt with in order to manage successful projects and improve the construction industry in South Africa.

4.4.3 Impact of emerging contractors' challenges on project delivery time

Table 4.10: Impact of emerging contractors' challenges on project delivery time -factors

Factor	Unsure	Does not	Response (%) Minor.....Major					Mean Score	Standard Deviation	Rank
			1	2	3	4	5			
Site ground conditions	3,3	3,3	16,7	15,0	26,7	15,0	20,0	3,07	1,386	1
Physical environment considerations	3,3	3,3	20,0	21,7	28,3	13,3	10,0	2,70	1,264	2
Socio-political considerations	6,7	1,7	16,7	30,0	26,7	10,0	8,3	2,60	1,180	3
Site access	3,3	3,3	30,0	16,7	21,7	11,7	13,3	2,59	1,424	4
Management style	0,0	3,4	32,2	16,9	25,4	13,6	8,5	2,47	1,324	5
Motivation of staff	3,3	1,7	23,3	30,0	23,3	13,3	5,0	2,44	1,165	6
Constructability of design	1,7	5,1	35,6	25,4	10,2	16,9	5,1	2,25	1,294	7
Management techniques used for planning and control	5,0	3,3	33,3	25,0	23,3	6,7	3,3	2,15	1,113	8
Economic policy	18,3	8,3	33,3	21,7	3,3	13,3	1,7	2,02	1,210	9
Quality management during construction	3,3	3,3	43,3	30,0	10,0	3,3	6,7	1,93	1,173	10
The client's understanding of the design, procurement, and construction processes	5,0	10,0	53,3	10,0	11,7	3,3	6,7	1,82	1,276	11
Quality management during design	8,3	6,7	48,3	16,7	10,0	8,3	1,7	1,80	1,114	12

Table 4.10 presents the respondents' rating regarding the impact of emerging contractor challenges on project delivery time. It is notable that all factors in the category have MSs > 1.8. ≤ 3.07, which indicates that the factors have between minor to near minor influence and near minor to moderate influence.

The factor that has the most significant impact in this category is the site ground conditions (MS=3.07). The probable reason is the lack of proper investigation in terms of geotechnical studies. Structural stability of the ground needs to be known before any construction work commences because foundations must be founded on ground that is stable. A soil investigation should be conducted to assist in the design of the foundation type with reference to the type of structure that will be constructed and relative to how deep the foundation should be. If site ground conditions are not known, a lot of time could be wasted in requesting for approval on diversions of underground service ducts. The work needed might include excavation, compacting, concreting of the bases, laying of pipes, compaction, and final concreting. All of these might have to be done before the commencement of the project and may lead to delays in project delivery.

The second most significant factor in this category is physical environmental considerations ((MS= 2.70). The client or his appointed consultant should conduct a site investigation prior to awarding a contract. KwaZulu-Natal province has a very steep terrain and this makes it extremely difficult to access most sites. Based on this, some consultants do not bother to conduct environmental investigations and contactors fail to request this report from clients or their representatives in order to understand the site environmental conditions so as to know which sensitive areas should not be tampered with. This corroborates with one of the findings of Sunjka and Jacob, (2013) on causes of delay affecting contractors. The adverse effects of failing to comply with environmental requirements result in site closures or penalties being imposed for tampering with sensitive areas. When penalties are imposed and projects are stopped, contractor's cash flows are negatively affected.

The third most significant factor in this category is socio-political considerations (MS=2.60). Many social issues are addressed and resolved in a political manner. Social consultants need to ensure that all issues are resolved and politicians need to be involved in the decision making process so as to ensure transparency in all processes.

Quality management during construction (MS= 1.93) and the clients understanding of the design, procurement and construction processes (MS= 1.82) are the tenth and eleventh least significant factors in this category and they are interrelated. Client's personnel must also be in a position to understand what it entails during design stage, procurement phase as well as implementation phase. This assists in employing the right people for the right job. Quality needs to be closely monitored during the construction phase so as to ensure that good quality projects are constructed.

The least significant factor in this category is quality management during design (MS=1.80). Although this factor is the least influential in this category, it does not imply that its effect is negligible because of the impact it has on project delivery time.

4.5 Discussion of findings (phase 1 questionnaire)

The findings of the study indicate that the most significant challenges facing emerging contractors are late payments for completed work, which ultimately causes project delays and lack of resources for either large or complex construction work. These findings have

also been attested by (Thwala and Phaladi, 2009) in their exploratory study of problems facing small contractors in the North West province of South Africa. Hove (2016) concurs in his study of eliciting the financial challenges facing emerging contractors in developing countries using the critical incident technique: a case of South African construction industry that emerging contractors face financial challenges due to late payments. These scholars argue that the long periods taken by clients to effect payments for completed work is detrimental because it affects contractors' cash flows and planning in a negative manner. In addition, they recommend that strict rules and regulations must be put in place for clients who fail to pay contractors on time. Lack of resources for either large or complex work is the second highest leading challenge and an obstacle facing contractors. This challenge is discussed by Kamanga and Steyn (2013) in their study of causes of delay in road construction projects in Malawi. These scholars recommend that contractors should consider buying their own equipment from the proceeds of their contracts. This lack of resources will also present an opportunity for investors to set up private plant and equipment hire organisations. Local investors can also invite international investors to invest in plant and equipment hire organisations, since there is a shortage of equipment among contractors.

This study also presented the underlying causes of challenges of emerging contractors in funds management and the leading causes are related to late delivery of material by suppliers; interference with project performance by clients who have vested interests; inadequate planning by contractors; unskilled site manpower; late identification of errors and resolution of drawings, specification errors and omissions; community unrest, militancy and communal crises; lack of adequate communication between the parties and interference by political leaders. (Sunjka and Jacob, 2013); (Vaifaice *et al.,* 2010) and (Aiyetan, 2010) are of the view that late delivery of material can arise from poor planning of the contractor or late ordering of material due to cash flow constraints. When the project cycle is disturbed, delays are encountered and when these delays arise, they have an impact on emerging contractor's project delivery time. To prevent delays in projects, adequate planning needs to be done by contractors. Clients and politicians should interfere only if it is for the benefit of the project and not for causing delays due to vested interests. Contractors should endeavour to employ skilled site manpower to avoid mistakes on site and engage consultants when errors are identified on drawings or specifications so that they can be rectified on time. In addition, these scholars advise that community unrests should be addressed by the relevant stakeholders so that they do not interfere with the progress and concerns need to be addressed as and when they arise.

This, in turn will ensure that communication channels are kept open between the parties at all stages of the project.

The findings of the study also indicate that site ground conditions and physical ground conditions are the leading factors on project delivery time and therefore have a huge impact on the progress of a project. When ground conditions are bad, delays are inevitable because they can be either inaccessible or the physical conditions are not suitable for construction. (Aiyetan et al., 2011) in their study of a systems thinking approach to eliminate delays on building construction projects in South Africa are also of the view that the lack of proper investigations of site ground conditions affect the delivery of projects and this also contributes to many delays. Proper site ground investigations need done prior to the commencement of any construction project so as to avoid delays during the implementation phase of a project.

The challenges of emerging contractors, their causes relative to funds management and the impact they have on project delivery time should be minimised as much as possible to ensure projects are delivered on time, within budget and in the desired quality. This will enable emerging contractors to grow and the industry to be sustainable.

CHAPTER 5: DEVELOPMENT OF THE FLOWCHART

5.1 INTRODUCTION TO CHAPTER 5

Late payments for work done which ultimately causes project delays; inability to get credit from material and plant suppliers, inability to raise and raise and manage cash flows and secure bank loans; and delay or non-payment for completed work are the leading factors of emerging contractors' financial mismanagement. This has been established in the preceding chapter under Tables 4.8 and 4.9(a). When payments are processed late, financial resources are stretched to the maximum and this forces contractors to look for other means of raising money to continue running their businesses. Majority of businesses do not survive this phase and are forced to close down. Finances play a vital role in the implementation of a project but when these needed finances are mismanaged, the impact is felt by all the project stakeholders. Training in financial management and project management is needed so as to develop these skills which are lacking in the majority of contractors. When these skills are acquired, it reduces the perception of many potential contractors who perceive construction as a quick money making industry and introduce a new level of understanding of the construction industry needs and requirements. These skills will also improve their business acumen, the quality of delivery of projects, and improve the overall financial management of contractors. However, when these skills are lacking, coupled with limited finances to run a construction business, project delays, project failures and insolvency are inevitable. Skills development training and more emerging contractor development programmes to assist emerging contractors in their role to run and manage sustainable businesses are still needed to improve the construction industry's outlook. To bridge this gap, the South African construction industry allows contractors to enter the market at the lower end in the general building category, however, this makes the industry extremely competitive and unsustainable as established by Department of Public Works (DPW), Construction Industry Development Board (CIDB) and CETA (2005).

Thwala and Mvubu (2008) state that emerging contractor policies that are intended for Broad Based Black Economic Empowerment (BBBEE) end up being used as opportunities for job creation and it makes this emerging sector to contribute to the overcrowding of emerging markets. From as early as 1995, the Department of Public Works has been actively involved in developing and implementing programmes that promote emerging contractors in the built environment. Participation of Historically Disadvantaged Individuals (HDI's) in the main stream economy has increased and has

been observed through these programmes, championed by the Department of Public Works together with the CIDB (Malongane, 2014). The White Paper states that to create an environment that will allow for reconstruction, growth and development in the construction industry, the core barriers to growth and development in the construction industry are identified as follows: structural problems are interconnected and associated with a demand that is declining as well as the volatile nature of construction demands and inability to access finance and credit prevents and delays developing this emerging sector as well as vocational or management training.

The public sector is the biggest client of the construction industry but their limited capacity to manage its procurement functions increases the challenges which escalate the cost of development for both the industry and the public. The fiscal capacity of the public sector and the limited ability to mobilise private-sector finance and initiatives constrains increased investment in physical infrastructure. Furthermore, without having a statutory authority that co-ordinates and promotes growth and development initiatives in the industry, transformation and reform in the industry is prevented. Therefore, to increase delivery and development combined with a mutually reinforcing effect, the preventative measures that have been stated above are characterised as a crisis that is facing the whole industry (Malongane, 2014).

Spenser (2005) argues that emerging contractors be classified as being those who affect small sized contractors and medium sized contractors respectively. Spencer citing Dlungwana & Rwelamila (2003), state that contractors be distinguished from each other by many factors such as their annual turnover, capacity and capability. Thwala and Phaladi (2008) are also of the view that emerging contractors are faced with competition that is increasing and this forces them to retrench labourers because they do not have projects to do. However, while emerging contractor development policies were intended for black economic empowerment, finances are limited and the cost thereof is high. Although the government has made some efforts to increase access to finance, the targeted programmes have limited success because the people who are targeted are not aware of them or how to benefit from existing promotional programmes. Additional to these challenges, interest rates are high and they threaten the growth of small businesses. The effect of the technical recession in 2017 in South Africa and in previous years has been felt by these contractors; and insufficient external finances prevents emerging business from growing and expanding. As stated in the preceding chapters, Ofori (2002) discovered that while emerging contractors in the whole world face

challenges, those in developing countries have additional problems that are different from their counterparts in the developed world and they range from: the limited resources to train contractors, poor procurement systems and lacking management capacity and resources to equip managers to operate their business efficiently and effectively. The following are among the many programmes that have been developed to assist emerging contractors in their function to grow and manage sustainable businesses and these programmes are expected to bring innovation and development in the construction industry.

5.2 CONTRACTOR DEVELOPMENT PROGRAMMES (CDP's)

The South African Government developed several support programmes that are geared as economic empowerment vehicles for previously disadvantaged individuals. For this reason, emerging contractors have received a lot of attention and investment which range from projects that are initiated by the state to support legislation, several funding instructions and lastly government incentive through the Department of Trade and Industry (Mofokeng, 2012).

Technical skills and relevant educational programmes is what is mostly needed to assist emerging contractors in their struggle to be fully fledged. Government and private sector have developed over the years many training and development programmes that are geared to assist emerging contractors. For the purposes of this study, the following programmes will be examined: National Contractor Development Programme (NCDP); National Department of Public Works Contractor Incubator Programme (NDPW CIP); Department of Public Works KwaZulu-Natal Masakhe Emerging Contractor Development Programme; The SEDA Construction Incubator (SCI) Programme and Master Builders KwaZulu-Natal Emerging Contractor Programme

5.2.1 National Contractor Development Programme (NCDP)

The National Contractor Development Programme (NCDP) is a programme that is led by the Minister of Public Works and the Provincial MECs, to meet the demand that is rising nationally. The programme commits to increase growth in the construction industry. The programme aims to enhance capacity and equity ownership across all the construction categories and grades, to improve skills and performance in delivering capital projects and maintenance work in the public sector. The programme also recognises that there

are various factors that are needed to develop contractors to become competent experts in their field, to grow and improve their performance and these development initiatives should therefore cover a broad spectrum of activities, including:

Construction Work Force Development, including developing artisans and supervisors through the construction workforce. This includes development of CIDB Grade 1 and 2 contractors. Other forms of development that are used include learnerships of many forms with supporting structures (CIDB, 2009).

Contractor Development focuses on developing contractors and consists of several subcomponents that start at the emerging contractor stage and progress to the stage which focuses on developing construction businesses while focusing on improving the performance of contractors (CIDB, 2009).

Emerging Contractor Development, focuses on CIDB Grade 2 and 3 contractors and the development methods used include learnerships within Emerging Contractor Development Programmes (ECDPs), incorporating mentorship in which the emerging contractor learns the business side of contracting including tendering for work, pricing, human resource management, marketing, financial management, and contract administration. Within the ECDPs, the budget is ring fenced and allocated to ensure that work is sustainable for the learner contractors (CIDB, 2009).

Enterprise Development, whereby the company starts growing; it develops the market for its services, expands the workforce, plant and equipment and the areas of operation. It accumulates capital for future growth as well as develop business and technical systems. This stage normally targets Grade 3 to 6 contractors who show potential to develop. Key methods that are used in this stage include a combination of joint ventures in direct contracts. In this development stage, contractors may be awarded contracts through competitive bidding by using appropriate procurement strategies that ensure work supply is sustainable to the contractors within the competitive bidding environment (CIDB, 2009).

Performance Improvement, when the established enterprise introduces best practice systems for health and safety, quality management and environmental management, performance is improved. This stage targets Grade 4 to 7 contractors who show potential to develop and be sustainable (CIDB, 2009).

5.2.2 National Department of Public Works Contractor Incubator Programme (NDPW CIP)

The National Department of Public Works Contractor Incubator Programme (NDPW CIP) is a three year programme that focuses on developing contractors in CIDB Grades 3 to 7. This programme aims to create an environment that will allow all qualifying and existing contracting businesses to develop. It also focuses on giving side support through a structured mentorship-centred enterprise development programmes (CIDB, 2009). According to CIDB Status Quo Report (2009), the target market for this programme includes blacks, women, youth and the disabled. Contractors are chosen on the basis of their experience in construction activities, registration as a business enterprise, access to skilled staff, banking and credit record, type and size of a contractor, level of a contractor's development, potential to satisfy contract-specific key performance areas, and their track record.

The CIP management team and Construction Education and Training Association (CETA) facilitates training arrangements and other programmes such as the Black Suppliers Development Programme from the Department of Trade and Industry, but it does not award any NQF qualifications such as the National Certificate in Construction (NQF level 4 or 5). However, it does assist contractors to arrange access to back-to-back agreements and credit guarantees with the Independent Development Corporation (IDC) and the banks for bridging finance. The programme is designed with structure that mentor contractors with onsite activities and also to give them support. Leadership, project management, stakeholder management, resource management, cost and quality management, handling sub-contractors and suppliers and managing the environmental and statutory requirements such as the Occupational Health and Safety are some of the support areas that are provided by the programme. It trains and makes arrangements with Standard Bank to provide financial assistance to the CIP contractors on a trial basis. The training also includes training on the CIP procedures, DPW Procurement procedures, JBCC, SACEM Assessment, Small Business Management, and the OHS Act. The department also arranges for networking and information sessions for the CIP contractors through provincial meetings and using the CIP database (CIDB, 2009).

5.2.3 Department of Public Works KwaZulu-Natal Masakhe Emerging Contractor Development Programme (Masakhe ECDP)

The Masakhe Emerging Contractor Development Programme (Masakhe ECDP) is operated in KwaZulu-Natal under the guidance of the KwaZulu-Natal Department of Public Works (KZN DPW). It focuses on developing emerging contractors and aims at creating an environment that is conducive for growth and facilitates access to: Markets (DPW KZN contracts); Financial support; Training and mentoring; Skills transfer; Creating an emerging contractor development mechanism; Performing basic business management and technical training; Implementing targeted procurement interventions; Ongoing technical support through a mentorship plan; Linking contractors with financial institutions or funding agencies for appropriate financing products and Ongoing monitoring and evaluation of participating contractors.

The Programme is phased, it mentors contractors through various grades of work, and it is designed and structured to give an end-to-end assistance and support framework including training and mentorship, financial and technical support to the contractors on the Programme as opposed to ad-hoc preferential procurement interventions. The Masakhe ECDP targets projects falling within the CIDB scope of value of R1m to R 6.5m (or CIDB Grades 2 to 5), (CIDB, 2009). Projects with the CIDB grade 3 to 5 are targeted and set aside for the Masakhe ECDP'S. Budgets are identified and set aside for the programme and the procurement method used is based on limited bidding processes, it includes the Historically Disadvantaged Individual procurement scoring which consists of Women: 40%, Youth: 20%, Black: 35% and the Physically Disabled: 5%

Contractors are selected for entry into the programme based on elementary training and profiling. The requirements to be included into the programme entails having BBBEE certificate and a technical profile, the contractor's performance and CIDB grading progress. The programme equips contractors with business and technical training as well as mentorship for onsite technical support and business management. For contractors to be able to continue within the programme, there must be growth in the CIDB grades, projects must be completed successfully and in high quality and they must acquire business skills, technical skills and perform on their projects. The growth in programme stages requires contractors to meet a required level of competency as prescribed for each ECDP stage; to successfully complete a number of projects or a required total project value; and to have acquired a Masakhe ECDP performance management report

confirming above requirements have been met. The maximum number of contracts and maximum values within each stage that a single contractor must complete before advancing to the next stage or exiting the Programme is given on the following table:

TABLE 5.1: Status Quo Report: SA Contractor Development Programmes

Stage	Maximum Contract Value	Maximum Number Of Any Projects	Maximum Accumulated Contract Values In The Stages
1	R 200 000.00	3	R 600 000.00
2	R 650 000.00	3	R 1 000 000.00
3	R 2 00 000.00	2	R 3 000 000.00
4	R 4 000 000.00	2	R 5 000 000.00
5	R 6 500 000.00	1	R 7 000 000.00

SOURCE: CIDB Status Quo Report, 2009

5.2.4 The SEDA Construction Incubator (SCI) Programme

The SEDA Construction Incubator was established in 2005 as a government funded contractor development incubator under the banner of ring fenced incubator programme called SEDA Technology Programme. The aim of the programme is to develop emerging contractors by combining technical and business administration skills allied with the introduction of technology in order to enhance the efficiency and efficient management of their businesses. The programme was launched officially in March 2007 and the first intake included seven (7) incubates and at the end of 2008/2009 financial year and later, sixty three (63) construction companies were supported by the programme (CIDB, 2011). The vision of the programme is be to a leader in developing competitive emerging construction companies by providing and renewing support interventions. This vision is achieved by strengthening the capacity of emerging construction contractors through structured infusion of business, technical and technology interventions that lead to sustainable businesses, significant job creation and a positive contribution to the economy of South African. This programme is conducted over a three year cycle and gives support to the participants that are selected so as to ensure that the contractors have advanced by at least one grade and financial level above their entry point and also ensure that they are able to operate with little or no support in the open market. The programme was developed around specific processes that are found in any construction business and they include: Tender Stage which helps contractor's price tenders correctly with clear profit margins and factor in all expenses; Pre-Construction: that assists contractors in preparing for occupation of the site; Construction Management: to ensure proper and professional management and administration of projects and Site Supervision: to assist the Foreman while interacting with consultants and all role players

in the construction process, and to also allow the contractor's management team a certain amount of independence and autonomy.

The SCI aims to provide contractors with the required support to become successful and sustainable businesses that are able to compete in the market. It also seeks to provide business technology incubation services for emerging contractors and provide technical training, coaching and mentoring so that participating contractors are able to successfully complete their projects. Contractors are assessed in the skills they possess to complete the projects that they have won on their own. The programme's aim is to bring a high level of professionalism and formality in the industry through attendance of formal courses. SCI contractors are trained in a range of skills in the fields of General Building, Electrical and Civil Engineering Construction, up to NQF Levels 4 and 5. According to (CIDB, 2011), the SCI also provides to contractors on the incubator programme administrative and technical services in nature.

Administrative services:

Infrastructure which includes a boardroom for clients' use; training room and resource centre; telephone, faxing and printing facilities; and optional office space at subsidised rental. Compliance under supervision of a Business Development Officer who provides a communication path for the contractors to the centre management; maintains contractors' details on record; assists the contractors with their VAT & UIF records, financial statements, CIDB and other relevant registrations; and helps them develop and refine their current Business Plan.

Technical services:

Tender phase support which includes assisting contractors with the identifying tender opportunities; skills and capacity audit or assessment of their organisations; assisting them with pricing and estimating; assisting in compiling and submitting tender documents; facilitating performance guarantees and helping in statutory registration compliance, including the CIDB; South Africa Revenue Service (SARS) for VAT, PAYE and UIF; and Department of Labour compliance. Construction phase support which takes the form of assistance in programming and resource scheduling; cash flow forecasting; working capital financing finalisation; supplier credit finalisation; health, safety and environmental compliance; labour and staff recruitment and legal compliance; site administration system development including budget and cost reporting; quality control mechanisms; work measurements, payment certification and claims for variations and extras.

This programme was accredited by the CETA for the following courses relating to General Building and Civil Engineering in 2009:
NQF 2 – SAQA 49410 – National Certificate: Construction.
NQF 2 – SAQA 20813 – National Certificate: Construction Contracting.
The SCI provides training and accreditation to incubates in the above courses.

The SCI targets existing contractors with a CIDB grading of 3 to 5 who have a legal registered business entity, Business Plan and meet certain entry requirements. While it allows for Grades 1 and 2 contractors for special circumstances, the current profile of contractors supported by the SCI are predominantly Grades 3 to 6. All the contractors that are part of the programme have to be registered with the CIDB and interested contractors are invited to submit application forms with the required key documents, including a copy of Income Tax Registration, Tax Clearance Certificate, copy of Company Registration Documents, copy of Identity Document of all shareholders, a Business Plan that clearly demonstrates the company's future plans, a Curriculum Vitae of all the owners and senior management, latest signed annual financial statements, latest management accounts, letter of motivation as to why the applicant wishes to join the SEDA Construction Incubator Programme and how this will benefit the applicant's company. Once accepted into the programme, the contractor's performance is evaluated closely and linked with what the contractors are taught in class and how they perform or implement these skills on the site. The contractors' performance is not only measured by the upward movement on the CIDB grades, but also by the financial standing of the contractor based on the projects successfully completed. The programme offers mentorship, training and skills development as well as access to finance and credit facilities. The SCI does not guarantee any funding to the contractors, instead, it encourages the contractors to go out and interact with the various financial institutions and be able to present their cases to source funds and credit facilities as per their needs (CIDB 2011).

5.2.5 Master Builders KwaZulu-Natal Emerging Contractor Programme

The Master Builders KwaZulu-Natal Emerging Contractor Programme is a programme that was established in order to help develop skills and assist small and informal business to have insight on how to operate within the building industry so as to run sustainable businesses. The participant in the programme have access to training, business facilities and specialists who mentor and guide them through the various challenges in the built

environment. The objective of the programme is to assist the contractors and support them in becoming legally compliant and to guide them to achieve their business goals and objectives. Participation in the programme is open to Members of the Association from previously disadvantaged communities whose annual turnover does not exceed R4 Million. Master Builder KwaZulu-Natal reserves the right to allow participation in the programme by non-members of the Association providing they meet the application criteria (MBA KZN, 2013).

Application Criteria

The application criteria requires the contractor to be registered as CIDB grade 3 and upwards. In exceptional circumstances other lower grades may be considered. The applicant must be willing to maintain a high standard of ethics at all times as well as to be willing to ensure that all work is performed to the best of their ability. The application criteria also requires the applicant to provide references and motivate why they should be in the programme (MBA KZN, 2013).

Duration

MBA KZN (2013) states that the successful applicants cannot participate in the programme for a period exceeding two years. The first three months serve as a probation period to ensure that the contractor complies legally in all areas. The Association has the right to expel participants from the programme who show no commitment to the industry best practices, who are not legally compliant or violate the code of conduct of the Association (MBA KZN, 2013).

Cost to Applicant

There are no major costs involved except that the successful applicants is required to purchase a Small Builders Manual as a toolkit for the programme (MBA KZN, 2013).

Value Proposition

According to MBA KZN (2013), the programme facilitates access to certain areas that grow the business and help in improving the performance of Emerging Contractors in terms of quality, develop skills, comply with health and safety regulations, improve employment practices, business management and technical skills. The following are additional areas that the participant has access to and they include: Mentorship programme, Professional support, Training opportunities, Health and Safety advice, Building services advice and General enterprise or Industry advice.

Mentorship Programme

The applicants that are successful are assigned a mentor and are required to be prepared to engage in a positive mentor/mentee relationship. The mentor's role is to guide and provide support as well to assist the mentee in their professional development (MBA KZN, 2013).

Professional Support

Different specialist are employed by the Association and the successful applicants have direct access to them for professional advice and guidance (MBA KZN, 2013).

Health and Safety

The Association has a department that is dedicated to Health & Safety matters, this department gives advice and assistance on matters relating to health and safety including legal compliance in line with the Occupational Health and Safety Act (MBA KZN, 2013).

Building Services

The Association has a Building Services Manager who provides quality advice regarding the settlement of disputes, contractual, regulatory and building related legal issues. The Building Services Department is also able to give practical advice on the construction methodology to be employed on which project due to the amount of experience it has gathered over the years from operating in the construction industry (MBA KZN, 2013).

Adopt - an - Emerging Contractor

Successful emerging contractors who have completed the relevant training and mentorship components will be linked to companies in the industry for a six month period. This is in order to assist the emerging contractor to develop further business acumen. This aspect of the programme is subject to companies in the industry taking on emerging contractors (MBA KZN, 2013).

General Enterprise and Industry/Advice

The programme participants also have access to advice in Finances, Marketing, Labour relations and are offered Networking opportunities (MBA KZN, 2013).

Business Advisory Support Desk

The participants in the programme have access to a business advisory desk which is there to facilitate assistance with business support service, advice on different business entities and the requirements, advice on legal requirements for business start-up, completing relevant forms/documents, telephonic advice, training on different aspects of running a business, finance and sustainability, advice on requirements in the building industry, writing up of business proposals, tender process and documents (MBA KZN, 2013).

Facilities

There are facilities at all the Master Builders offices for the Emerging Contractors that are on the programme. These facilities include access to computers with Microsoft Office and internet access that is available to be used by the successful applicants. Emerging Contractor also have access to these facilities when they make appointments and they are available (MBA KZN, 2013).

Training

Emerging contractor's training needs are continuously assessed and they are offered training in order to demonstrate an understanding of a business plan and adapt it to a selected business idea; to set up and manage construction businesses; to understand and apply business finances; to market and apply business concepts; to comply with legal requirements for a construction contract; to obtain computer skills; to tender for projects, organise and attach construction contract documents, to apply Health & Safety requirements at work, to apply and uphold quality principles on construction site and lastly to manage construction resources efficiently and effectively (MBA KZN, 2013).

5.3 EFFECTIVENESS AND ASSESSMENT OF CONTRACTOR DEVELOPMENT PROGRAMMES (CDP's)

Contractor development programmes are essential for the development and growth of contractors. They help in bridging the gap of shortage of skills, inconsistent work flow and access to finance by emerging contractors. These different programmes also have challenges that they face and opportunities they present to emerging contractors. CDPs create an environment that will enable the chosen contractors to develop; they develop their capability to contract in line with service delivery where there are shortages; they develop contracting supervisory skills and/or artisan skills; they assist contractors to

obtain higher CIDB grades and obtain business maturity levels; they support equity in ownership; management; creating jobs; developing skills; and developing emerging contractors (CIDB, 2011).

The majority of these programmes are aligned with providing access to work opportunities for successful contractors in the database of each CDP, as well as provide mentorship, training and support to the contractors; empowering specific target groups such as black, women and youth owned businesses as well as creating jobs in some cases. Many of these CDPs target from grade 1 to 5 and in some cases up to grade 7. This is the most competitive and unsustainable sector in the South African construction industry. For these programmes to run effectively in the construction industry, sufficient budget and projects must be set aside and allocated so as to create business opportunities for emerging contractors that have the potential to develop into higher grade established contractors. CDPs must not become job-creation initiatives with short term impact and not lead to long-term sustainable contracting enterprises, (CIDB, 2009). The following table presents the programmes and the grades they target:

TABLE 5.2: Programmes and target grades

PRORAMME	**TARGET GRADES**
National Contractor Development Programme (NCDP)	1 to 3
National Department of Public Works Contractor Incubator Programme (NDPW CIP)	3 to 7
Department of Public Works KwaZulu-Natal Masakhe Emerging Contractor Development Programme (DPW KZN Masakhe ECDP)	2 to 5
SEDA Construction Incubator Programme (SCI)	3 to 5
Master Builders KwaZulu-Natal Emerging Contractor Programme	3 and upwards

According to the (CIDB, 2009), the main objective of a CDP must be to create sustainable work opportunities for the development of an emerging contractor and not simply to create work opportunities for new entrants. The objective of a CDP must be measured in terms of an increase in the level of skills, competencies and experience attained by a contractor and to enhance the emerging contractor's path towards sustainability. This development must be measured in terms of attaining accredited NQF Level qualifications in construction management; industry accepted performance standards; and Increased financial capability (such as an increase in the contractor's CIDB Grade and financial standing). Furthermore, majority of CDPs run over a three year cycle and those selected contractors benefit during the period that they are within the programme. However, the reality is that, not all the selected participants within the programme obtain contracts; the lack of projects for participants within the CDP has in some cases almost brought the CDP to a standstill. When enough work opportunities for contractors within these

development programmes is not provided, the objective is not realised and this has severe consequences because many contractors see CDPs as work opportunities and not development opportunities. This often creates a “dependency syndrome” on the programme and contractors end up not being well equipped to compete for projects once they have exited the programme. When the expectation for work opportunities is not realised, the dependency syndrome on the programme undermines the sustainability of contractors. Contractor Development Programmes are oftentimes unable to provide work opportunities to the participants due to lack of alignment within the Department’s budgets and the needs of the CDP which may include identifying projects inappropriately in the planning cycle, lacking to adhere to infrastructure delivery or maintenance plans and procurement delays to mention just a few. With the CDPs that have been examined, there seems to be no clear alignment between the CDPs and the departments operations. This results in departments not being committed to the targets of the contractor development and insufficient budgets for contractor development. “Where the target project budgets lie external to a single institution (such as the ECDC and SEDA), a key performance criteria of the CDP should be the sourcing of projects for the CDP, i.e. the responsibility for sourcing of projects is clearly defined, and the institutional capacity has to be structured accordingly” (CIDB, 2009).

The CIDB also states that different models are required for different development needs, for instance, work force development in Grades 1 to 2, emerging contractor development in Grades 2 to 3, enterprise development in Grades 3 to 6, and performance improvement in Grades 4 to 7. The various components of the Contractor Development Model include screening and evaluating contractors that participate or enter the programmes; sharing the risk with the contractor; providing theoretical and practical training and mentorship for the contractor; demanding side support such as access to work opportunities; supplying side support such as access to finance; continuously evaluating contractors performance against the industry standards. Contractors must graduate when certain performance standards are achieved; evaluating methods and processes on an ongoing basis; when the contractor exits from programme, support must be reduced. Following the above steps in their order will provide appropriate mechanisms and interventions at different contractor Grades, CDPs need to take notice of the requirements for technical skills and experience of contractors at various Grades, as well as the business and process maturity of the organisation (CIDB, 2009).

5.4 PROPOSED PROGRAMME TO IMPROVE EMERGING CONTRACTOR FINANCIAL MANAGEMENT PRACTICES AND SKILLS DEVELOPMENT

This programme is developed with the aim of bridging the gap in the shortage of skills within the South African construction industry coupled with improved financial management practices of emerging contractors. This programme must run for a period of five years and target contractors registered CIDB grade 1 to 5 in the general building and civil engineering categories. This programme will create an environment that will allow qualifying emerging contractors to develop skills and improve their overall financial management practices according to their different grades and needs. It will also provide support to existing contractors with financial management mentorship. The target market includes historically disadvantaged individuals who are Black, Coloured and Indian women, youth and those with disabilities. Contractors will be chosen on the basis of their CIDB grades, specific needs analysis that are in line with the programme, willingness to be trained in various required construction skills and participation in a financial management mentorship programme and potential to meet the programme targets.

The programme will issue CETA accredited certificates on completion of skills training courses that contractors will participate in. These will include NQF level 1 to NQF level 6 certificates. A range of skills training courses offered will include project and construction management, business development and management and financial management practices in construction. The programme will also offer financial management mentorship to businesses that grow from one CIDB grade to another while under this programmes. It will also provide on-site support to participants that pass and progress to the next phase and attain new skills through the courses that are offered. Mentorship will be provided to all participants while still under the programme in finance and all construction related activities. Participants will also be encouraged to network and attend business seminars organised by government and private sector stakeholders. The programme is developed to assist all emerging contractors to run successful and sustainable businesses and also to minimise mismanagement of funds by emerging contractors. This programme has led to the development of the flowchart that is meant to mitigate emerging contractor challenges in funds management. This flowchart aims to assist all construction industry stakeholders, especially emerging contractors in improving financial management practices and developing the required and necessary skills that will help to sustain their businesses and assist the industry stakeholders by producing high quality projects that are within budget and on scheduled time.

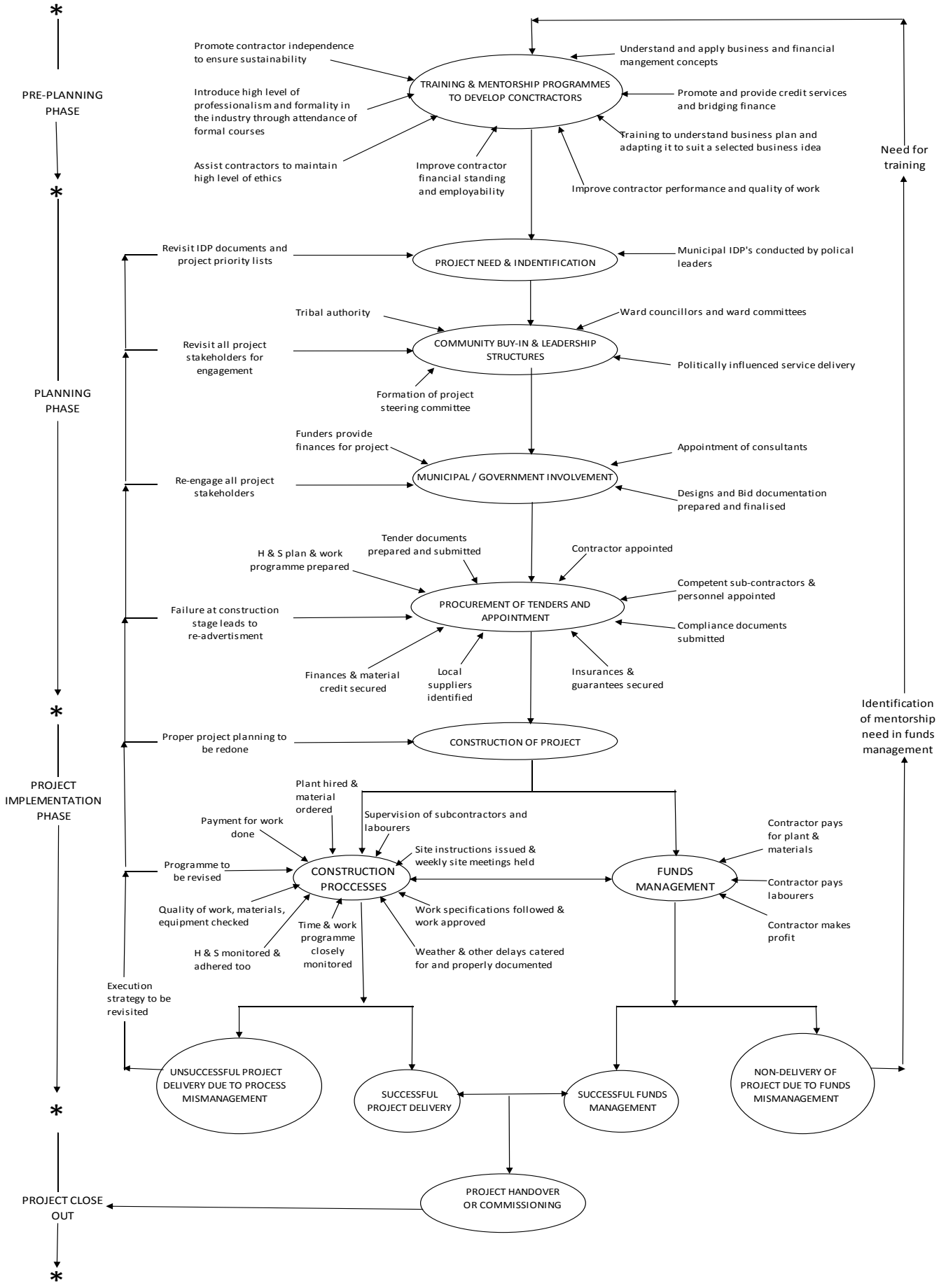

Figure 5.1: Proposed Flowchart to mitigate emerging contractor challenges in funds management

5.5 COMPONENTS OF THE FLOWCHART

The previous chapters presented challenges, causes and the impact of financial mismanagement by emerging contractors and findings thereof; the reason for this section is to discuss in detail the components of the proposed flowchart to mitigate emerging contractor challenges in funds management based on the validation questionnaire that has been developed with regards to the flowchart. It is recommended that the South African construction industry adopts the flowchart and uses it to assist emerging contactors in funds management as well as to assist them to acquire the much needed skills that seem to be lacking so as to ensure projects are completed within budget, in the required quality and be delivered on time. In order to achieve the purpose of developing the flowchart to mitigate emerging contractor challenges in funds management, the flowchart begins with a description of the phases involved in a project lifecycle. It is based on the fact that emerging contractors need training and mentorship programmes to help them to become fully fledged sustainable contractors and to be able to manage their finances efficiently and effectively. The process begins from the pre-planning phase which consists of the training and mentorship programmes aimed at developing emerging contractors. The flowchart consists of four main phases and there are interventions at each phase. They are explained as follows:

PRE-PLANNING PHASE

This phase entails Training and Mentorship Programmes to develop contractors:
Contractors need to be trained to be independent and sustainable. They need mentors to assist them in maintaining a high level of professionalism and formality in the industry and be encouraged to attend formal courses. They require assistance in maintaining high level of ethics; assistance in improving performance and producing quality of work to enable them to improve their financial standing and to be employable. Contractors need to be trained to apply business and financial management concepts as well as to understand business plans and adapt their ideas to suit a selected business idea. They need to be guided in institutions that promote and provide credit services and bridging finances before they decide to tender on any project.

PLANNING PHASE

The planning phase is the role of all industry stakeholders and it begins with the client identifying the need for the project in line with the IDP's conducted by political leaders in various communities. These projects need to be endorsed by community leadership

structures including the tribal authority, ward councillors and ward committees, project steering committees. Clients need ensure that all leadership structures buy into the idea before government provides funds to do the project. The client then need to procure or appoint competent and committed consultants. Consultant will then conduct all prefeasibility studies relevant to project; design and prepare all tender documentation and the clients need to check and approve all designs and tender documentation. The process of procuring tenders and appointing contractors will commence with the tender advertisement and briefing of contractors. Contractors will then prepare tender documents and submit for evaluation. Tender documents are evaluated by consultants and reports prepared. Client's adjudication committee checks consultant's report and recommends the appointment of the contractor by the client. Contractor secures bridging finance and materials credit. Contractor identifies local suppliers and arranges for material purchase and plant hire. Contractor prepares compliance documents including insurances, guarantees, health and safety file, work programme with projected cashflows. The project is then handed over to contractor, sod turning conducted and contractor introduced to community and leadership structures. Contractor identifies and appoints competent subcontractors and personnel with the approval of the consultant and project steering committee.

PROJECT IMPLEMENTATION PHASE

During the construction of project, the contractor ensures that construction processes and followed and funds are managed properly. The contractor then orders material and hires plant. Every week, the contractor conducts the Health and safety induction and minutes are taken and filed. Every morning, material and plant is checked for quality by the contractor and with the consultant upon delivery and prior to work commencement. Contractor monitors subcontractors and labourers. The consultant conducts inspection, issues site instruction where necessary and conducts site meetings (weekly/ fortnightly/ monthly) depending on project need and complexity. Consultant checks if specifications are followed and approves completed work after necessary tests conducted and passed by the contractors work. Contractor and consultant measure completed work and prepare claim for contractor. The Client pays for completed work, by consultants and contractor. Upon receiving payment, the Contractor pays suppliers (material and plant), subcontractors and working staff. Consultant closely monitors work programme submitted by the contractor including revisions where applicable as well as the adherence of the health and safety on site. Contractor records delays due to weather or other causes and submits within required time. Contractor conducts weekly audits on project progress and

finances. Project successfully completed within budget, quality and time and maintained and required certificates are issued by all parties concerned. Contractor makes profit.

PROJECT CLOSE OUT

Prior to hand over but closer to the end of defects liability period, consultant and contractor checks project for: Electrical installation; Mechanical (plumbing) installation; Functionality of windows and doors; Drains / spouts for blockages, and Roofs for leaks. If everything is working perfectly, final certificates are released by all parties concerned. The defects period ends and the project is handed back to the client, the client hands it over to the intended beneficiaries. If there is any outstanding work, the contractor is instructed to rectify the defects and the closing out process is redone.

5.6 VALIDATION OF THE FLOWCHART

A survey was conducted amongst stakeholders in the construction industry in order to validate the flowchart presented (Figure 5.1). A total of twenty five stakeholders representing various sectors relative to the building construction industry were surveyed using the validation questionnaire. These stakeholders include clients, contractors, consultants, and NHBRC officials. Frequencies, Mean Score, Standard deviation, Cronbach's alpha and factor analysis were employed in the analysis of the data.

5.6.1 Demographic data

This section describes the demographics of the respondents surveyed in this research. It reveals their gender, age, highest qualification and their position in the organisation they work for and their actual experience in the construction industry.

5.6.1.1 Region

Figure 5.2 indicates the province distribution of the respondents. The majority of respondents belong to the southern region and constitute (40%) of the total sample.

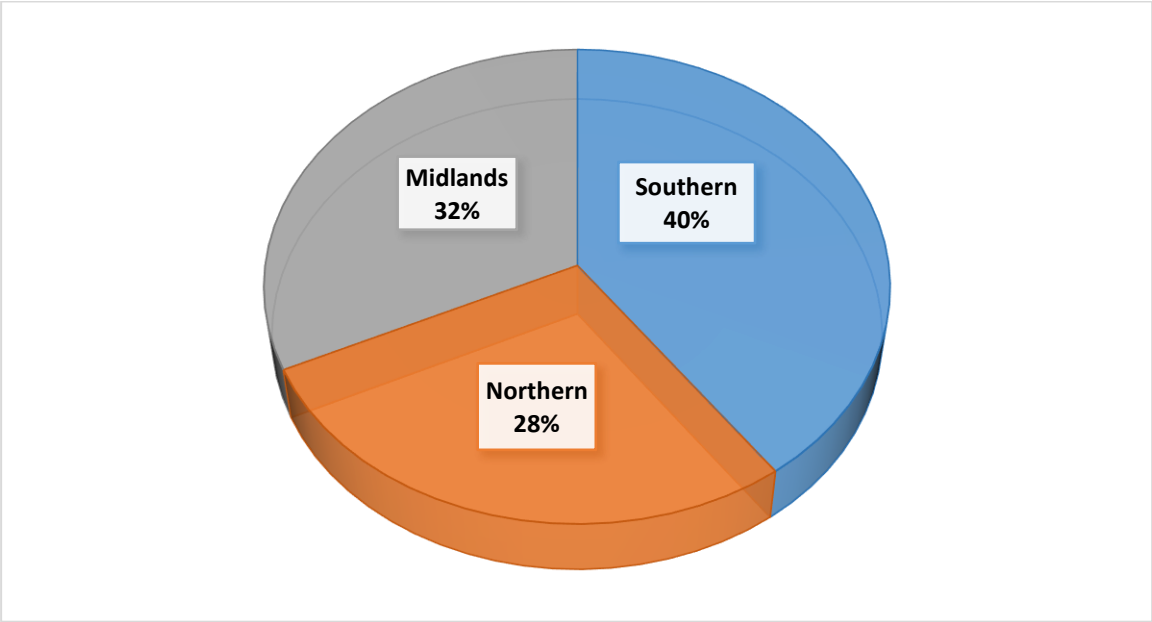

Figure 5.2: Region distribution of respondents in KwaZulu-Natal

5.6.1.2 Gender

Figure 5.3 indicates that male gender is dominant in the construction industry in KwaZulu-Natal with 60% representation.

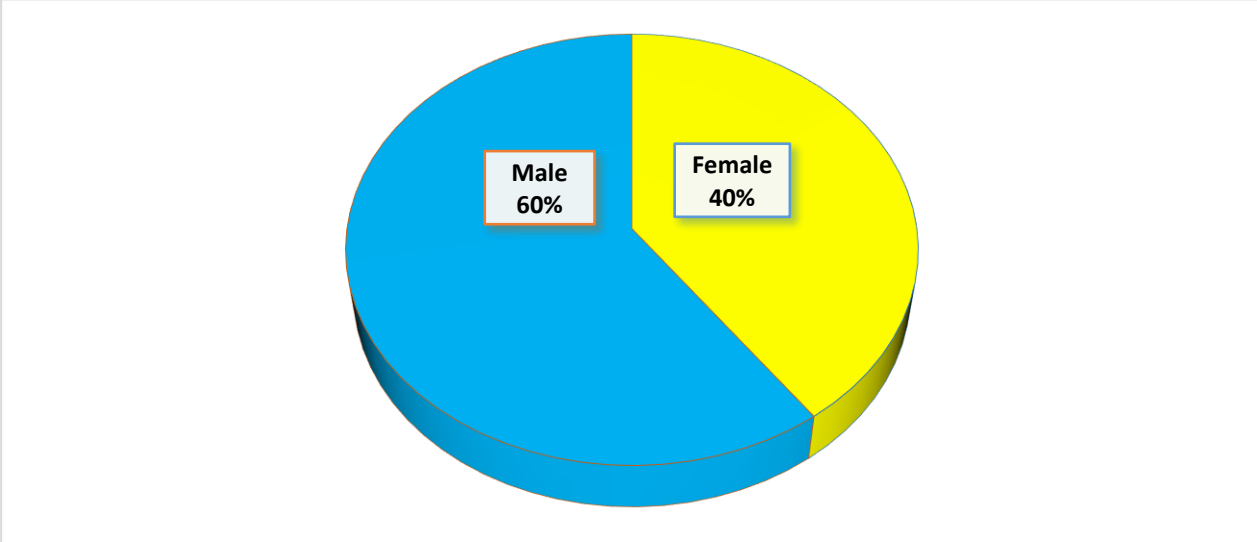

Figure 5.3: Gender distribution of respondents

5.6.1.3 Respondents' age

Figure 5.4 indicates the frequency of respondents' age. Respondents that are over the age of thirty one predominate (56%) in the sample investigated. Respondents between the age of twenty-six and thirty constitute 28% while those between the ages forty-one to fifty constitute 12% and those under twenty five years constitute (4%). It is concluded that

respondents that make up the survey sample are mature, have a high probability of being responsible, and are sufficiently experienced in the industry.

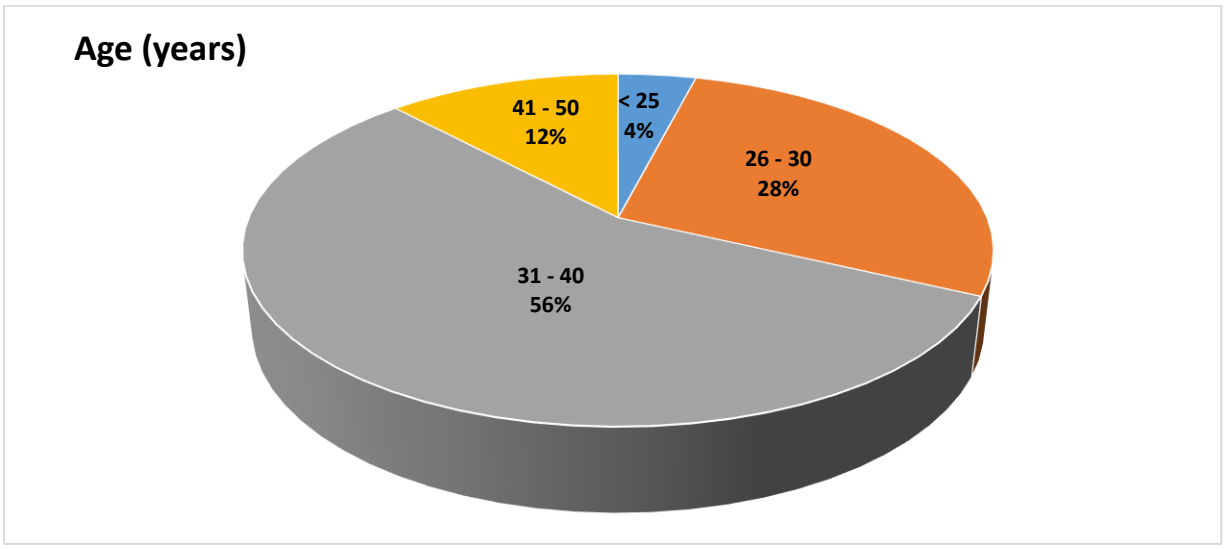

Figure 5.4: Respondents age

5.6.1.5 Respondents highest formal qualification

Figure 5.5 indicates the highest academic qualification of the respondents. Most (48%) of the respondents have diplomas, and they predominate in the sample. Following closely are respondents with bachelor's degree, totalling 32%. Respondents with the B. Tech qualification represent (12%) and those with honours degree represent (8%). This analysis reveals that well qualified personnel are employed in the industry therefore performance is expected to be optimal. It also indicates that their perceptions are relied on.

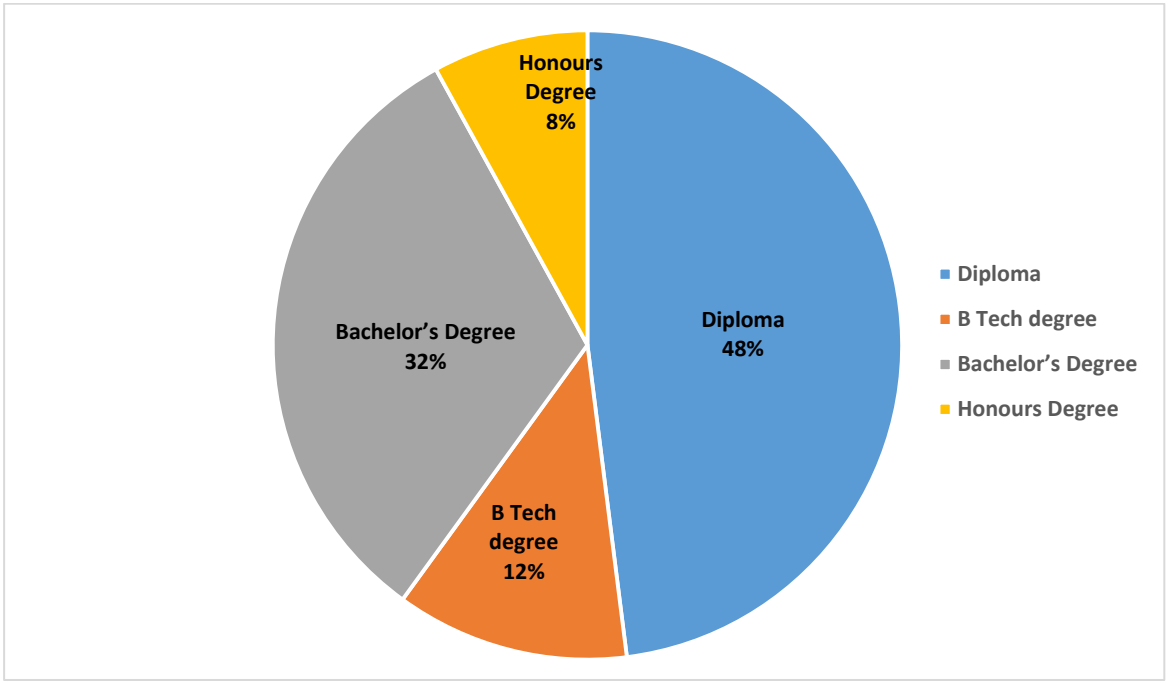

Figure 5.5: Distribution of respondent's qualifications

5.6.1.6 Status of respondents in their organisation

Figure 5.6 indicates that site agents / clerks of works make up (36%) and are predominant among respondents. The following are other key role players in the industry: directors/ managing members / principals, making (24%); next is other professionals such as project managers, quantity surveyors, technicians (20%); followed by senior executives / manager making up (16%). The lowest response is relative to supervisors / foreman making up only (4%). Based upon the above analysis 40% constitutes business owners or senior staff, which is an indication that the data obtained from these workers is reliable.

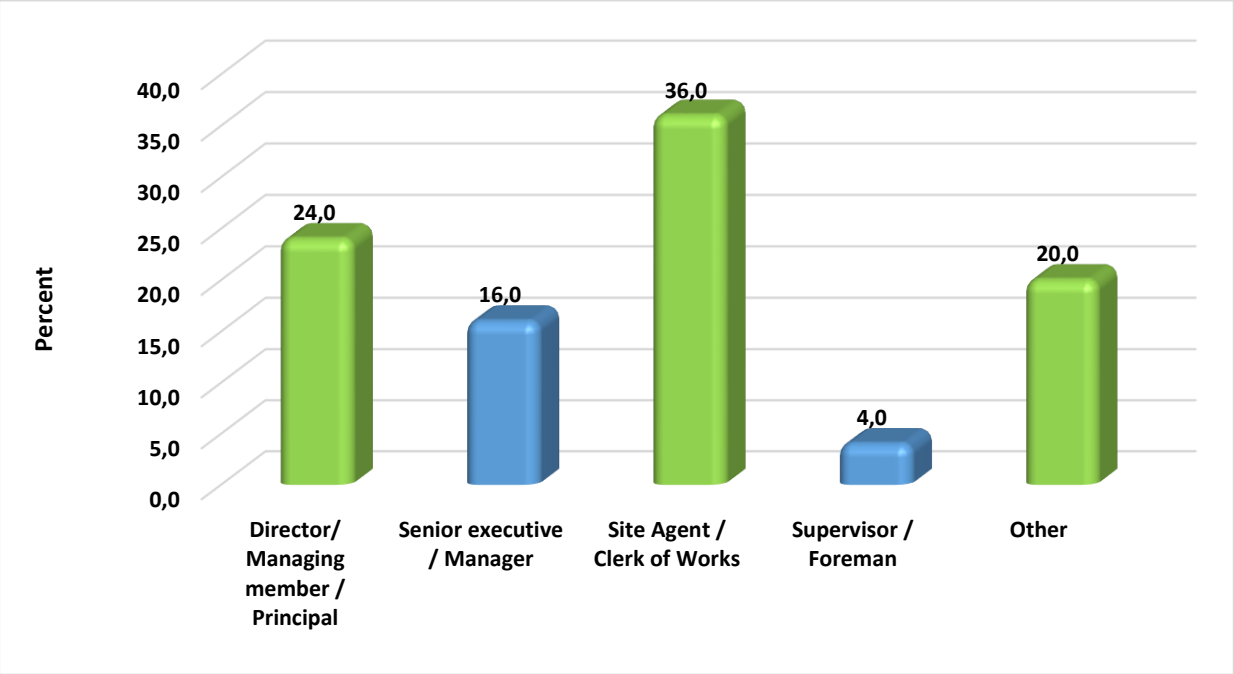

Figure 5.6: Respondents status in their organisation

5.6.1.7 Respondents' years of experience

Figure 5.7 indicates the respondents experience in the industry, 60% of the respondents have between six to ten years' experience in the construction industry, and they predominate in the sample. Following closely are respondents with zero to five years, totalling 16%. Respondents with eleven to fifteen years' experience represent 12%, while those who have between twenty one to twenty five years' experience represent 8% and only a fraction of respondents have experience between sixteen to twenty years representing 4%. This analysis indicates that the industry is highly dominated by young people representing an overall percentage of 76%, who have the sufficient experience and ought to be able to manage project finances and understand construction processes. A respondent that has obtained up to five years' experience is considered to be

knowledgeable in his / her discipline; therefore the data obtained from these respondents is deemed to be reliable.

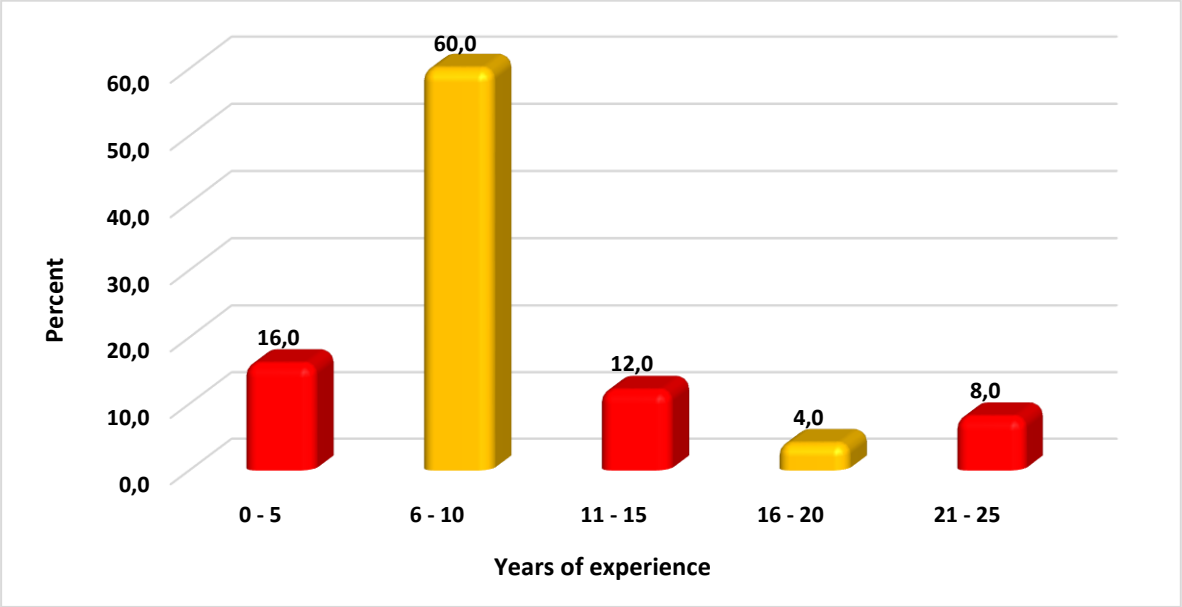

Figure 5.7: Respondents experience in the industry

5.6.1.8 Training programmes and year of participation

40% of the respondents have participated in various programmes such as Anti-corruption and Ethics, Expanded Public Works Programme, Integrated Development Planning, Labour intensive construction works, Municipal infrastructure grant training, Supply chain management training, Vukuzakhe ECDP and Vukuzakhe KZN contractor Mentoring programme in the years 2000, 2009, 2015, 2016 and 2017. This analysis indicates that there are training opportunities offered, but a lot still needs to be done to develop more skills. In all the training programmes that the respondents have participated in, no programme offers training or mentorship in funds management and this is the basic requirement for the development of sustainable contractors.

5.7 Cronbach's alpha for validation of data

The data below is presented and analysed for validating the flowchart

Table 5.3: Cronbach's alpha for validation of data

	Factors	No. of Items	Cronbach's Alpha
1	Influence of factors on funds management	8	0,795
2	Community Buy-In & Leadership Structures	4	0,704
3	Municipal / Government Involvement	3	0,823
4	Procurement of Tenders and Appointment	8	0,747
5	Financial management	2	0,745
6	Construction processes	9	0,900

The Cronbach's alpha values for all the sections are > 0.70, this indicates a degree of acceptable consistent scoring of the research. It should be noted that Cronbach's α values of 0.50 to 0.70 are acceptable.

Table 5.4: Influence of factors on funds management

Rotated Component Matrix[a]			
Factors	**Component**		
	1	**2**	**3**
Understand and apply business and financial management concepts	0,884	-0,016	0,252
Promote and provide credit services and bridging finance	0,929	0,091	0,112
Training to understand business plan and adapting it to suit a selected business idea	0,261	-0,073	0,918
Promote contractor independence to ensure sustainability	0,980	0,042	0,054
Introduce high level of professionalism and formality in the industry through attendance of formal courses	0,514	0,692	-0,199
Assist contractors to maintain high level of ethics	0,012	0,672	0,561
Improve contractor financial standing and employability	0,001	0,940	0,139
Improve contractor performance and quality of work	-0,022	0,857	-0,134
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 4 iterations.			

The following tables fall under Table 5.5: Factors relative to successful project delivery and have been divided into two main sub-headings as follows.

Table 5.5 (a): Community Buy-In & Leadership Structures

Component Matrix[a]	
Factors	**Component**
	1
Tribal authority	0,604
Ward councillors and ward committees	0,895
Formation of project steering committee	0,901
Politically influenced service delivery	0,709
Extraction Method: Principal Component Analysis.	
a. 1 component extracted.	

Table 5.5 (b): Municipal / Government Involvement

Component Matrix[a]	
Factors	**Component**
	1
Funders provide finances for project	0,801
Appointment of consultants	0,873
Designs and Bid documentation prepared and finalised	0,908
Extraction Method: Principal Component Analysis.	
a. 1 component extracted.	

Table 5.6: Procurement of Tenders and Appointment

Rotated Component Matrix[a]			
Factors	**Component**		
	1	**2**	**3**
Tender documents prepared and submitted	0,194	0,888	-0,138
Contractor appointed	0,110	0,920	0,207
Health & Safety plan & work programme prepared	0,642	0,671	-0,084
Finances & material credit secured	0,855	0,265	-0,389
Insurances & guarantees secured	0,807	0,321	-0,396
Compliance documents submitted	0,935	0,042	0,182
Local suppliers identified	-0,054	-0,039	0,923
Competent sub-contractors & personnel appointed	-0,142	0,085	0,902
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 5 iterations.			

Table 5.7: Financial Management

Rotated Component Matrix[a]		
Factors	**Component**	
	1	**2**
Contractor pays for plant & materials	0,803	-0,236
Contractor pays labourers	0,934	0,017
Project finances successfully managed from inception to completion – profit made and project complete successfully and within budget.	0,663	0,253
Project finances mismanaged from inception to completion – loss made and project incomplete or if completed, quality is compromised	0,005	0,954
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.		
a. Rotation converged in 2 iterations.		

Table 5.8: Construction Processes

Rotated Component Matrix[a]		
Factors	**Component**	
	1	**2**
Plant hired & material ordered	0,739	0,397
Quality of work, materials, equipment checked	0,841	0,340
Work specifications followed & work approved	0,877	0,311
Site instructions issued & weekly site meetings held	0,335	0,760
Supervision of subcontractors and labourers	0,362	0,838
H & S monitored & adhered too	0,524	0,541
Time & work programme closely monitored	0,832	0,278
Payment for work done	0,586	-0,538
Weather & other delays catered for and properly documented	0,232	0,812
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.		
a. Rotation converged in 3 iterations.		

Factor analysis is a statistical technique whose main goal is data reduction. With reference to the tables above: The principal component analysis was used as the

extraction method, and the rotation method was Varimax with Kaiser Normalization. This is an orthogonal rotation method that minimizes the number of variables that have high loadings on each factor. It simplifies the interpretation of the factors. Factor analysis/loading show inter-correlations between variables. Items of questions that loaded similarly imply measurement along a similar factor. An examination of the content of items loading at or above 0.5 (and using the higher or highest loading in instances where items cross-loaded at greater than this value) effectively measured along the various components. It is noted that the variables that constituted the various sections loaded along 2 or 3 components (sub-themes). This means that respondents identified different trends within the section. Within the section, the splits are colour coded and codes are separated as follows: Code 1 is yellow; Code 2 is green and Code 3 is blue.

Based upon the factor analysis loadings (rotated component matrix) obtained for factors, the majority are greater than 0.50. It is deemed that the items for all factor categories have good agreement and this means that the factors adequately describe these categories.

5.8 Validation main questionnaire relative to flowchart

Table 5.9: Ranking of emerging contractor challenges in funds management and project delivery time

Factor per category	Unsure	Does not	Responses (%) Minor ……Major					Mean score	Standard Deviation	Rank
			1	2	3	4	5			
Financial Management										
Project finances successfully managed from inception to completion – profit made and project completed successfully and within budget	0%	4%	0%	0%	4%	4%	88%	4,88	0,45	
Project finances mismanaged from inception to completion – loss made and project incomplete or if completed, quality is compromised	0%	0%	0%	4%	0%	4%	92%	4,84	0,62	
Contractor pays labourers	0%	0%	0%	0%	0%	20%	80%	4,80	0,41	1
Contractor pays for plant & materials	0%	0%	0%	4%	0%	32%	64%	4,56	0,71	
Influence of factors on funds management (training and mentorship programmes to develop contractors)										
Improve contractor performance and quality of work	0%	0%	0%	0%	0%	20%	80%	4,80	0,41	
Assist contractors to maintain high level of ethics	0%	0%	0%	0%	0%	32%	68%	4,68	0,48	
Introduce high level of professionalism and formality in the industry through attendance of formal courses	0%	0%	0%	0%	8%	16%	76%	4,68	0,63	
Improve contractor financial standing and employability	0%	0%	0%	0%	8%	24%	68%	4,60	0,65	
Promote contractor independence to ensure sustainability	4%	0%	0%	0%	8%	25%	63%	4,57	0,66	2
Promote and provide credit services and bridging finance	4%	0%	0%	0%	8%	28%	60%	4,54	0,66	
Training to understand business plan and adapting it to suit a selected business idea	0%	0%	0%	0%	4%	48%	48%	4,44	0,58	
Understand and apply business and financial management concepts	4%	0%	0%	4%	4%	36%	52%	4,42	0,78	

Table 5.9 continued

Construction processes										
Payment for work done	0%	0%	0%	0%	0%	20%	80%	4,80	0,41	3
Quality of work, materials, equipment checked	0%	0%	4%	0%	12%	8%	76%	4,52	1,00	
Time & work programme closely monitored	0%	0%	0%	4%	4%	32%	60%	4,48	0,77	
Plant hired & material ordered	0%	0%	4%	0%	12%	16%	68%	4,44	1,00	
Work specifications followed & work approved	0%	0%	4%	0%	12%	16%	68%	4,44	1,00	
Weather & other delays catered for and properly documented	0%	0%	4%	0%	8%	36%	52%	4,32	0,95	
H & S monitored & adhered too	0%	0%	8%	0%	4%	48%	40%	4,12	1,09	
Supervision of subcontractors and labourers	0%	0%	4%	0%	8%	56%	32%	4,12	0,88	
Site instructions issued & weekly site meetings held	0%	0%	4%	0%	28%	40%	28%	3,88	0,97	
Procurement of tenders and appointment										
Finances & material credit secured	0%	0%	4%	0%	4%	28%	64%	4,48	0,92	4
Insurances & guarantees secured	0%	0%	4%	0%	12%	20%	64%	4,40	1,00	
Health & Safety plan & work programme prepared	0%	0%	4%	4%	4%	32%	56%	4,32	1,03	
Compliance documents submitted	0%	0%	4%	8%	4%	20%	64%	4,32	1,14	
Tender documents prepared and submitted	0%	0%	4%	0%	32%	24%	40%	3,96	1,06	
Local suppliers identified	0%	0%	0%	8%	20%	44%	28%	3,92	0,91	
Competent sub-contractors & personnel appointed	0%	0%	0%	8%	21%	46%	25%	3,88	0,90	
Contractor appointed	0%	0%	4%	8%	32%	40%	16%	3,56	1,00	
Municipal / Government involvement										
Funders provide finances for project	0%	0%	0%	4%	12%	28%	56%	4,36	0,86	5
Designs and Bid documentation prepared and finalised	0%	0%	0%	12%	12%	48%	28%	3,92	0,95	
Appointment of consultants	0%	0%	4%	12%	16%	44%	24%	3,72	1,10	

Table 5.9 continued

Community buy-in and leadership structures										
Tribal authority	8%	0%	0%	16%	24%	8%	44%	3,87	1,22	6
Formation of project steering committee	0%	0%	0%	13%	21%	42%	25%	3,79	0,98	
Ward councillors and ward committees	0%	0%	4%	28%	28%	16%	24%	3,28	1,24	
Politically influenced service delivery	12%	4%	24%	16%	8%	12%	24%	2,95	1,66	

The most important factors to improve financial management of emerging contractors in the South African construction industry are those identified at the construction stage. At this stage all the proposed factors with the exception of one have MSs > 4.00. The factor that has a MS < 4.00 is site instructions issued and weekly site meetings held (MS= 3.88). Although the mean score is slightly lower than the others in the category, it is higher than the mean scores of most factors in other categories. Influence of factors on funds management (training and mentorship programmes to develop contractors) category is second in the rank, followed by construction processes; procurement of tenders and appointment; municipal / government involvement and community buy-in and leadership structures. If the influence of factors on funds management (training and mentorship programmes to develop contractors) were to be rated as the last option in the categories of influence, the judgement of the respondents would be regarded as being unsuitable because the study has proved beyond reasonable doubt that emerging contractors lack a lot of skills and need to be trained in many areas. The same norm applies in the construction processes as these directly impact on the funds management of emerging contractors.

Table 5.10: Ranking of average mean scores according to factor categories

Factors	**Mean Score**	**Rank**
Financial management	4.77	1
Influence of factors on funds management (training and mentorship programmes to develop contractors)	4.59	2
Construction processes	4.35	3
Procurement of tenders and appointment	4.11	4
Municipal / Government involvement	4.00	5
Community buy-in & leadership structures	3.41	6

The most important category is financial management in the construction of the project. Financial management during the construction of a project has an average Mean Score of 4.77. This mean score of 4.77 falls within the range > 4.20 ≤ 5.00 and has between a near major to major influence/ major influence on the delivery of projects.

Respondents are deemed to be of the opinion that financial management relative to the construction of a project needs to be properly managed. It also indicates that respondents are of the opinion that the major changes need to be done at the construction stage to eliminate budget overrun and delays in the delivery of projects.

The factors that have a major influence in this category are project finances successfully managed from inception to completion – profit made and project completed successfully and within budget (MS = 4.88); Project finances mismanaged from inception to completion – loss made and project incomplete or if completed, quality is compromised (MS= 4.84); Contractor pays labourers (MS=4.80) and Contractor pays for plant & materials (MS=4.56).

Based upon the average mean scores of funds management in the construction of a project, it is concluded that respondents deemed funds management to have between a near major to major/ near major influence on the delivery of projects in South Africa.

The only category relative to project delivery but falls outside the abovementioned range is community buy-in and leadership structures (MS = 3.41), which has between a near minor to moderate influence / moderate influence on successful project delivery and financial management of emerging contractors.

5.9 Chapter 5 Summary

The aim of this study was to identify and assess challenges facing emerging contractors in the South African construction industry with a view of developing a flowchart to mitigate these problems. The development of this chapter was to provide the much needed solution to a developing industry that is facing numerous challenges which include management of finances. This study has proved that lack of skills and proper financial management systems cripples the industry's growth potential during the project implementation phase. However, the development of this flowchart has bridged the gap and shows all industry stakeholders what is needed on each stage and what to do when

a challenge arises at a certain phase of a project life cycle. This flowchart provides a strategic link in mitigating emerging contractor challenges in funds management as well as in improving their skills. The proposed flowchart is the studies contribution to knowledge as it intends to close the gaps identified in the preceding chapters of this study. It has been validated by different construction industry stakeholders to see the extent to which they conform to its attributes as a means of mitigating the challenges experienced by emerging contractors in KwaZulu-Natal.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction to chapter 6

This chapter presents the conclusion and the recommendations of the study. Conclusions relative to phase one questionnaire will be explained as well as conclusion relative to the validation of the flowchart. Recommendations of the study will be divided into two and they include: recommendations from phase one questionnaire and recommendations from the validation of the flowchart. In addition to the above, this study includes recommendations for further studies that still need to be explored.

6.2 Conclusions relative to phase one questionnaire

In chapter 4, this study ranks the factors explored by their average mean scores on challenges, causes of challenges and their impact on funds management and project delivery time. The leading factors with an average (MS= 2.73) were under the causes of challenges of emerging contractors in funds management. Following closely in rank were factors under challenges of emerging contractors (MS=2.64). Factors under the category of impact of emerging contractor challenges on project delivery time presented a (MS=2.32). Based upon the factor analysis conducted in the preceding chapters, it is concluded that all factors identified for each category adequately describe the sub-problems by the value of the loadings obtained for each category of sub-problems, which were greater than 0.50 in all cases.

Late payments for work done which ultimately causes project delays is a still a major challenge facing the South African construction industry. This challenge needs to be addressed and clients need to improve their internal processes in order to speed up the payment process. Consultants and Contractors also need to prepare claims early and submit them on time so that they are processed on time to avoid delays;

Interference with project performance (vested interests) is what causes many projects not to be completed on time. When project stakeholders have different interests which are not of the project, they are likely to cause delays on the project. Interference with project performance also causes contractual disputes, it may also lead to the abandonment of projects or cause project failure;

Inadequate planning creates a lot of challenges on site for contractors. When proper planning is not done, the project suffers and this leads to a lot of contractual disputes. Delays are also inevitable when planning is not adequate.

Unskilled site manpower is what cripples the industry' development. Construction is a technical sector and requires technical skills to be able to execute projects successfully. When these skills lack, mistakes during construction are highly likely to occur. People need to acquire these skills in order to be able to do construction work as per the requirements.

Late delivery of material stems from different factors which include late orders being made, delays caused by suppliers from shortages or over commitment on orders, or material payments being effected late by contractors. When material is delivered late, it causes project delays and also adds to additional costs being incurred by the contractor.

Late identification of errors & resolution of drawings, specification errors & omissions results in project delays and additional project cost. Rework is also inevitable when mistakes are made due to errors being identified late or when mistakes are made in designs and specifications.

Community unrests, militancy and communal crises are avoidable when proper communication channels are followed and addressed as and when they arise;

Lack of adequate communication between the parties is the root cause of many disputes. When communication is inadequate between the parties, important messages are not conveyed properly and it may lead to conflict between the project stakeholders;

Interference by political leaders is a cause of many delays encountered in a project. This factor is also connected with the second factor, any interference which is not in the interest of the project usually causes delays and results in additional costs being incurred in projects. In some cases it may lead to incomplete projects or poorly completed projects. This interference by politicians needs to be avoided at all cost for a project to be a success and be delivered on time and within the allocated budget.

Site ground conditions such as a high water table, underground services, and unstable ground negatively affect the construction phase and affect project delivery time. Proper geotechnical studies need to be made prior to commencement of any activities on site.

The research problem, first three research questions asked and the top three objectives of the study that were presented in chapter 1 have been addressed in this study. It is therefore concluded that the challenges, causes and impact of the factors presented is what impedes growth and sustenance of emerging contractors in the South Africa construction industry.

6.3 Conclusions relative to validation of the flowchart

The intention of conducting the research was to provide solutions to problems that were identified. The last two research questions and objectives were intended to check the gaps that need to filled and provide a solution that will not only assist emerging contractors but the industry as a whole in overcoming the challenges it is facing. Chapter 5 was solely dedicated to identifying those gaps and providing the solution for the industry. For this to be done, the effectiveness of current training and develop programmes was analysed and gaps were found. These gaps have been filled with the proposed programme. The flowchart was then developed based on these gaps and it presents the different steps to be taken during the lifecycle of a project. Additional to this, the flowchart was validated by different industry stakeholders and the average mean scores were calculated. The leading factors under financial management presented a (MS=4.77). Following closely was the influence of factors on funds management (training and mentorship programmes to develop contractors) (MS=4.59). Mitigation measures in financial management and training and mentorship at various stages of a project lifecycle is needed in the industry. Based on these findings, it is concluded that emerging contractors need assistance in managing funds, they also need to be trained and mentored until they are fully fledged and financially sustainable.

Is it therefore concluded the proper financial management during the construction of a project is important as it allows projects to run smoothly, prevents delays in project delivery time, upholds quality of work and eliminates disputes emanating from mismanaged finances. The suggestions made for proper financial management and on time project delivery as mitigation measures for different phases of a project are required for facilitating the smooth flow of activities during construction. This amplifies the importance of mitigation measures at all stages of a project life cycle. For this to be achieved, emerging contractors need to be properly equipped with skills through training and mentorship. Funds need to be managed properly for contractors to grow and manage sustainable businesses as well as to be able to run projects without having cash flow challenges. From the foregoing, it is concluded that mitigation measures at all stages of a project as proposed in the flowchart are important for the realisation of projects on time and within budget.

6.4 Recommendations

The recommendations for this study are divided into two, namely recommendations emerging from the phase one questionnaire and the validation of the flowchart conclusions.

6.4.1 Recommendations from phase one questionnaire

Clients, consultants and contractors need to work hand-in-hand to ensure payments are effected on time. This will eliminate project delays and financial mismanagement.

Project stakeholders who are not technical must not interfere with project performance so as to ensure successful completion of projects.

Adequate and proper planning must be done by contractors so as to avoid delays in project execution.

Skills must be developed for construction workers through the attendance of formal courses. This will also help in eliminating the skills shortage in the construction industry as a whole.

During the planning stage, contractor need to allocate time for material ordering, waiting and delivery so as to eliminate time wasted waiting for materials to be delivered and to curb project delays.

Mistakes in the work must be identified in time and rectified as soon as they are identified. This also applies to drawings and specification. When errors are identified in designs and specifications, consultants must issue site instructions to urgently rectify such errors in order to avoid delays at a later stage.

Additional to this, proper communication channels must always be kept open during the lifespan of a project to avoid disputes in communities and between project stakeholders.

Politicians must avoid interfering in projects when pursuing their political mandates so as to ensure that the technical team decisions are not interfered with. Although they may make suggestions on the basis of benefiting their communities, they must also

understand that the ultimate decision lies with the technical team and the implications that their requests will have on project finances and delivery time.

Detailed geotechnical studies need to be conducted prior to the commencement of any project so as to know what remedies to be taken to improve site ground conditions or what other alternatives could be explored if ground conditions cannot be improved.

When these recommendations are applied during the lifecycle of a project, it will eliminate challenges facing emerging contractors, the causes of challenges of emerging contractors in funds management and the impact of emerging contractor challenges on project delivery time.

6.4.2 Recommendations from the validation of the flowchart

Proper financial management is what determines project success. When finances are sufficiently allocated and properly managed from inception to the completion of a project, projects are guaranteed to be completed and profit made by the contractor. Funds management goes hand-in-hand with proper training. Contractors need to attend financial management courses and skills development training courses as recommended in the proposed programme on chapter 5 to enable them to develop different skills and business acumen.

At the pre-planning phase, it is recommended that emerging contractors participate in training and mentorship programmes to eliminate financial mismanagement and develop skills to manage sustainable businesses. These skills include: financial management; business management, project management, risk management and human resource management. Additional to this, emerging contractors need to attend formal courses.

At the planning phase, all project stakeholders should endeavour to plan properly for projects (financial resource for client and secure land), engage with all concerned and affected parties timeously (including community leadership structures and politicians); do thorough feasibility studies; consultants must design and supply sufficient information for construction; contractors need to secure enough finances, credit and resources (including subcontractors, labour, equipment and material) and have insurance and guarantees in place.

At the project implementation phase, consideration of the following interventions will assist in eliminating funds mismanagement on projects. These interventions include use secured funds to start and run projects; use acquired credit to purchase material and hire plant from suppliers; effect payments to stakeholders (employees, subcontractors and suppliers) on time so as to avoid ruining working relationships, strikes and delays on projects; plan adequately for all construction processes and requirements thereof; develop realistic work programmes and cash flow forecasts; monitor quality at every stage of the project; conduct regular financial audits on projects to ensure that budgets are not exceeded and the contractor is not making a loss; adopt and use the proposed programme and flowchart to assist emerging contractors and other industry stakeholders to resolves issues emanating from financial mismanagement and late delivery of projects.

6.4.3 Recommendations for further studies

The following studies are recommended to be undertaken in South Africa:

A study of contractor financial management practices in South Africa.

A comparative study of contractor financial management practices in public and private projects.

A study on preventative measures that may be employed to assist emerging contractors in financial management.

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Appendix 1

Steve Biko Campus
Department Of Construction
Management and Quantity Surveying
Tel: 031 373 2585
AyodejiA@dut.ac.za

03 March 2017

Dear Madam / Sir

Re: An exploration of funds management by emerging contractors

The questionnaire survey is part of a research project aimed at meeting the requirements for Master of Technology (Quantity Surveying) at the Durban University of Technology, carried out to:
Assess the causes of challenges of emerging contractors relative to funds management;
Assess the impact of these challenges on project delivery time relative to funds management;
Assess current programmes relative to educating emerging contractors in funds management; and
Develop a flow chart to mitigate emerging contractor challenges relative to funds management.

Kindly complete the accompanying questionnaire and note that your anonymity is assured. Solutions to challenges encountered on construction projects will be evolved from your response.

We would be grateful if you would endeavour to complete the questionnaire and return it by 28 April 2017 to:

PO Box 296
Uvongo
4270
or per facsimile to: (086) 527 3071
Att: Ms A.A Merana

Should you have any queries please do hesitate to contact Ms A.A Merana at 071 151 2281 or per e-mail: andisamerana@gmail.com

Thanking you in advance for your response.

_____
A.A Merana
Mtech (Quantity Surveying) student

_____
Dr. A.O Aiyetan, PhD (Construction Management)
Supervisor and Mtech Co-ordinator
Department of Construction Management and Quantity Surveying

QUESTIONNAIRE TYPE I

Section 1: DEMOGRAPHIC DATA

A *ORGANISATIONAL*

1. In which region in KwaZulu Natal do you work?

□ Southern Region □ Northern Region □ Midlands Region □

2. Name of Project:

……..……

3. Name of organization:

……..……

4. Please indicate the actual number of years your organisation has been involved in construction……..……..

B *PERSONAL*

5. Please indicate your gender

□ Female □ Male

6. Please indicate your age:

□ Under 25 years' □ 41-50 years
□ 26 - 30 years □ Over 50 years
□ 31 - 40 years

7. Please indicate your highest formal qualification:

	Tick		*Tick*
Matric certificate		Honours Degree	
Diploma		Master's Degree	
Postgraduate Diploma		Doctoral Degree	
Bachelor's Degree		Other (Please specify)	
B Tech		Other (Please specify)	

8. Kindly indicate from below the category of CIDB grading your company belongs to:

	Tick
CIDB grade 1	
CIDB grade 2	
CIDB grade 3	
CIDB grade 4	
CIDB grade 5	

9. Please indicate your status in the organisation

	Tick		*Tick*
Director/ Managing member / Principal		Buyer	
Senior executive / Manager		Supervisor / Foreman	
Site Agent / Clerk of Works		Trainee / Intern	
Other (Please specify)			

10. Kindly indicate your actual years of experience in the building construction industry

……

11. Kindly indicate from below the type of facility you have been involved in constructing.

	Tick		*Tick*
Residential houses		Hospitals	
Office parks		Industrial firms parks	
School buildings		Block of flats	
Community halls		Hotel/motel	
Other (state what function)			

12. Kindly indicate the number of floors the facility being constructed consists of:

	Tick
1 Floor	
2 Floors	
3 – 5 Floors	
6 Floors and above	
Above 6 floors	

SECTION 2: MAIN QUESTIONNAIRE

1. PROJECT SCOPE DETAILS

Project Scope in Monetary Value

a) Initial cost	a)
b) Final cost	b)

2. PROJECT DURATION

Actual construction start date	
Final Completion Date	
Final Construction Period at Tender Award (in weeks)	

3. On a scale of 1 (minor) to 5 (major), rate your understanding of these challenges encountered by emerging contractors with respect to starting and managing a project. (Please note the 'unsure' (U) and 'Does not' (DN) options).

S/N	Challenges of emerging contractors	U	DN	MINOR……..…MAJOR				
				1	2	3	4	5
3.1	Inability to get credit from material and plant suppliers, inability to raise and manage cashflows and to secure bank loans.	U	DN	1	2	3	4	5
3.2	Inability to employ competent staff due to affordability	U	DN	1	2	3	4	5
3.3	Poor contract documentation skills	U	DN	1	2	3	4	5
3.4	Fronting for established contractors	U	DN	1	2	3	4	5
3.5	Lack of entrepreneurial skills	U	DN	1	2	3	4	5
3.6	Lack of proper training	U	DN	1	2	3	4	5
3.7	Lack of resources for either large or complex construction work	U	DN	1	2	3	4	5
3.8	Lack of technical, financial, contractual, and managerial skills	U	DN	1	2	3	4	5
3.9	Late payment for the work done which ultimately causes project delays.	U	DN	1	2	3	4	5
3.10	Other (specify)							

4. On a scale of 1 (minor) to 5 (major), rate the causes of challenges of emerging contractors in relation to funds management. (Please note the 'unsure' (U) and 'Does not' (DN) options).

S/N	Causes of challenges of emerging contractors in funds management	U	DN	MINOR……MAJOR				
				1	2	3	4	5
4.1	**Client related issues**							
4.1.1	Insufficient funding	U	DN	1	2	3	4	5
4.1.2	Interference with project performance	U	DN	1	2	3	4	5
4.1.3	Delay or non-payment for completed works	U	DN	1	2	3	4	5
4.1.4	Impractical allocation of resources	U	DN	1	2	3	4	5
4.1.5	Unrealistic contract duration	U	DN	1	2	3	4	5
4.1.6	Wrong choice of consultants & sub-contractors	U	DN	1	2	3	4	5
4.1.7	Slow decision making	U	DN	1	2	3	4	5
4.1.8	Design alterations & change orders	U	DN	1	2	3	4	5
4.2	**Contractor-related issues**							
4.2.1	Poor coordination of subcontractors	U	DN	1	2	3	4	5
4.2.2	Inappropriate construction methods	U	DN	1	2	3	4	5
4.2.3	Inadequate planning	U	DN	1	2	3	4	5
4.2.4	Inadequate experience	U	DN	1	2	3	4	5
4.2.5	Mistakes during construction stage	U	DN	1	2	3	4	5
4.2.6	Incompetent site management	U	DN	1	2	3	4	5
4.2.7	Wrong choice of bankers	U	DN	1	2	3	4	5
4.3	**Labour and equipment related issues**							
4.3.1	Unskilled site manpower	U	DN	1	2	3	4	5
4.3.2	Improper equipment selection & Faulty equipment	U	DN	1	2	3	4	5
4.3.3	Labour disputes	U	DN	1	2	3	4	5
4.4	**Materials-related issues**	U	DN	1	2	3	4	5
4.4.1	Poor quality materials	U	DN	1	2	3	4	5
4.4.2	Material shortages	U	DN	1	2	3	4	5
4.4.3	Late delivery of material	U	DN	1	2	3	4	5
4.4.4	Material shortages resulting from damages	U	DN	1	2	3	4	5
4.5	**Consultant-related issues**							
4.5.1	Inappropriate design	U	DN	1	2	3	4	5
4.5.2	Poor contract management	U	DN	1	2	3	4	5
4.5.3	Late identification of errors & resolution of drawings; specification errors & omissions	U	DN	1	2	3	4	5
4.5.4	Late preparation of drawings and other contract documents	U	DN	1	2	3	4	5
4.5.5	Improper contract packaging/delivery strategy	U	DN	1	2	3	4	5
4.5.6	Over inspection	U	DN	1	2	3	4	5

4.5.7	Long waiting time for inspection & testing	U	DN	1	2	3	4	5
4.5.8	Inappropriate coordination of information	U	DN	1	2	3	4	5
4.5.9	Inappropriate construction methods	U	DN	1	2	3	4	5
4.5.10	Poor supervision resulting in rework	U	DN	1	2	3	4	5
4.6	**Community related issues**							
4.6.1	Lack of community buy-in	U	DN	1	2	3	4	5
4.6.2	Delay or Non-payment of Compensation	U	DN	1	2	3	4	5
4.6.3	Community unrest, militancy & communal crises	U	DN	1	2	3	4	5
4.7	**Contractual relationship related issues**							
4.7.1	Lack of adequate communication between the parties	U	DN	1	2	3	4	5
4.7.2	Major disputes & negotiations	U	DN	1	2	3	4	5
4.7.3	Wrong organizational structure linking to the project	U	DN	1	2	3	4	5
4.8	**External issues**							
4.8.1	Weather conditions	U	DN	1	2	3	4	5
4.8.2	Change in government's leadership & policies	U	DN	1	2	3	4	5
4.8.3	Natural disasters (e.g. floods, lightning strikes)	U	DN	1	2	3	4	5
4.8.4	Interference by political leaders	U	DN	1	2	3	4	5
4.8.5	Other (specify)							
4.8.6	Other (specify)							

5. On a scale of 1 (minor) to 5 (major), rate the impact of emerging contractor's challenges on project delivery time (Please note the 'unsure' (U) and 'Does not' (DN) options).

S/N	Impact of emerging contractors' challenges on project delivery time.	U	DN	MINOR……MAJOR				
				1	**2**	**3**	**4**	**5**
5.1	The client's understanding of the design, procurement, and construction processes	U	DN	1	2	3		5
5.2	Quality management during design	U	DN	1	2	3	4	5
5.3	Quality management during construction	U	DN	1	2	3	4	5
5.4	Management techniques used for planning and control	U	DN	1	2	3	4	5
5.5	Economic policy	U	DN	1	2	3	4	5
5.6	Constructability of design	U	DN	1	2	3	4	5
5.7	Site ground conditions	U	DN	1	2	3	4	5
5.8	Motivation of staff	U	DN	1	2	3	4	5
5.9	Management style	U	DN	1	2	3	4	5
5.10	Site access	U	DN	1	2	3	4	5
5.11	Physical environment considerations	U	DN	1	2	3	4	5
5.12	Socio-political considerations	U	DN	1	2	3	4	5
5..13	Other (specify)							

6. Do you have any comments in general regarding challenges of emerging contractors, their causes and the impact they have on project delivery time?

……
……
……
……

Please record your details below to facilitate contacting you, in the event that a query should arise.

Please note that the information provided in this questionnaire will be treated in the strictest confidence.

ORGANISATION

_____

ADDRESS _____

_____

_____

_____

CONTACT PERSON _____

PHONE _____

FAX _____

MOBILE _____

E-MAIL _____

Thank you for your contribution to the Exploration of funds management by Emerging contractors.

Ms. A. A. Merana

Appendix 2

Steve Biko Campus
Department of Construction
Management and Quantity Surveying
Tel: 031 373 2585
AyodejiA@dut.ac.za

02 October 2017

Dear Madam / Sir

Re: Validation of effectiveness of training and development programmes aimed at capacitating emerging contractors

The flowchart is the completion of the research into an exploration of funds management by emerging contractors.

This flowchart has been developed with the view of determining the effectiveness of training and development programmes geared to assist emerging contractors in financial, business and project management, as well as to mitigate emerging contractor challenges in funds management and project delivery time.

We would be grateful if you would complete the accompanying questionnaire. Please note that your anonymity is assured. Effectiveness of training programmes in funds management and project delivery time will be assessed from your response and enhance the reliability of the research findings.

We would be grateful if you would endeavour to complete the questionnaire and return it by 31 October 2017 to:

PO Box 296
Uvongo
4270
or per facsimile to: (086) 527 3071
Att: Ms A.A Merana

Should you have any queries please do hesitate to contact Ms A.A Merana at 071 151 2281 or per e-mail: andisamerana@gmail.com

Thanking you in advance for your response.

_____
A.A Merana
Mtech (Quantity Surveying) student

_____
Dr. A.O Aiyetan, PhD (Construction Management)
Supervisor and Mtech Co-ordinator
Department of Construction Management and Quantity Surveying

QUESTIONNAIRE TYPE II

Section 1: DEMOGRAPHIC DATA

A *ORGANISATIONAL*

1. In which region in KwaZulu Natal do you work?

□ Southern Region
□ Northern Region
□ Midlands Region □

2. Name of Project:

……..……

3. Name of organization:

…….……...…

……

B *PERSONAL*

4. Please indicate your gender

□ Female □ Male

5. Please indicate your age:

□ Under 25 years'
□ 25 - 30 years
□ 31 - 40 years
□ 41-50 years
□ Over 50 years

6. Please indicate your highest formal qualification:

	Tick		*Tick*
Matric certificate		Honours Degree	
Diploma		Master's Degree	
Postgraduate Diploma		Doctoral Degree	
Bachelor's Degree		Other (Please specify)	
B Tech		Other (Please specify)	

7. Please indicate your status in the organisation:

	Tick		*Tick*
Director/ Managing member / Principal		Buyer	
Senior executive / Manager		Supervisor / Foreman	
Site Agent / Clerk of Works		Trainee / Intern	
Other (Please specify)			

8. Kindly indicate your actual years of experience in the construction industry

□ 0 - 5 years
□ 6 - 10 years
□ 11 - 15 years
□ 16-20 years
□ 21- 25 years
□ 26- 30 years

9. Kindly indicate if you have participated in any training programme. If yes, please name programme and year in which you participated in.

……..…

……..….

……

……

SECTION 2: MAIN VALIDATION QUESTIONNAIRE

B. CONTRACTOR DEVELOPMENT PROGRAMMES

1. On a scale of 1 (not influential) to 5 (very influential), rate how do these factors influence the improvement of funds management by emerging contractors in the South African construction industry. (Please note the 'unsure' (U) and 'Does not' (DN) options).

	Influence of factors on funds management	U	DN	Not Influential…….Very Influential				
				1	2	3	4	5
1.1	Understand and apply business and financial management concepts	U	DN	1	2	3	4	5
1.2	Promote and provide credit services and bridging finance	U	DN	1	2	3	4	5
1.3	Training to understand business plan and adapting it to suit a selected business idea	U	DN	1	2	3	4	5
1.4	Promote contractor independence to ensure sustainability	U	DN	1	2	3	4	5
1.5	Introduce high level of professionalism and formality in the industry through attendance of formal courses	U	DN	1	2	3	4	5
1.6	Assist contractors to maintain high level of ethics	U	DN	1	2	3	4	5
1.7	Improve contractor financial standing and employability	U	DN	1	2	3	4	5
1.8	Improve contractor performance and quality of work	U	DN	1	2	3	4	5

2. On a scale of 1 (not effective) to 5 (very effective), indicate the effect of the non-availability of these factors relative to project success. (Please note the 'unsure' (U) and 'Does not' (DN) options)

	Factors relative to successful project delivery	U	DN	Not effective……..…Very effective				
				1	2	3	4	5
2.1	**Community Buy-In & Leadership Structures**							
2.1.1	Tribal authority	U	DN	1	2	3	4	5
2.1.2	Ward councillors and ward committees	U	DN	1	2	3	4	5
2.1.3	Formation of project steering committee	U	DN	1	2	3	4	5
2.1.4	Politically influenced service delivery	U	DN	1	2	3	4	5
2.2	**Municipal / Government Involvement**							
2.2.1	Funders provide finances for project	U	DN	1	2	3	4	5
2.2.2	Appointment of consultants	U	DN	1	2	3	4	5
2.2.3	Designs and Bid documentation prepared and finalised	U	DN	1	2	3	4	5

3. On a scale of 1 (minor) to 5 (major), rate how the procurement process and other factors, affect funds management of Emerging Contractors. (Please note the 'unsure' (U) and 'Does not' (DN) options)

	Factors affecting procurement and appointment of professionals	U	DN	Minor…….Major				
				1	2	3	4	5
3.1	**Procurement of Tenders and Appointment**							
3.1.1	Tender documents prepared and submitted	U	DN	1	2	3	4	5
3.1.2	Contractor appointed	U	DN	1	2	3	4	5
3.1.3	Health & Safety plan & work programme prepared	U	DN	1	2	3	4	5
3.1.4	Finances & material credit secured	U	DN	1	2	3	4	5
3.1.5	Insurances & guarantees secured	U	DN	1	2	3	4	5
3.1.6	Compliance documents submitted	U	DN	1	2	3	4	5
3.1.7	Local suppliers identified	U	DN	1	2	3	4	5
3.1.8	Competent sub-contractors & personnel appointed	U	DN	1	2	3	4	5

4. On a scale of 1 (minor) to 5 (major), rate how do these factors affect funds management relative to the delivery of a project. (Please note the 'unsure' (U) and 'Does not' (DN) options)

	Factors affecting funds management relative to the delivery of a project	U	DN	Minor…….Major				
				1	2	3	4	5
	Financial management							
4.1	Contractor pays for plant & materials	U	DN	1	2	3	4	5
4.2	Contractor pays labourers	U	DN	1	2	3	4	5
4.3	Project finances successfully managed from inception to completion – profit made and project completed successfully and within budget.	U	DN	1	2	3	4	5
4.4	Project finances mismanaged from inception to completion – loss made and project incomplete or if completed, quality is compromised	U	DN	1	2	3	4	5

5. On a scale of 1 (minor) to 5 (major), rate how these construction processes affect emerging contractors relative to the delivery of a project. (Please note the 'unsure' (U) and 'Does not' (DN) options)

	Factors affecting construction processes relative to the delivery of a project	U	DN	Minor…….Major				
				1	2	3	4	5
	Construction processes							
5.1	Plant hired & material ordered	U	DN	1	2	3	4	5
5.2	Quality of work, materials, equipment checked	U	DN	1	2	3	4	5
5.3	Work specifications followed & work approved	U	DN	1	2	3	4	5
5.4	Site instructions issued & weekly site meetings held	U	DN	1	2	3	4	5
5.5	Supervision of subcontractors and labourers	U	DN	1	2	3	4	5
5.6	H & S monitored & adhered to	U	DN	1	2	3	4	5
5.7	Time & work programme closely monitored	U	DN	1	2	3	4	5
5.8	Payment for work done	U	DN	1	2	3	4	5
5.9	Weather & other delays catered for and properly documented	U	DN	1	2	3	4	5

Please record your details below to facilitate contacting you, in the event that a query should arise.

Please note that the information provided in this questionnaire will be treated in the strictest confidence.

ORGANISATION

_____

_____

ADDRESS _____

_____

_____

_____

CONTACTPERSON _____

PHONE _____

FAX _____

MOBILE _____

E-MAIL _____

Thank you for your contribution to the Exploration of Funds Management by Emerging Contractors.

Ms. A. A. Merana

Appendix 3

CONFERENCE PAPER