AN APPRAISAL OF PROCUREMENT CHALLENGES FACING EMERGING CONTRACTORS IN PUBLIC SECTOR PROJECTS IN SOUTH AFRICA

by

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ABSTRACT

Poor participation and performance of emerging contractors in public sector construction projects is currently an issue of major concern in South Africa (SA), as economic development relies mainly on the sustainability of small businesses. While the South African government has endeavoured to make provisions for the advancement of the emerging contractors through the regulatory framework and Section 217(i) of the constitution, earlier studies have revealed that the emerging contractors continue to face several procurement challenges. These procurement challenges have adversely impacted the growth and development of small contractors. Unfortunately, the available provisions in the constitution and the regulatory framework have not been able to adequately solve the problem. This has led to a high rate of small business failures in South Africa. These procurement challenges include late payments, poor contract management, poor cash flow management, the complexity of regulations, too much competition, political interference, and a lack of skills in pricing techniques, to mention a few. This study aimed to appraise the procurement challenges facing emerging contractors in public sector projects in South Africa with a view to developing strategies to mitigate the challenges experienced.

The study focused on CIDB-registered construction companies in Gauteng province under CIDB levels 4 and 5 registered as general building and civil engineering classified contractors. The study adhered to a quantitative explanatory approach. A survey questionnaire comprising structured questions relating to the study's objectives was drawn up and distributed to the participants. The data is presented using the tables while the analysis of the data was achieved through using the appropriate descriptive and inferential statistics to measure characteristics of the study population and to make inferences about the population from data set respectively. The study found that late payments, political interference, poorly managed cash flows, too much competition, and a lack of understanding of pricing techniques were the top five critical challenges facing the emerging contractors in the South African construction industry. Further investigation on the impacts of the identified challenges facing the emerging contractors in South Africa revealed that project cost and time overruns, lack of access to public sector contractors, loss of profits, blacklisting by creditors, liquidation, and abandoned projects negatively impact the success of the emerging contractors in South Africa. The study further identified potential measures to overcome the identified procurement challenges. These measures include: reviewing procurement policies for contractor development with emphasis

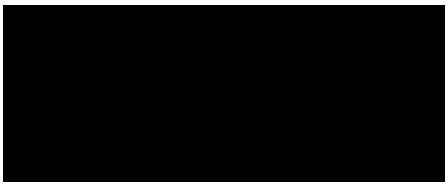
on business and management skills development programmes; access to finance be made easily accessible; contractors be trained to separate business operations from family operations, including proper cash flow management; skills development training specifically for small contractors; joint venture partnerships for emerging contractors to curb financial and administrative burdens and skills transfer; implementing early payment arrangements with the organs of state and ensuring timely payments from clients; breaking down bids into smaller projects; the provision of more and detailed information for bids during the tender stage; the relaxation of unnecessary bureaucratic procedures; the provision of tax holidays; and after care and follow-up training to be provided to ensure that the small contractors remain in business.

Based on these findings, impacts, and mitigation measures, the study recommends revising government policies regarding the payment of emerging contractors to address the challenge of late payments, thus prioritising timely payments for all emerging contractors and, where possible, establishing early payment arrangements; the training of emerging contractors and skills development be prioritised; and entry-level training for CIDB Level/Grade 1 contractors be implemented to upskill those emerging contractors.

Key words: Regulatory framework, small businesses, finance and cashflow, clients, government

DECLARATION

I, **Sibabalo Edmond Bangani**, solemnly declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other institution for similar or any other university for a similar or any other award of degree. I understand what is entailed in the plagiarism and am aware of the university research ethics and policies in this regard. Where someone else's research has been used, due acknowledgment has been given and referenced according to university requirements.



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DEDICATION

I would like to dedicate this work to our Father the Almighty God who has guided and given me strength throughout my study. This dissertation is further dedicated to my parents who without any academic knowledge background, have continuously supported me throughout my academic life and during this study. Whom ensured that I continue to receive better academic life to open my eyes and mind. Who have sacrificed all they had to ensure that I represent the achievement of dreams that they couldn’t achieve.

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All thanks to those who believed in the significance of the study and patiently provided support in fighting problems that exist in the field.

As Albert Einstein once said, *"The important thing is to not stop questioning. Curiosity has its own reason for existing*."

LIST OF PUBLICATIONS

CONFERENCES

E.S. Bangani and M.C. Mewomo. Procurement challenges in State owned construction projects in South Africa. 11th SACQSP international Research Conference. 19 September 2019, Johannesburg, South Africa (Published)

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LIST OF ABREVIATIONS

B-BBEE	Broad-Based Black Economic Empowerment
CDP	Contractor Development Programme
CE	Civil Engineering
CIDB	Construction Industry Development Board
DUT	Durban University of Technology
EME	Exempted Micro Enterprise
FIDIC	Fedderation Internationale Des Ingenieurs-Conseils
GB	General Building
GCC	General conditions of Contract
HDI	Historically Disadvantaged Individuals
JBCC	Joint Building Contracts Committee
M	Mean
MBSA	Master Builders South Africa
MS	Mean Score
n.d	No Date
NEC	New Engineering Contract
PAJA	Promotion of Administration Justice Act
PCA	Principal Component Analysis
PFMA	Public Finance Management Act

PPPFA	Preferential Procurement Policy Framework Act
PWC	PricewaterhouseCoopers
QSE	Qualifying Micro Enterprise
SA	South Africa
SD	Standard Deviation
SME	Small Medium Enterprises
SMME	Small Medium and Micro Enterprises
SPSS	Statistical Package for Social Science

CHAPTER ONE

1.0 GENERAL INTRODUCTION

1.1 Chapter overview

This chapter presents a general overview of the study. This section further details the background of the study, the problem statement, and further highlights the scope of the study. It also presents the research questions, aim and objectives, the research methodology that was employed during the study, the significance of the study, further outlines the structure of the study, and any limitations that were encountered during the study.

1.2 Background of the study

When the South African government transitioned to a democratic state in 1994, a need to constitutionally transform the economy of the country through procurement parameters was identified and constituted in South Africa's Constitution, Section 217. Section 217(i) of the Constitution of South Africa requires that an organ of state must acquire such goods and services under a system that is fair, equitable, transparent, competitive, and cost-effective. The constitution also gives flexibility to the national department to implement a procurement policy and a regulatory framework to aid in the allocation of contracts and the advancement of historically disadvantaged persons. Section 217 of the Constitution of South Africa has not designated a separate category for construction procurement; therefore, it is unclear whether it falls under services or goods. Along with Section 217 of the Constitution of South Africa, for the proper execution of construction procurement, the government of South Africa established a regulatory framework that governs how the procurement tasks must be executed. This regulatory framework includes, but is not limited to, the Public Finance Management Act (PFMA), Promotion of Administrative Justice Act (PAJA), Promotion of Equality and Prevention of Unfair Discrimination Act, Preferential Procurement Policy Framework Act (PPPFA), Construction Industry Development Board (CIDB) Act, Broad-based Black

Economic Empowerment Act (BBBEE), Local Government Municipal Act, Competition Act, and Prevention and Combating of Corrupt Activities Act (Ambe *et al.* 2012).

The construction industry is vital for any country's economic and social development, as it provides essential infrastructure and buildings for human activities (Chuai *et al.* 2020). Procurement of construction works by the organs of state amounts to an estimated expenditure of R220 billion per year and also contributes about 1.4 million jobs, which is the backbone of economic growth (South Africa, Construction Industry Development Board, 2017). According to Booi (2013), the construction industry remains a vital contributor to job creation and the development of the country's economy, even though it is perceived as the most dishonest player. According to Balogun *et al.'s* (2016) study, the contribution of emerging contractors to economic and social development, creation of job and income generation has been recognised around the world as vital.

Despite the government's efforts to facilitate participation, there is significant concern over the poor participation and performance of emerging contractors in public sector construction projects. This issue has been noted as one of the major concerns in South Africa, as it is a measure of economic development and job creation in South Africa (Mohlala, 2015). Shwala's (2018) study reaffirms that emerging contractors are facing challenges related to the procurement and execution of public sector projects, which in turn hinder their ranking at the next level of the Construction Industry Development Board's (CIDB) register of contractors. According to Mvubu and Thwala (2008), emerging contractors are major contributors to the economy of South Africa through job creation for entry-level skills. For these sets of contractors to thrive, there is a need for better accessibility to construction contracts.

Various studies found that emerging contractors face a multitude of challenges when seeking opportunities from government organs, including financial constraints, the award of high-value

tenders to a single entity, complex procurement regulations, administrative burden, insufficient publicised information for tendering, the choice of tender procedures and qualifying criteria, late payments from the government departments or organs of state, the high price of tender documents, limited response time to bid, poorly managed cash flow, a lack of skills, limited access to funding, short duration of work, complex tendering procedures, lack of equipment, uncertainties regarding the prices of materials and supplies.

According to the CIDB (2022) report, the board indicated that the decrease in work opportunities for black-and-women owned companies is a threat to transformation as black-owned contractors which make about 56% of the register of contractors only accessed 33% of the work from public sector. Considering that the economic development of any nation relies significantly on the sustainability of small businesses, this study seeks to unbundle those challenges and further find mitigation measures available to better the emerging contractors' participation in this economic sector.

1.3 Problem statement

The ongoing poor participation of emerging contractors in the economic mainstream has led to some emerging contractors not progressing to a higher level of CIDB grading and thus not fully participating in the economy (Balogun *et al.* 2016). This is due to the various challenges that those emerging contractors face on a daily basis in their operations. According to Govender's 2017 study, the CIDB Register of Contractors (RoC) reported that approximately 85% of contractors are still listed as Grade 1 in their register of contractors in South Africa, which is a major concern as very few emerging contractors have moved to the next level of the CIDB ranking table despite the government's interventions in introducing mechanisms for the advancement of those contractors. This study therefore presents an appraisal and assessment of procurement challenges affecting emerging contractors within the construction industry in

South Africa to understand why very few emerging contractors make it to higher rankings on the CIDB table.

According to Mohlala (2015), the development of the economy can be measured by the physical development of infrastructure, which contributes to job creation and is mainly offered by emerging civil engineering and general building contractors in the construction sector. Similar to any other public procurement activity, construction public procurement involves the public sector acquiring construction and infrastructural services from the private sector. According to Thwala (2008), among other challenges faced by emerging contractors is access to projects, which is hindered by the administrative processes that make it difficult for small contractors to secure projects. Despite efforts put in place by the government through the implementation of economic advancement for emerging contractors, divergent challenges continue to block access for emerging contractors to public sector construction projects due to various reasons. These challenges have not only hindered the emerging contractors' success in making it to the next CIDB grading but have in many instances engendered underdevelopment and failures for these emerging contractors. One of the challenges limiting emerging contractors from fully participating in the mainstream economy is the shortage of finance (Balogun *et al.* 2016). The impact caused by those challenges cannot be disregarded, as most of the emerging contractors end up being liquidated (Jardine, 2013).

This study therefore seeks to investigate and explore procurement challenges facing emerging contractors in the South African construction industry, assess the impact of these challenges, determine the mitigating measures, and finally suggest strategies to improve emerging contractors' access to public sector construction projects in South Africa.

1.4 Aim of the study

This study aims to appraise the procurement challenges facing emerging contractors in public sector projects in South Africa to develop strategies to mitigate the challenges experienced.

1.5 Research questions

The following research questions served as a guide during this research work:

1. What are available tender methods and procedures that emerging contractors undertake to bid for public sector contracts in South Africa?
2. What procurement challenges are facing emerging contractors in public sector construction projects?
3. What are the impacts of the procurement challenges for the emerging contractors in construction project performance?
4. What measures are available to mitigate procurement challenges experienced by emerging contractors in procuring public sector construction projects?

1.6 Objectives of the study

In order to achieve the aim of this study through the guidance of the above research questions, the study encompasses the following specific objectives:

1. To assess the available tendering types and procedures undertaken by the emerging contractors in bidding for public sector contracts;
2. To determine the procurement challenges experienced by emerging contractors in public sector construction project procurement;
3. To assess the impacts of the procurement challenges for the emerging contractors in construction project performance; and

4. To identify the measures to mitigate procurement challenges experienced by emerging contractors in procuring construction projects.

1.7 Significance of the study

During the conduct of this study, the researcher realised that even though there is numerous studies conducted in this field those challenges continue to persist, which is evidence of the existence of some gaps. The significance of this study is to acquire and add new knowledge to this field of research. This will further help policy makers and construction industry stakeholders to identify the extent of the problems and/or challenges faced by emerging contractors and ways to reduce or mitigate them. It will also help other researchers do further research should there be any gaps that still exist in this field. This study will help emerging contractors understand the processes available to access public sector projects, while, on the other hand, it will help policy makers understand the challenges facing emerging contractors so they can review their policies and relax bearers where they exist. The study will further ensure that by addressing the challenges experienced by the emerging contractors, participation in the economy by the small contractors will increase vastly, which will result in more job creation and the upliftment of small businesses. The study will identify mitigative measures that can be used by emerging contractors to sustain their businesses in the construction industry. Thus, the finding will guide both emerging contractors who are already in the construction business and those planning to enter the construction market.

1.8 Research methodology

Research methodology systematically that demonstrates how researchers conduct a study to solve a problem. This process involves outlining the research methods, designs, sample selections, techniques, data collection and analysis, and hypothesis testing (Patel and Patel, 2019). In order to address the questions and achieve the aims and objectives of the study, the

researcher used a quantitative approach where a questionnaire survey was distributed to test the relevance of the secondary data, and the results were analysed.

1.9 Scope of the study and delimitations

The study was limited to emerging contractors in General Building and Civil Engineering, specifically those listed in the CIDB register of contractors under levels 4 and 5 in the province of Gauteng in South Africa. Gauteng province was selected as the research location because it has been identified as the province with the highest population and the highest level of construction activities in South Africa.

1.10 Motivation of the study

It is a great concern that even though the government has been trying to assist the emerging contractors, they continue to fail due to various factors and challenges. Previous studies have endeavoured to identify and discuss those challenges and further propose some recommended solutions, but the problem still prevails. Through the structured questionnaire issued to respondents, it is apparent that those challenges continue to persist as they still face late payments from the state, a lack of access to finance, not being included in the training for their development, and continuous political interference in the industry. The result of the study will provide stakeholders and policy makers in the construction industry with the necessary information to assist in putting together the mechanisms necessary to assist the emerging contractors who are currently affected by the challenges discussed in this study.

1.11 Ethical consideration

The study was conducted in accordance with the ethical standards set by the university. The researcher attended an online research ethics evaluation training in August 2019 and was

awarded the certificate of attendance. According to Allen's 1990 study (cited in Bowen *et al.* 2007:632) ethics is defined as a moral principle that governs the conduct of individuals; such individuals must be able to identify what is wrong and what is right. The researcher informed the respondents about their choice of participating in the study through a cover letter that accompanied the questionnaire. Respondents responded anonymously, ensuring their identities were protected. Respondents were briefed about the purpose of the study, and they participated voluntarily.

1.12 Structure of the Study Chapters

This research is presented in six chapters. An abstract, table of contents, and lists of tables and figures precede the chapters to give the reader an overview of the study for better guidance.

Chapter 1: Introduction

This section gives the background of the study and the problem statement. The chapter further describes the aim and objectives, including the research questions, scope, and significance of the study. The chapter further provides a brief outline of the research methodology and concludes with the structure of the thesis.

Chapter 2: Literature review

This chapter extensively reviews and discusses the literature in the form of previous studies that have been carried out in this field of research. The research objectives are discussed using the previous studies and all literature interrelated to the objectives, which provides and examines all the gaps in the studies that have been carried out.

Chapter 3: Research Methodology

This chapter details the method employed in the collection of primary data. Furthermore, it provides an extensive overview of how the research has been conducted and the rationale

behind the sampling and population selection. Lastly, the chapter details the data analysis methods and procedures.

Chapter 4: Results and Data Analysis, and Discussion of Findings

This chapter presents a comprehensive summary of the data obtained from the field and the outcome of the participants' contributions to the research, later on discusses the findings from the survey and data analysis. Argumentative analysis against the literature is discussed in-depth, and the researcher's opinion based on the data collected is drawn. The chapter further gives some statistical analysis of all that data in comparison to the total number of responses received. Both descriptive and inferential statistics were reported in this chapter. The chapter finally reported the reliability of the research findings.

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Chapter 5: Summary, conclusion and recommendations

This chapter presents a conclusion and suggests recommendations for a way forward to address the issue under consideration.

1.13 Conclusion

This chapter presented an overview of the various elements of the study. The background of the study, problem statement, aim and objectives, research questions, brief methodology, and structure of the study were discussed. This study aimed at assessing and exploring those challenges and finding any mitigating measures possible to assist in ensuring the advancement of emerging contractors for public sector construction projects.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This section explores an extensive literature review on the procurement challenges facing emerging contractors in accessing and delivering public sector construction projects in South Africa. The identified variables were derived from published empirical studies and encompass an examination of the tendering methods and procurement processes. This section further discusses the procurement challenges experienced by the emerging contractors, examines the impacts of the procurement challenges for the emerging contractors on construction project performance and the proposes measures to mitigate procurement challenges experienced by emerging contractors in procuring construction projects.

2.2 Emerging contractors in South Africa

2.2.1 Overview of emerging contractors

The construction industry has a significant impact on national markets and economies (Sweis *et al.* 2014). In order to understand which contractor falls under the category of "emerging contractors", it is important to first give an overview of who is an emerging contractor.

The South African construction industry has, in recent years, experienced an explosion in the myriad of emerging contractors due to the metamorphosis of the industry undergoing transformation through the advancement of historically disadvantaged individuals by ensuring their participation in the economy from which they were previously excluded (Martin and Root 2010). Through this advancement, emerging contractors are mainly comprised of historically disadvantaged owners. Before one takes a detailed look at the challenges facing emerging contractors, it is important to first understand who falls under the category of "emerging contractors". According to Govender's (2017) study, emerging contractors in the construction

industry are the contractors at the entry-level of the industry and are small companies. These companies are also defined as enterprises owned, overseen, and administered by historically disadvantaged persons. They were established to overcome business hindrance arising from the historical legacy of apartheid (Govender 2017). According to Eyiah (2001), there is no general and/or single definition of what constitutes a small business; definitions differ from country to country depending on their level of economic development. According to Muzondo and McCutcheon (2018), emerging contractors are also termed small medium and micro enterprises (SMMEs) in the South African context. Therefore, in the South African context, an emerging contractor can be defined as a person or organisation that is owned, overseen and administered by historically or previously disadvantaged individuals (HDI) (CIDB, 2011b). The Construction Industry Development Board (CIDB) has a register of construction companies in South Africa, categorised according to their level of capacity and capability in delivering construction services (CIDB 2019). In the year 2019, the Department of Public Works issued a notice of adjustment to contractor grading as seen in Table 2.1.

Table 2. 1:CIDB Tender Value Range Adjustment.

CIDB Grade	Current (Tender Value Range)	Proposed Adjustment (Tender value Range)
1	200 000	500 000
2	650 000	1 000 000
3	2 000 000	3 000 000
4	4 000 000	6 000 00
5	6 500 000	10 000 00
6	13 000 000	20 000 00
7	40 000 00	60 000 000
8	130 000 000	200 000 00
9	No limit	N/A

Source: Department of Public Works, Notice 357 (2019)

According to the CIBD article titled "National Contractor Development Programme" (n.d.), 11% of registered active contractors, falling within CIDB levels 7 to 9, dominate 80% of government infrastructure projects. Emerging contractors constitute more than 80% of CIDB-registered contractors. Sitharam and Huque (2016) defined emerging businesses as "small medium enterprises" (SME) measured by their turnover, asset value, and the number of people they employ. This was confirmed by Mohlala (2015), who argued that there is no direct definition of emerging contractors; however, they can be defined as a person or enterprise owned by historically disadvantaged individuals (HDI), and those can be termed "small scale contractors". Furthermore, in the South African context, these contractors are also referred to as SMEs.

From the above, one can summarise the "emerging contractors" term as small-scale contractors at the entry level of the industry, measured by their capacity, capability, financial ability, CIDB ranking and involvement in the industry. These contractors are mainly characterised by the nature and size of the work they do, which ranges from CIDB grades 1 to 5. These contractors are further known as historically disadvantaged individuals who were previously excluded from the economy by the apartheid government. Like any other construction business, they bid and procure their work through the available forms of tendering, which are discussed in the

paragraphs below. According to Thwala *et al.* (2009) study, SMEs are major features of the economic landscape in all developing countries, and the South African government ensures that they have access to the construction sector regardless of the challenges. Thwala and Mvubu's study (2008) found that the emerging contractors can be distinguished from the other generic contractors by variables such as size of annual turnover, capacity and capability. Their challenges can be distinguished from those that affect medium-sized contractors.

2.2.2 Assessment of bidding process for contractors in South Africa

Before we delving into the tendering or bidding processes in the South African context, it is essential to examine the policies that predominantly administer the tendering process in the South African sphere of the organs of state, which include the Public Finance Management Act No. 1 of 1999, Promotion of Administrative Justice Act No. 3 of 2000, Promotion of Equality and the Prevention of Unfair Discrimination Act No. 4 of 2000, Construction Industry Development Board Act No. 38 of 2000, Broad-Based Black Economic Empowerment Act No. 53 of 2003, Local Government: Municipal Finance Management Act No. 56 of 2003, and Prevention and Combating of Corrupt Activities Act No. 12 of 2004 (Watermeyer, 2011). According to Ambe *et al.* (2012), there are a number of regulations that govern procurement management in the public sector, with the preferential procurement policy framework being dominant, which establishes the manner in which the procurement process is to be followed.

The tender process is an inseparable step in construction projects, mainly in the public sector, and, from the other point of view, it is one of the crucial elements of the core business of construction contractors (Faraji *et al.* 2022). It is therefore a general knowledge that construction work in South Africa is accessed by the contractors through the bidding processes, which vary from open tender and selected tender to negotiated tender. According to Ngobeni's (2011) study, bidding is the process of acquiring goods and services by the public sector from

the private sector through an invitation of bidders, evaluation and award of tenders to provide those services. When an organ of state intends to have a project executed, they normally go through this bidding process. The tender process allows the public sector to invite and request bids from suitably qualified contractors (Govender 2017). The minimum qualifying criterion is drawn and included in the tender documents to ensure that a suitably qualified contractor or service provider is sourced. In terms of the available framework, the preferential procurement policy framework regulations allow the organs of state to procure goods and services in an acceptable manner, provided that the process is fair, equitable, cost-effective, transparent and competitive. According to CIDB best practice guidelines (2007) on "Evaluating quality in tender submissions", the bidding process can be conducted in any of the following ways:

- Open tendering: the bids are sent out to interested bidders through the public domain; normally, a briefing meeting is included in the bid for further clarifications; thereafter, the bidding process is followed. Received tenders are evaluated based on price and preference, including any specific goals included in the tender documents.
- Selective tendering/nominated procurement: these methods are mainly used where the work is of specialist nature. Selective bidders are invited to bid for work through direct invitation, and then the tendering procedure begins with submission. Tenderers who satisfy the prescribed criteria are admitted to an electronic data base. They are then invited to submit their bids.
- Negotiated tendering: this type of bid is considered mainly where a relationship between the client and the contractor already exists and also where there is limited time to render the service.

In most cases, the organs of state follow the open tendering process or procedure. According to the CIBD report (2017), contractors can also access work through subcontracting the procurement procedures through the National Treasury thresholds for local expenditures.

Before looking at the challenges that are facing emerging contractors in procuring construction projects, it is important to first unpack the procurement processes and procedures available in the South African construction industry. Like any other procurement activity, construction procurement is predominantly done through a system of tendering (Ngobeni 2011).

However, unlike any other procurement process, the construction procurement process differs significantly from other procurement processes. Under normal circumstances and in most cases, it is traditionally done in two stages. Procurement of construction works is done through a traditional approach, in which case the design team is first appointed to do designs and production of construction information in the form of drawings, specifications and bills of quantities for tendering purposes (Mothobiso 2016). The design team normally comprises, depending on the complexity of the project, project managers, architects, engineers, quantity surveyors, attorneys, and safety officers. In most cases, the organs of state do not readily possess the skills required in these fields, so they would outsource them. Similar to any procurement activity, these services are procured through tendering in terms of the regulatory framework. According to Kadefors (2004), the lowest bidder is appointed, although in South Africa, there are also preferential considerations. In cases where the estimated value of a construction project is known, the tariff fee scales are used, where pricing will be determined through discounting of tariff fees issued by the industry's regulating councils such as the South African Council for Quantity Surveying Profession, the South African Council for Architectural Profession, and the South African Council for Project and Construction

Management Profession (Mothobiso 2016). After all careful considerations as required by PPPFA, the highest point-scoring bidder is appointed for each service tendered.

After the professional team has been established, the construction contractor is then procured. The appointed consultants, according to their disciplines, prepare tender documentation for the procurement of construction contractor in which case, such documents will be advertised in the public domain or newspapers for a duration as endorsed by the Construction Industry Development Board and National Treasury. The bidding entities use the design information issued to them for price compilation purposes. On receipt of the bid documents from the bidding contractors, the tenders are evaluated using criteria stated in the tender documents and the highest-point scoring bidder is appointed in terms of the PPPFA (Preferential Procurement Policy Framework Act). According to Taylor (2019), the process above might seem easier and more reasonable, but it is exactly where the problem starts.

Preferential Procurement Policy Framework Regulations (2017) require that, during the evaluation of tenders, Broad-Based Black Economic Empowerment (B-BBEE) scoring be applied, determined by the threshold based on the value of the project. For projects with an estimated tender value not exceeding R50 Million, the 80/20 (80 = points for price and 20 = points) B-BBEE scoring system applies, whereas for projects with a value exceeding R50 million, the 90/10 scoring system applies. According to the B-BBEE regulations, a bidder may be awarded a score or points based on their B-BBEE level as determined and issued by an accredited evaluating body.

Table 2. 2: B-BBEE Scoring and levels – 80/20

B-BBEE Status Level of Contributor	No. of Points
1	20
2	18
3	16
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

Source: National Treasury (2016)

Table 2. 3: B-BBEE Scoring and levels – 90/10

B-BBEE Status Level of Contributor	No. of Points
1	10
2	9
3	8
4	5
5	4
6	3
7	2
8	1
Non-compliant contributor	0

Source: National Treasury (2016)

According to the PWC *et al.*'s (2014), study on SMEs' Access to Public Procurement Markets, SMMEs can access public procurement markets in various ways, which include direct bidding for an advertised project, joint bidding/venture (JV), and subcontracting. The subcontracting model is one of the determining factors of the construction industry, as, in many countries, the industry relies heavily on the subcontracting model of the project organisation (Martin and Benson, 2021). In this chapter, the researcher explored the challenges experienced by emerging contractors while trying to gain access to public procurement markets. CIDB (2013) further reaffirmed that emerging contractors can access public sector contracts through subcontracting from main contractors. Their engagement in those subcontracting arrangements can be through

domestic subcontracting, selected subcontracting, and/or nominated subcontracting (CIDB 2013).

Based on the above literature, there are many ways in which emerging contractors can access and bid for public sector projects, but challenges continue to exist.

2.2.3 Challenges faced by emerging contractors in public sector construction projects

Various studies have been conducted to assess the reasons behind the failure of small contractors (Govender, 2017; Mohlala, 2018). Job creation and economic development depends majorly on success of small and/or emerging contractors, as their contribution to the employment rate in South Africa equates to approximately 67% of employment opportunities (Muzondo and McCutcheon, 2018). According to Nemaenzhe (2010), 50–90% of small businesses fail; a report shows that 32% of those fail during the first seven years. This is a clear indication of the impact caused by the existence of those challenges. Ability to perform and deliver projects is one of the most common factors affecting the success of emerging contractors, as the emerging contractors tend fail to perform and deliver projects on time (Sweis *et al.* 2014). In addition, a lack of understanding of contracts by emerging contractors is one of the factors that result to failure. According to Sweis *et al.* (2014), a contract is a legally binding agreement between two parties in exchange for something of value; therefore, completion of projects and administration of time overruns are also administered in the agreement.

Emerging contractors in the South African construction industry normally start at the bottom end of the general building market (Mvubu and Thwala, 2008). Due to various challenges encountered by those contractors along the journey, they often fail to climb up to the next level. This was seconded by Govender's (2017) study, which added that undeveloped countries will continue to see many emerging contractors fail every day due to those challenges. Small businesses often encounter substantial procurement and contract administration hurdles when

vying for public sector contracts in most developing and developed countries (Kasper and Puddephalt, 2012).

Mvubu and Thwala's (2008), and PWC *et al.'s* (2014) studies on SMEs' access to public procurement markets found that emerging contractors majorly faced the following challenges: financial constraints and the single award of high-value tenders create a financial burden on small contractors as those projects become financially unsustainable; further challenges include poor management skills and business skills (Shwala 2018); complexity of procurement regulations and administrative burden; insufficient publicised information for tendering; tender procedure chosen and qualifying criteria; late payments from the government; price of the tender document and limited time to respond to bids and poorly managed cash flow resulting in hostile relationships with suppliers.

Ntuli and Allopi (2013) found that, amongst other challenges, operating within a highly unpredictable environment, estimating prices for an unforeseeable future, adopting a competitive tendering approach, and over-capacitated markets because of low barriers of entry are some of the distinct features that make companies prone to failure. Govender's (2017) study concurred with the above challenges and added that further challenges affecting emerging contractors are: lack of skills, access to funding, short nature of work, complex tendering procedures, lack of equipment, and uncertainties about the price of plant and material.

Thwala and Mvubu (2008) added that the requirement for performance securities through guarantees and bonds also leads to cash flow problems. Insufficient access to external funding models for emerging contractors at the critical stages of the transformation of micro enterprises deters the enterprises with potential growth from expanding; equally, the lack of effective management during the early stages of the project is a major cause of failure for the emerging contractors (Thwala and Phaladi, 2009). According to Thwala and Mvubu (2008), access to

finance by emerging contractors is one of the major constraints faced by emerging contractors to access public sector projects, and the banks are reluctant to provide finance to those contractors unless they are willing to pay exorbitant interest rates.

Emerging contractors' inability to recruit skilled labour is one of the major reasons for their failures. According to Mohlala (2015), the shortage of technical expertise among the emerging contractors also affects their scoring in winning contracts during competency evaluations. Most of the small contractors do not have adequate construction skills to better manage their businesses, and in most cases, they also end up employing inexperienced individuals to help with their day-to-day management activities (Shwala, 2018). Amoah *et al.* (2021) concurred that emerging contractors do not have experienced and skilled labour and invest very little in staff training .

In order to act in accordance with the requirements of Section 217 of the Constitution, the government of South Africa established a legislative procurement framework, including regulations that assist in meeting the requirements of Section 217 of the Constitution. Ngobeni's (2011) study found that 87% of participants strongly agreed that the current procurement legislation is complex to understand and suggested that there should be a single national legislative guide as endorsed by Section 76(4)(c) of the PFMA.

According to PWC *et al.* (2014), unambiguity and sufficiency in information published during the tendering stage are of outmost importance. Insufficient publication of prior information for tendering is one of the hurdles that hinders the success of SMEs as this does not allow them to price for all work requirements during the tender stage. In addition, the Preferential Procurement Policy Framework Act Regulations (2017) state that the organ of state determines the functionality requirements for tendering. Functionality requirements become the measuring

tool for qualifying criteria. In the case where the project is an open tender, the organ of state would determine the qualifying criteria depending on the complexity of the project.

Also, Mohlala (2015) stated that technical skills, which the emerging contractors mostly lack, usually form part of the qualifying criteria in contractor selection process. PWC *et al.*'s (2014) study on SMEs' access to public procurement markets argued that, regardless of the qualifying criteria applied, whether it be the "most economically advantageous" or "lowest bid" criterion, they do not affect the access of SMEs to public procurement markets. However, Mohlala's (2015) study was reaffirmed by Shwala (2018), where she found that in the South African construction markets, qualifying and evaluation criteria employed remain one of the hurdles that hinder access by emerging contractors to public contracts.

A healthy cash flow is the pillar of a project's success. Studies by Thwala and Mvubu (2008); Thwala and Phaladi (2009); Mohlala (2015); and Shwala (2018), all concurred that late receipt of payments from organs of state remains one of the challenges that majorly affect the project's success and the emerging contractor's performance on site. According to Shwala (2018), there is a mechanism in place on standard construction contracts such as the Joint Building Contracts Committee (JBCC) series, but emerging contractors are still not getting paid on time.

According to Construction Industry Development Board Act 38 of 2000 (CIDB) Act 38 of 2000 Regulations (2019), the organ of state should at least give response time of not less than 21 calendar days from the date of publication of an advertisement. Irrespective, there is still insufficient time to find work and respond to bids (Thwala and Mvubu 2008). Maintaining good records with suppliers and avoiding blacklisting is one of the most important obligations of consumers. However, due to late and/or non-payment of suppliers by emerging contractors, some have lost access to credit facilities from their suppliers (Thwala and Mvubu 2008). The study further found that a significant number of the emerging contractors ultimately engage in

cash-on-delivery (COD) arrangements, primarily due to non-compliance with the payment terms.

Various authors have unanimously agreed that a variety of challenges do exist that hinder the success of small contractors as seen in Table 2. 4.

Table 2. 4: Challenges experienced by emerging contractors.

Item No.	Challenges	Source
1	Lack or poor management skills	Ncwadi and Dingalazana, 2005
2	Lack of access to finance	Govender, 2017; Ncwadi and Dingalazana, 2005; Balogun *et al.* 2016
3	Poor record keeping	Kasper and Puddephalt, 2012
4	One-man-show or sole management	Thwala and Phaladi, 2009
5	Lack of understanding of pricing techniques	Shwala 2018
6	Late payments by government	Govender, 2017; Thwala and Mvubu, 2008;
7	Poorly managed cashflow	Ncwadi and Dingalazana, 2005
8	Tender procedure too complicated	Govender, 2017
9	Political interference	Shwala, 2018
10	Complexity of procurement regulations and their difficulty in implementation	Ngobeni, 2011
11	Overall contract value for single award	PWC Report on SMME's access to public procurement markets and aggregation of demand in the EU, 2014
12	Type of contract	PWC Report on SMME's access to public procurement markets and aggregation of demand in the EU, 2014
13	Type of procurer	PWC Report on SMME's access to public procurement markets and aggregation of demand in the EU, 2014

Item No.	Challenges	Source
14	The publication of prior information	PWC Report on SMME's access to public procurement markets and aggregation of demand in the EU, 2014
15	Tender procedure chosen	Mohlala, 2015
16	Selection criteria used	PWC Report on SMME's access to public procurement markets and aggregation of demand in the EU, 2014
17	Price of tender document	Govender, 2017
18	Too much competition	Govender, 2017
19	Insufficient bidding information	Govender, 2017
20	Administrative burden	Ngobeni, 2011
21	Insufficient of limited time to complete bids.	Govender, 2017

Source: Authors compilation (2023)

From the foregoing, these challenges may have a negative effect, which might in turn result to project delays, blacklisting, loss of profits and cost overruns, abandoned projects, liquidation and a total lack of access to public sector contracts aa well as affect their performance in delivering projects. Consequently, this study seeks to determine the challenges facing emerging contractors in South Africa and suggest strategies to promote their development and better access to public sector construction projects.

2.2.4 Impact of procurement challenges for the emerging contractors in construction project performance

A project completed within a balanced triangle of evaluation, within agreed time, budget and set quality, as key performance indicators, is deemed successful (Sibiya *et al.* n.d.). According to CIDB's (2013) study on subcontracting through main contractors as a means for emerging contractors to access public sector projects, the study found that poor working relationships are

not in the interest of main contractors. Key factors influencing the main contractor's choice of subcontractors include financial capability, a good track record, construction management systems, compliance with legislative requirements and B-BBEE statuses (CIDB 2013). Should the emerging contractor who is willing to get subcontract work under the main contractor be unable to prove his eligibility in the form of financial capabilities, track record, management systems and compliance with legislative requirements, such contractor will not be able to be subcontracted under the main contractor.

Loss of profit, project cost overruns, time overruns, abandoned projects, liquidation, blacklisting of contractors by suppliers, and inability to have access to finance are major impacts caused by challenges faced by emerging contractors (Thala and Mvubu, 2008; Thwala and Phaladi, 2009; and Shwala, 2018).According to Govender (2017), these challenges avert the growth and development of emerging contractors, which consequently affect their upscaling at the CIDB level. The triumph of emerging contractors is mainly dependent on healthy cash flow management systems. Financial constraints, resulting from either financial mismanagement or non-payment by clients, lead to abandonment of most projects (Mohlala 2015). According to Mohlala's (2015) study, emerging contractors that are run by technically qualified owners are more likely to succeed than those run by unqualified ones, as they are more likely to make profit. Shwala (2018) found that hostile relationships with suppliers as a result of non-payment by clients and/or non-payment by contractors to suppliers have also led to blacklisting and hindered the success of those emerging contractors. In emphasising the importance of accurate price estimation, emerging contractors, unlike major contractors, do not always have a healthy balance sheet that are able to carry project financial overruns, as they mostly leave a hand-to-mouth dynamic (Jardin, 2013). With the acknowledgement of the existence of challenges and negative impacts, the success of emerging contractors is highly hindered and need innovative solutions.

2.2.5 Measures available to mitigate the challenges experienced by emerging contractors

Even after the transformation of South Africa into a democratic state, emerging contractors seem to continue to face challenges in the construction industry and their trading remains unsustainable. Emerging contractors remain job drivers in the industry through the employment of unskilled and skilled employees in the sector. Thwala and Phaladi (2009) suggested that in addressing the challenges faced by emerging contractors, it is critical for the government to review policies with regards to contractor development programmes (CPD) to ensure that government contributes to the success of small businesses. The study further recommended that business skills and management skills need to be emphasised in contractor development, and that access to finance be made fashionable for the development of small businesses through already available financial structures. Also, the management of cash flow and the separation of family and business operations should be practised by small businesses.

Mohlala (2015) suggested that the training of contractors can play a significant role in the attempt to eliminate challenges related to a lack of skills. Govender (2017) added that joint venture approaches for major projects can curb financial and administrative burdens and ensure shared skill sets. Shwala's (2018) study found that if clients and the government practice timeous payment of contractors and have some special early payment arrangement, it would diminish the cash flow issues related to the late payments. Breaking down bids into small bids in value, providing more and better information for bids, providing sufficient time for the completion of bids, alleviating too much administrative burden, making payments on time, and allowing flexibility in procurement are among the measures that can help small businesses access the market and succeed (PWC *et al.* 2014).

Table 2. 5: Measures to mitigate challenges experienced by emerging contractors

Item No.	Mitigative measure	Source
1	Government to review policies in relation to contractor development programmes (CDP)	(Thwala and Phaladi, 2009)
2	Emphasis on business and management skills during contractor development programmes	(Thwala and Phaladi, 2009)
3	Access to finance be more fashionable for SMME's	(Thwala and Phaladi, 2009)
4	Contractors to practice cashflow management including learning to separate private life from business operations	(Thwala and Phaladi, 2009)
5	Training of small contractors for skills development	(Mohala, 2015)
6	Contractors to engage in joint venture arrangements for major projects to curb financial and administrative burdens and skills transfer	(Govender, 2017)
7	Government to practice timeous payments to contractors and arrange early payments for emerging contractors	(Shwala, 2018), (PWC *et al.* 2014)
8	Providing sufficient time for bids completion	(PWC *et al.* 2014)
9	Alleviating too much administrative burden in bids	(PWC *et al.* 201)

Source: Authors compilation (2023)

2.3 International construction industry – Zambia, Nigeria and Ghana

2.3.1 Overview of an emerging contractor or SME in other developing neighbouring countries

As is the case in the South African context, SMEs are the main contributors to the developing countries' economies and are becoming increasingly important in terms of employment creation, wealth creation and development innovation. Over a period of time, SMEs in the construction industry have become the main contributors to the economy through job creation opportunities; hence, they have received a considerable amount of attention from academicians, politicians and various institutions (Phiri, 2020; Aigbavboa *et al.,* 2018). In Zambia, SMEs contribute to about 88% of employment, while large contractors contribute only 7% (Aibavboa *et al.*, 2018).

According to Ali, *et al.* (2020) study, in Nigeria, emerging contractors are described as small-scale construction firms that hardly employ more than 25 workers with virtually no construction plant or equipment. The study by Aigbavboa *et al.* (2018) on critical factors clogging the development of SMMES in the construction industry in Lusaka, Zambia, indicated that most SMMEs are small, home-based, individual or family enterprises that operate at very low capacity due to various challenges, which include securing continuous contracts. Phiri (2020) argued that there is no specific definition of what an SME is; however, the country in which the company operates provides a specific definition of SMEs depending on a number of characteristics, which include, among others, annual sales, the number of employees, the amount of assets owned by the company, market capitalisation, or any combination thereof.

2.3.2 Challenges faced by emerging contractors in other developing neighbouring countries

According to Phiri (2020), most contractors registered with the National Construction Council (NCC) in Zambia depend mainly on government contracts, while some SME contractors depend on subcontracting opportunities facilitated by large-scale contractors engaged in

government contractors. In the process of procuring work and executing such work, those contractors face various challenges that hinder them from reaching the next level.

According to studies conducted by Aigbavboa *et al.* (2018), Arthur-Aidoo *et al.* (2016), Ali *et al.* (2020) and Phiri (2020) on small-scale or emerging contractors in Zambia, Ghana and Nigeria, a number of challenges are faced by small contractors detailed and grouped as per below.

Table 2. 6: Challenges affecting emerging contractors categorised in barriers

Item No.	Barrier category	Barrier	Source
1	Financial barriers	(a) In ability to secure and maintain credit facilities, lack of external dept and equity capital	Arthur-Aidoo *et al*., 2016
		(b) Lack of collateral leading to the banks being unable to provide funding	Arthur-Aidoo *et al.* (2016)
		(c) Cost of application to obtain a certificate of operation in Zambia;	Aigbavboa *et al.* (2018)
		(d) Poor financial controls	Ali et al. (2020)
2	Institutional barriers	(a) Complex laws and regulations	Arthur-Aidoo *et al.* (2016)
		(b) Unsuitable tax systems – small scale contractors get taxed same way as those large organisations	Arthur-Aidoo *et al.* (2016)
		(c) Stringent requirements to qualify to the next level in terms of NCC register of contractors in Zambia	Aigbavboa *et al.* (2018)

Item No.	Barrier category	Barrier	Source
3	Social barriers	(a) Political interference in procurement and management of work	Arthur-Aidoo *et al.* (2016)
		(b) Corruption practices	Arthur-Aidoo *et al.* (2016)
		(d) Skills shortages	Arthur-Aidoo *et al.* (2016) Aigbavboa *et al.* (2018)
4	Inter-organisational barriers	(a) Poor financial controls	Ali *et al.* (2020) Aigbavboa *et al.* (2018)
		(b) Poor management of projects	Ali *et al.* (2020) Aigbavboa *et al.* (2018)
		(c) Lack of experience in preparation of tender documents and the know-how on management of projects	Ali *et al.* (2020)
		(d) Poor accounting practices knowledge	Ali *et al.* (2020)

Source: Author's compilation (2023)

From the above, it is evident that the challenges facing emerging contractors are similar from one country to another and closely resemble those that are facing the South African construction market.

2.3.3 Measures to mitigate challenges facing emerging contractors in developing countries

According to studies conducted by Aigbavboa *et al.* (2018), Arthur-Aidoo *et al.* (2016), Ali *et al.* (2020), and Phiri (2020), on small-scale or emerging contractors in Zambia, Ghana and Nigeria recommended the following measures be employed to minimise or eliminate those challenges facing SME's:

- The government should relax laws pertaining to the procurement of work by small contractors;
- The government should give tax holidays to small-scale contractors;
- After-care and follow-up training should be provided to SMEs to ensure they remain in business; and
- A proper monitoring and evaluation system should be provided.

Table 2. 7: Measures to mitigate challenges experienced by emerging contractors in other developing countries

Item No.	Mitigative measure	Source
1	Government should give tax holidays to small-scale contractors	Aigbavboa et al. (2018)
2	Proper monitoring and evaluation system should be provided	Aigbavboa et al. (2018)
3	After-care and follow-up training should be provided to SMEs to ensure they remain in business	Aigbavboa et al. (2018), Arthur-Aidoo et al. (2016),
4	The government should relax laws pertaining to the procurement of work by small contractors	Ali et al. (2020), and Phiri (2020),

Source: Authors compilation (2023)

2.4 Chapter conclusion

The second chapter provided a review of the challenges facing the emerging contractors, the processes available in bidding for construction projects in the South African environment, the impacts of various identified challenges on the contractors, and the suggested measures available to mitigate those challenges.

CHAPTER THREE

3.0 RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter outlines the systematic approaches adopted to arrive at meaningful solutions to the study's research questions. It describes the types of data, the population of the study, the sampling frame, sampling technique and sample size, the method of data collection, and the instrument for data collection. Statistical tools and techniques for data analysis, methods of data analysis and presentation were also discussed.

3.2 Research design

A research design is a collection of guides, rules or data collected (Ogoe, 1993). This is reaffirmed by Patel and Patel's (2019) conceptual structure within which the research would be conducted. This goes with the manner in which data collection and analysis is structured—the structure that influences the technique for collection and analysis of data and provides the connection between empirical data as well as its conclusions in a logical sequence to the initial research question of the study (Yin, 2003; Bryman, 2004; Baiden, 2006). A questionnaire survey enhances the consistency of observations and improves replication due to its inherent standardised measurement and sampling techniques (Oppenheim, 2003). This study is an exploratory and investigative-based research, aimed at exploring, investigating and finding mitigation measures for procurement challenges experienced by emerging contractors in securing public construction projects in South Africa. Having said that, the study adopted a quantitative approach as it is exploratory in nature with predetermined circumstances collected from secondary data gathered by other scholars. Thus, data was collected from respondents through questionnaire surveys. Ntimbwa (2013) mentioned that research design is an arrangement of conditions for data collection and analysis in a manner that aims to combine the relevance of research data with the purpose or aim of the study. According to the Bradford

University's (n.d) study on "Introduction to Research and Research Methods", it is important to identify the study approach to collect data. The choice of methodology employed determines the results to be obtained (Creswell, 2014; Jonker and Pennik, 2010; Bacon-Shone, 2015).

3.3 Research population

According to Patel and Patel (2019), sample design is a definite plan determined by the researcher before collecting data. This can be in the form of deliberate sampling, random sampling, systematic sampling, stratified sampling, quota sampling, cluster sampling and area sampling, multi-stage sampling, or sequential sampling.

Emerging contractors are contractors that are still at the entry-level of the industry. The nature of this study required that only the contractors at the entry-level be contacted for the research. Consequently, the collection of data for this study was limited to General Building (GB) and Civil Engineering (CE) emerging contractors listed under the Construction Industry Development Board (CIDB) register of contractors under levels 4 and 5 in the province of Gauteng in South Africa. Gauteng province was chosen for this research because, although it is the smallest province out of nine provinces in South Africa, it has the record for the highest population and the highest level of construction activities in South Africa. Based on the statistics extracted from the CIDB's data base received via email from CIDB official on request, the number of emerging contractors under category levels 4 and 5 is 1338. Thus, the sample size for this research was calculated from the total population of 1338 emerging contractors.

3.4 Sample size and sample techniques

The target population for this study was construction companies operating in the Gauteng province, specifically those registered with the Construction Industry Development Board

register of contractors in the Gauteng province under CIDB levels 4 and 5. The questionnaire survey was distributed to 308 respondents which is the sample size from the population of 1338 determined through Slovin's formula calculated as per section 3.6 below.

Over the years, there have been debates and endless arguments by scholars with regards to the appropriateness of the research methods to be adopted, specifically the choice between the quantitative and qualitative methods. Regardless of the approach employed, the fact is that neither the constructivists nor the positivists have claimed that their instruments are more reliable and valid than each other, thus showing that they are meant to achieve the same goal (Eyisi, 2016). Further, Eyisi (2016), in his study, explored the advantages of the use of the two methods (quantitative and qualitative) and revealed that the authors listed a number of advantages of each method. Notably, in his study, the author found that the quantitative method has the elements of time-saving, resource-saving and the benefit of replicability; thus, the study can be repeated at any time and place and still come up with the same results. Lakshman *et al.* (2000) found that the use of quantitative methods examines the effects of a specified circumstance and/or independent variable on an outcome of interest in ways that can be expressed numerically.

3.5 Pilot study

The researcher began by drawing up a pilot study questionnaire, which was sent to five industry professionals for their comments in terms of the relevance of the questions for the purpose intended. Comments received from those professionals were analysed and incorporated into the research questionnaire, which was then sent out to participants.

3.6 Calculation of Sample sizes

According to Ellen's (2020) study, if a sample is taken from a population, a certain formula must be used to take into account the confidence levels and margins of error due to the fact that

sometimes a lot is unknown about the population when a statistical sample is taken. In these instances, the adoption of Slovin's formula appears to be the most suitable method, effectively taking into account confidence levels and margins of error in the sampling procedure. Based on the target population as discussed above, the researcher used Slovin's formula with a margin of error of 5%:

$$n = \frac{N}{1 + N(e^2)}$$

where n = sample size, N = number of target population, and e^2 = error of margin.

According to the CIDB register of contractors' sites, 1 338 contractors are listed under CIDB levels 4 and 5 for GB and CE classes.

$$n = \frac{1\,338}{1 + 1\,338(0.05^2)}$$

Based on the above formula, the calculated sample size is n = 307.9. Therefore, the sample size for this study is 308.

3.7 Method of Data Collection

According to Naoum (1998), there are two approaches to data collection, namely, fieldwork (primary data collection) and desk study (secondary data collection). Patton (2002) noted that using more than one data collection instrument strengthens and gives credibility to the study. In light of these considerations, this research adopted both primary (field research) and secondary (desktop research) sources of data because of the added benefits, such as the validity of the data gathered. Hence, the approach for collecting data in this study is divided into two main parts: a desk survey and a field survey.

Primary data was obtained through a questionnaire survey, observations, and documentation. Secondary data was collected using literature from previous studies conducted by other scholars. Secondary data was sourced from literature, including published articles, journals, conference proceedings and book chapters by other authors.

3.8 Questionnaire design

A comprehensive literature review supports the development of the questionnaire. To acquire the contact information of the participants, the researcher sent a letter of consent to the CIDB. This letter detailed the researcher's identity information and the objectives of the study (see attached Appendix A). A survey questionnaire was sent out to various respondents via a Google Form link to collect primary data from respondents. The questionnaire comprised five sections, addressing various components of the study. mainly the study objectives. The first section focused on biographical information, while the rest of the sections addressed the study objectives. The survey questionnaire was designed to ensure anonymity, with all participant responses being recorded accordingly. The questionnaire took about 15-20 minutes of the respondents' time to complete. No identical information was included in the survey and all participants voluntarily participated. The compilation and monitoring of responses were done through an online Google Form. The survey was accompanied by a consent letter, which was sent to the participants. (see attached questionnaire, Appendix A).

Before administering the questionnaire, a two-step procedure was followed to assess the appropriateness and rationality of the questionnaire. The procedure included an academic expert review and industry professional contributions. Emerging South African contractors in the province of Gauteng under the CIDB register of contractors' levels 4 and 5 in general building (GB) and civil engineering (CE) classes were considered for this study. A total study population of 1 338 contractors was identified in the study area with only 308 participants contacted.

Questions were developed in the following format based on the information collected through a literature review.

The structured questions were divided into five parts:

- Section A: Background and biographical information of the participants;

- Section B: This section explored issues relating to tendering types and procedures for public procurement construction contracts in general and emerging contractors;
- Section C: Procurement challenges facing emerging contractors in acquiring public sector construction contracts;
- Section D: Impact of procurement challenges facing emerging contractors in public sector construction contracts' performance; and
- Section E: Measures to mitigate procurement challenges experienced by emerging contractors in procuring construction projects.

3.9 Method of data presentation

3.9.1 Statistical techniques for research objectives

The data for this study is presented using tables, and the analysis of the data was achieved using appropriate descriptive and inferential statistics. Descriptive statistical analysis extensively measures the characteristics of a study population, whereas inferential statistics draws conclusions or makes inferences about a population from data sets. The analysis of the data was facilitated by the Statistical Package for Social Sciences (IBM SPSS Statistics 29.0.0). In this study, the dependent variables can be predicted, while the independent variables are the predictors. As mentioned above, the study employed a quantitative approach in the collection of the data based on the predetermined questionnaire and answers. The quantitative feedback given by the participants was analysed against the literature based on previous studies. Participants' responses were grouped and coded accordingly and summarised into findings. The data analysis was provided using both descriptive and inferential statistics. This method was inclusive of the compilation of all the data collected and the findings for either challenges or opportunities from the obtained data analysis. The mean score ranking technique, factor analysis technique and agreement analysis techniques using Kendall's coefficient of

concordance were carried out on the received data. In addition, Bartlett's test of sphericity was carried out to test the presence of correlations between the variables.

3.10 Validity and viability tests

The soundness, accuracy and effectiveness of the study are vital factors that need to be tested to ensure the reliability of the study and the measurement of the data. According to Leedy *et al.* (2015), in addressing the validity concerns of the research, it is important to measure the validity to determine the extent to which individuals perceive the credibility and trustworthiness of the study. According to Mohlala's (2015) study, the trustworthiness and credibility of the study can be measured through the following:

- Reliability: the extent to which the results of the study are replicable or can be reproduced and consistent over a period of time when reproduced under similar methodology; and
- Validity: the extent to which the trustworthiness and credibility of the study can be perceived.

According to Pallant (2011), in the SPSS Survival Manual, one can employ a number of techniques to analyse the factorability of the data. The following techniques were employed to test the validity and suitability of the study:

- Bartlett's test of sphericity and the Kaiser-Meyer-Olkin's (KMO) index were employed to measure sampling adequacy. Significance ($p < 0.05$) in Bartlett's test of specificity indicates the appropriateness of the factor, whereas the KMO index ranges from 0 to 1, with 0.6 suggested as the minimum value for a good factor analysis;
- Cronbach's alpha test to measure internal consistency, which provides an average correlation among all the items that make up the scale, with a higher value being an indication of greater reliability (Pallant, 2011); and

  Principal Components Analysis was used to determine the smallest number of factors that can be used to represent the interrelationships among the set of variables or items.

Content validity was achieved through a pilot test, while construct validity was achieved with the aid of principal component (factor) analysis. External validity was achieved through the use of an adequate sample size generalised for the study area and other areas with similar conditions, and predictive validity was achieved through the use of correlation analysis.

Reliability is used in this study to express the consistency of data or a technique of measurement. This measures the dependability of a method of measurement and ascertains the consistency of a score derived from a measurement technique over a period of time (Marczyk *et al.* 2005). For the purpose of this study, the reliability test was achieved with Cronbach's alpha (α) reliability test. This was determined using the IBM Statistical Package for Social Science (SPSS), Version 29.0.0. The value of (α) varies from 0 to 1. The closer the value of (α) to 1, the more reliable the measurement technique (Newman and Benz, 1998; Malkewitz *et al.* 2023).

CHAPTER FOUR

4.0 RESULTS AND DATA ANALYSIS, AND DISCUSSION OF FINDINGS

4.1 Results and data analysis

4.1.1 Introduction

The results of the data analysis are presented in this chapter. This chapter further discusses and analyses the quantitative data. Data collected through a field questionnaire survey (quantitative) was collected in line with the study objectives via a Google Form survey. The questionnaire comprises five sections. The first section dealt mainly with the biographical information of the respondents in order to identify the participation of historically disadvantaged individuals, such as youth and women, while the other sections addressed the objectives of the study. According to Slovin's formula, a questionnaire was distributed to 308 individuals in the study population, constituting the sample size. The responses of 75 participants, accounting for approximately 24.35% of the sample size, were received.

4.1.2 Background information of respondents

Due to the history of South Africa, where historically disadvantaged individuals, particularly women and black individuals, were excluded from economic systems, such as the construction sector, this study examined the biographical information of the respondents. The aim was to understand and assess their participation in the industry, with a specific focus on this study. As detailed in the foregoing chapters, the emerging contractors are majorly owned by historically disadvantaged individuals. The background information presented in this section dealt with information related to the company owner as well as the company itself. This is due to the fact that the company owner’s experience is vaster than that of the company, which may give different results due to experience accumulated prior to the company owner having established his or her own business. In relation to the company owner, the information presented related to gender, age, educational background, years of experience and formal training in the sector.

While the company information presented relates to the CIDB level of the company, number of projects the company executed, company years of experience, number of public sector projects executed, company turnover classification (Exempted Micro Enterprise (EME) or Qualifying Small Enterprise (QSE)), departments within the business and any other information that the respondent wished to supply.

4.1.2.1 Respondent's gender

The responses from the survey found that, out of 75 participants, 45 (60%) were male, while the remaining 30 (40%) were female. It is interesting to note that in the government's response to transform the industry, more females are participating in this industry. This finding is further supported by Ncwadi and Dangalazana's (2005) study, which reported that more than half (58%) of the participants were female.

4.1.2.2 Respondent's age

In relation to the company owner's ages, the study indicated that 2 (2.7%) were between the ages of 20 and 25 years, 31 (41.3%) were between the ages of 26 and 30 years, 14 (18.7%) were between the ages of 31 and 35 years, and 10 (13.3%) were between the ages of 36 and 40 years. 12 (16%) were between the ages of 41 and 45 years, 2 (2.7%) were between the ages of 46 and 50 years, and the remaining 4 (5.3%) were above 50 years. It can be concluded that the respondents that make up the survey sample are likely to have a sense of responsivity and must have reasonable experience in the industry.

4.1.2.3 Respondent's qualifications

In terms of qualifications of the company owners, the study found that 3 (4%) individuals' highest qualification was Grade 10, 2 (2.7%) individuals' highest qualification was Grade 11, 10 (13.3%) individuals' highest qualification was Grade 12 or Matric, 4 (5.3%) individuals' highest qualification was a higher certificate, 13 (17.3%) individuals' highest qualification was

a national diploma, 26 (34.7%) individuals' highest qualification was a degree, 7(9.3%) individuals' highest qualification was a master's degree, 6 (8%) individuals' highest qualification was an honour's degree, and the remaining 4 (5.3%) individuals' had doctoral degrees. Consequently, the data demonstrates that the majority of the respondents possess degree qualifications.

4.1.2.4 Respondent's professional experience

In relation to their experience, 15 (20%) of the respondents had 1–5 years, 27 (36%) had 6–10 years, 22 (29.3%) had 11–15 years, and the remaining 11 (14.7%) had more than 15 years of experience in the industry. It can be shown that most of the respondents have been in the industry for more than five years, which is proof that the participants are more familiar with what they are doing. This is evidenced by Oyewole's (2022) study, which found that about 56% of the respondents had more than five years of experience.

4.1.2.5 Respondent's company owner's qualification

With regard to the company owner's construction qualifications, 16 (21.3%) confirmed having a qualification in Construction Management/Science, 9 (12%) in Civil Engineering qualification, 25 (33.3%) in Quantity Surveying, 5 (6.7%) in Architecture/Architectural Technology, 4 (5.3%) in Land Surveying, 6 (8%) in Building Economics/Science, and the remaining 10 (13.3%) confirmed having other qualification qualifications. The results show a positive response in regards to the company owner's educational background; thus, they have sufficient knowledge of the industry.

4.1.2.6 Respondent's company experience

The study further investigated the company's experience to look into the company's level of CIDB rating, number of projects executed, experience of the contractor in years and turnover of the contractors. The study found that 25 (33.3%) of the respondents were on CIDB level 4,

20 (26.7%) were on CIBD Potential Emerging (PE) level 4, 7 (9.3%) were on CIDB level 5, and 14 (18.7%) were on CIDB level 5PE, while the remaining 9 (12%) were on other CIDB levels.

Regarding CIDB classification, the study revealed that 29 (38.7%) respondents were classified as general building (GB) contractors, 25 (33.3%) were classified as civil engineering (CE) contractors, and the remaining 8 (10.7%) were classified as both GB and CE contractors.
The study further assessed the number of projects that were executed by the respondents under each CIDB level in the form of the value of the projects executed. In that, the study found that under CIDB level 1 projects with a tender value from R500 000.00 to R1 million, 9 (12%) respondents have never done projects within this value range, 28 (37.3%) had done 1–5 projects within this value range, 23 (30.7%) had done more than 6 projects but equal to or less than 10 projects within this value range, 6 (8%) had done more than 11 but equal to or less than 15 projects, 5 (6.7%) had done more than 16 but equal to or less than 20 projects within this value range, while remaining 4 (5.3%) respondents had done more than 20 projects within this value range.

In terms of CIDB level 2 projects with a tender value from R1 million to R3 million, 14 (18.7%) respondents have never done projects within this value range, 28 (37.3%) had done 1–5 projects within this value range, 18 (24%) had done more than 6 projects but equal to or less than 10 projects within this value range, 9 (12%) had done more than 11 but equal to or less than 15 projects, 1 (1.3%) had done more than 16 but equal to or less than 20 projects within this value range, while the remaining 5 (6.7%) respondents had done more than 20 projects within this value range. In terms of CIDB level 3 projects with a tender value ranging from R3 million to R6 million, 14 (18.7%) respondents have never done projects within this value range. 31

(41.3%) had done 1–5 projects within this value range; 14 (18.7%) had done more than 6 projects but equal to or less than 10 projects within this value range. 8 (10.7%) respondents had done more than 11 but equal to or less than 15 projects, 3 (4%) had done more than 16 but equal to or less than 20 projects within this value range; and the remaining 5 (6.7%) respondents had done more than 20 projects within this value range.

In terms of CIDB level 4 projects with a tender value ranging from R6 million to R10 million, 22 (29.3%) respondents have never done projects within this value range, and 20 (26.7%) had done projects within this value range. 1 (1.3%) respondent had done more than 16 but equal to or less than 20 projects within this value range, and the remaining 4 (5.3%) respondents have done more than 20 projects within this value range.

In terms of CIDB level 5 projects with a tender value of R10 million and above, 21 (28%) respondents have never done projects within this value range, 27 (36%) had done 1–5 projects within this value range, 15 (20%) had done more than 6 projects but equal to or less than 10 projects within this value range, 7 (9.3%) had done more than 11 but equal to or less than 15 projects, and 1(1.3%) had done more than 16 but equal to or less than 20 projects within this value range, while the remaining 4 (5.3%) respondents had done more than 20 projects within this value range.

The study further examined the respondents' companies' experiences and found that 28 (37.3%) of the companies had between 0 and 5 years of experience, 24 (32%) had between 6 and 10 years of experience, 11 (14.7%) had between 11 and 15 years of experience, and the remaining 12 (16%) had more than 15 years' experience. In terms of the total number of projects executed by the respondents' companies since inception, the study found that 17

(22.7%) executed between 1 and 5 projects, 26 (34.7%) executed between 6 and 10 projects, and 17 (22.7%) executed between 11 and 15 projects, while the remaining 12 (16%) executed more than 15 projects.

The study further looked at the number of public sector projects executed by the respondents' companies and found that 7 (9.3%) have never done any work with the state, 32 (42.7%) had between 1 and 5 projects with the state, 17 (22.7%) had done between 6 and 10 projects with the state, 9 (12%) had done between 11 and 15 projects with the state, and the remaining 10 (13.3%) had done more than 15 projects with the state. The study further examined the respondents' companies' annual turnover to determine whether they were classified as Exempted Micro Enterprises (EMEs) or Qualifying Supplier Enterprises (QSE). The study found that 50 (66.7%) of the companies were EMEs and 25 (33.3%) were classified as QSEs.

Table 4.1 below summarises the above results of biographical information related to the company owners.

Table 4.1: Background Information of Respondents about Company Owners

Demographic information	Categories	Frequency	Percentage (%)
Company Owner's Gender	Male	45	60.0
	Female	30	40.0
	Total	**75**	**100.0**
Company Owner's Age Group	20-25	2	2.7
	26-30	31	41.3
	31-35	14	18.7
	36-40	10	13.3
	41-45	12	16.0
	46-50	2	2.7
	Above 50	4	5.3
	Total	**75**	**100.0**
Company Owner's Highest Qualification	Grade 10	3	4.0
	Grade 11	2	2.7
	Matric/Grade 12	10	13.3

Demographic information	Categories	Frequency	Percentage (%)
	Higher certificate	4	5.3
	National Diploma	13	17.3
	Degree	26	34.7
	Master's Degree	7	9.3
	Honor's Degree	6	8.0
	Doctorate Degree	4	5.3
	Total	**75**	**100.0**
Company Owner's Years of Experience	1-5 years	15	20.0
	6-10 years	27	36.0
	11-15 years	22	29.3
	15 and above years	11	14.7
	Total	75	100.0
Company Owner's Construction Qualification	Construction Management/Studies	16	21.3
	Civil Engineering	9	12.0
	Quantity Surveying	25	33.3
	Architecture/Architectural Technology	5	6.7
	Land Surveying	4	5.3
	Building Economics/Science	6	8.0
	Others	10	13.3
	Total	**75**	**100.0**
CIDB Grading	Level 4	25	33.3
	Level 4PE (Potential emerging)	20	26.7
	Level 5	7	9.3
	Level 5PE (Potential emerging)	14	18.7
	Others	9	12.0
	Total	**75**	**100.0**
CIDB Classification	General building	29	38.7
	Civil engineering	25	33.3
	General building, civil engineering	13	17.3
	Others	8	10.7
	Total	**75**	**100.0**
Number or previous projects carried out (0-R200,000)	None	1	1.3
	1-5	34	45.3
	6-10	22	29.3
	11-15	6	8.0
	16-20	7	9.3
	More than 20	5	6.7

Demographic information	Categories	Frequency	Percentage (%)
	Total	**75**	**100.0**
Number or previous projects carried out (R500,000-1,000,000)	None	9	12.0
	1-5	28	37.3
	6-10	23	30.7
	11-15	6	8.0
	16-20	5	6.7
	More than 20	4	5.3
	Total	**75**	**100.0**
Number or previous projects carried out (R1,000,000-3,000,000)	None	14	18.7
	1-5	28	37.3
	6-10	18	24.0
	11-15	9	12.0
	16-20	1	1.3
	More than 20	5	6.7
	Total	**75**	**100.0**
Number or previous projects carried out (R3,000,000-6,000,000)	None	14	18.7
	1-5	31	41.3
	6-10	14	18.7
	11-15	8	10.7
	16-20	3	4.0
	More than 20	5	6.7
	Total	**75**	**100.0**
Number or previous projects carried out (R6,000,000-10,000,000)	None	22	29.3
	1-5	20	26.7
	6-10	20	26.7
	11-15	8	10.7
	16-20	1	1.3
	More than 20	4	5.3
	Total	**75**	**100.0**
Number or previous projects carried out (above R10,000,000)	None	21	28.0
	1-5	27	36.0
	6-10	15	20.0
	11-15	7	9.3
	16-20	1	1.3
	More than 20	4	5.3
	Total	**75**	**100.0**
Company's experience in construction	0-5	28	37.3
	6-10	24	32.0
	11-15	11	14.7
	More than 15	12	16.0
	Total	**75**	**100.0**
Total number of projects executed since inception	1-5 projects	17	22.7
	6-10 projects	26	34.7
	11-15 projects	17	22.7
	More than 15 projects	15	20.0

Demographic information	Categories	Frequency	Percentage (%)
	Total	**75**	**100.0**
Total number of public sector projects executed since inception	None	7	9.3
	1-5 projects	32	42.7
	6-10 projects	17	22.7
	11-15 projects	9	12.0
	More than 15 projects	10	13.3
	Total	**75**	**100.0**
Company's annual turnover	EME (R0.00 to R10 000 000.00)	50	66.7
	QSE (R10 000 000.00 to R50 000 000.00)	25	33.3
	Total	**75**	**100.0**

The study further looked at the types of activities engaged in by the companies through the assessment of available departments to aid in the day-to-day activities of the company. The results found that 59 (78.7%) of the companies have an estimating and pricing department, while 16 (21.3%) do not. 52 (69.3%) have a quantity surveying department, while 23 (30.7%) of the companies do not. 45 (60%) of the companies have buying and procurement departments, while 30 (40%) of the companies do not have them. Also, 41 (60%) of the companies have sales departments, while the remaining 30 (40%) do not. Furthermore, 51 (68%) of the companies claimed they have a health and safety department, while 24 (32%) of the companies do not. In addition, 38 (50.7%) of the companies claimed that they have an accounts and creditors department, while the remaining 37 (49.3%) of the companies do not have one, and lastly, 37 (59.3%) of the companies have a plant department, while the remaining 38 (50.7%) of the companies claimed they do not have one. Table 4.2 below illustrates these findings. Table 4.2: Information from Respondents about Departments within Business.

Department within Business	Categories	Frequency	Percentage (%)
Estimating and Pricing department	Available	59	78.7
	Not available	16	21.3
	Total	**75**	**100.0**
Quantity surveying	Available	52	69.3
	Not available	23	30.7
	Total	**75**	**100.0**
Buying and procurement department	Available	45	60.0
	Not available	30	40.0
	Total	**75**	**100.0**
Sales department	Available	41	54.7
	Not available	34	45.3
	Total	75	100.0
Production department	Available	55	73.3
	Not available	20	26.7
	Total	**75**	**100.0**
Health and safety department	Available	51	68.0
	Not available	24	32.0
	Total	**75**	**100.0**
Accounts and finance department	Available	38	50.7
	Not available	37	49.3
	Total	**75**	**100.0**
Plant and equipment department	Available	37	49.3
	Not available	38	50.7
	Total	**75**	**100.0**

4.1.3 Processes and Procedures Undertaken by the Emerging Contractors in Bidding for Public Sector Contracts

This section presents different processes for public procurement contracts in general and for emerging contractors. Up to eight attributes were analysed.

4.1.3.1 Understanding Regulatory framework governing the tendering processes in South Africa

This section investigated the knowledge and understanding that respondents have of the regulatory framework that governs tendering processes. The study found that the Construction

Industry Development Board Act 38 of 2000 (CIDB Act) is the most understood act, as it ranked first (M = 2.773, SD = 1.237), followed by the Broad-Based Black Economic Empowerment Act (B-BBEE Act) (M = 2.707, SD =1.194). The results also showed that respondents had the least understanding of the Promotion of Equality and Prevention of Unfair Discrimination Act (PEPUD Act) (M = 2.133, SD = 1.288, ranked 7). This was followed by the Preferential Procurement Policy Framework Act (PPPFA), which ranked 6 with M = 2.213 and SD = 1.244. Thus, with the respondents having been in the industry, they understand and have more knowledge of how the CIDB Act and B-BBEE work, which is mainly because these are one of the pre-requisites for tendering and tender submissions. However, with the least understanding of PEPUD and PPPFA, the respondents possess less knowledge and understanding of the administration process of procurement by the organs of the state.

The below Table 4.3 summarises the above:

Table 4.3: Understanding of the Regulatory Framework

Regulatory framework	Mean	S.D.	Rank
Construction Industry Development Board Act	2.773	1.237	1
Broad-Based Black Economic Empowerment	2.707	1.194	2
The Constitution of South Africa	2.640	1.382	3
Preferential Procurement Regulations	2.253	1.164	4
Public Finance Management Act	2.240	1.228	5
Preferential Procurement Policy Framework Act	2.213	1.244	6
Promotion of Equality and Prevention of Unfair Discrimination	2.133	1.288	7

4.1.3.2 Understanding of standard construction contracts

The respondents' level of understanding of each standard construction contract was investigated and presented in this section. As depicted in Table 4.4 below, the study found that the Joint Building Contracts Committee (JBCC) series, which is mainly used for general building contracts in South Africa, is the most widely understood contract with a M = 3.213, SD = 1.189, and ranked first. This was followed by the General Conditions of Contract (GCC),

which is mainly used for civil engineering contracts, which ranked second with (M = 2.667 and SD = 1308). The Master of Builder's South Africa Domestic Subcontract Agreement (MBSA) was partially understood by the respondents. The study further found that the FIDIC Red and Yellow Book (M = 2.147, SD = 1.135) and New Engineering Contracts 3 or 4 (NEC3/4) (M = 2.307, SD = 1.139) were the least understood contracts, respectively.

Table 4.4: Understanding of contract documents

Contract documents	Mean	S.D.	Rank
Joint Building Contracts Committee (JBCC) Series	3.213	1.189	1
General Conditions of Contract (GCC)	2.667	1.308	2
MBSA Domestic Subcontractor agreement	2.640	1.123	3
New Engineering Contracts (NEC3/4)	2.307	1.139	4
FIDIC Red and Yellow Book	2.147	1.135	5

4.1.3.3 Frequency of use of contract documents based on your understanding of such documents

Based on the understanding of the above documents, Table 4.5 presents the frequency with which the respondents use the above-mentioned standard construction contract documents. The study found that JBCC was the most frequently used contract document, with (M = 3.347, SD = 1.493), which ranked first. This was followed by GCC, with (M = 2.587, SD = 1.386), which ranked second and MBSA Domestic Subcontract, with (M = 2.493, SD = 1.309), which ranked third. The least used documents were NEC and FIDIC, with (M = 2.027, SD = 1.325) and (M = 1.800, SD = 1.090), respectively.

Table 4.5: Frequency of use of contract documents using understanding of contract documents

Contract documents	Mean	S.D.	Rank

Joint Building Contracts Committee (JBCC)Series	3.347	1.493	1
General Conditions of Contract (GCC)	2.587	1.386	2
MBSA Domestic Subcontractor agreement	2.493	1.309	3
New Engineering Contracts (NEC3/4)	2.027	1.325	4
FIDIC Red and Yellow Book	1.800	1.090	5

In an attempt to test the relationship between the understanding of the contract documents and the level of usage, the study employed Paired-Samples T-test. In testing the use of NEC3/4, JBCC, GCC and MBSA, the mean values of 2.307, 3.213, 2.667, and 2.640 for understanding the documents were not statistically significantly different at a probability value of 0.05 ($p<0.05$), and therefore the use of those contracts compared to the frequency of use by the respondents, with a mean value of 2.027, 3.347, 2.587, and 2.493, respectively, were not correlating. However, the FIDIC contract document, in testing the relationship between understanding and use of the contract using the same probability of 0.05 ($p<0.05$), proved to be statistically significantly different, with a mean score of 2.147 for understanding and 1.800 for frequency of use. Table 4.6 depicts the above.

Table 4.6: Paired-Samples T-test for Understanding and Frequency of Usage of Contract Documents

Contract documents	Understanding	Frequency of use	Mean Diff.	S.D.	T	Sig.

	Mean	S.D.	Mean	S.D.				
New Engineering Contracts (NEC3/4)	2.307	1.139	2.027	1.325	0.280	1.236	1.961	0.054
Joint Building Contracts Committee (JBCC)Series	3.213	1.189	3.347	1.493	-0.133	1.018	1.134	0.260
General Conditions of Contract (GCC)	2.667	1.308	2.587	1.386	0.080	1.100	0.630	0.531
MBSA Domestic Subcontractor agreement	2.640	1.123	2.493	1.309	0.147	1.111	1.143	0.257
FIDIC Red and Yellow Book	2.147	1.135	1.800	1.090	0.347	1.225	2.451	**0.017***

Note: *Correlation is significant at the 0.05 level (2-tailed).

4.1.3.4 Understanding of different types of tendering

In this section, the study presents the level at which the respondents understood the different types of tendering processes. The study found that open tendering was the most understood type of tendering, ranking first (M = 3.60 and SD = 1.443), followed by selected tendering, which ranked second (M = 3.160 and SD = 1.356). The negotiated tendering was the least understood ranked (M = 3.040 and SD = 1.456).

Table 4.7: Understanding of tendering types

Tendering types	Mean	S.D.	Rank
Open tendering	3.600	1.443	1
Selected tendering	3.160	1.356	2
Negotiated tendering	3.040	1.456	3

4.1.3.5 Respondents Involvement in projects procured in any of the above tendering types

The section presented the frequency at which respondents get involved in projects procured in any of the tendering processes listed above. The study found that respondents get involved mostly in projects procured through open tendering, which ranked first (M = 3.493, SD =

1.408), selected tendering ranked second (M = 2.56, SD = 1.307), and negotiated tendering, ranking third, is the least common process that respondents engaged in among various tendering methods with a mean (M = 2.493 and SD = 1.329). See Table 4.8 below.

Table 4.8: Involvement in the tendering types

Tendering types	Mean	S.D.	Rank
Open tendering	3.493	1.408	1
Selected tendering	2.560	1.307	2
Negotiated tendering	2.493	1.329	3

Table 4.9 below shows the result of the relationship between understanding of the type of tendering process and the level of respondents' involvement. The study found that the understanding of selected tendering, with a mean value of 3.160, significantly correlated with the frequency of involvement in selected tendering with a mean value of 2.560 at $p<0.01$. The result further showed that the understanding of negotiated tendering with a mean value of 3.040 and involvement in projects procured through negotiated tender with a mean value of 2.493 were significantly correlated at $p<0.01$. Table 4.9 below depicts the above.

Table 4.9: Paired-Samples T-test for Understanding and Involvement of Tendering Types

Tendering types	Understanding		Involvement		Mean Diff.	S.D.	t	Sig.
	Mean	S.D.	Mean	S.D.				
Open tendering	3.600	1.443	3.493	1.408	0.107	0.909	1.016	0.313
Selected tendering	3.160	1.356	2.560	1.307	0.600	1.489	3.490	**0.001****
Negotiated tendering	3.040	1.456	2.493	1.329	0.547	1.571	3.014	**0.004****

Note: **Correlation is significant at the 0.01 level (2-tailed).

4.1.3.6 Frequency of involvement in contractual arrangements

This section presents the frequency in which the respondents are involved in construction contractual arrangements. The study found that construction-only arrangements are mostly used by the respondents with (M = 3.600, SD = 1.470), followed by subcontracting (M = 3.373,

SD = 1.393), design and build is the least used contractual arrangement (M = 2.200, SD = 1.241). Table 4.10 below depicts the above.

Table 4.10:Frequency of Involvement in Contractual Arrangement

Contractual arrangement	Mean	S.D.	Rank
Construction only	3.600	1.470	1
Subcontracting	3.373	1.393	2
Joint bidding (JV)	2.400	1.284	3
Design and build	2.200	1.241	4

4.1.3.7 Frequency of getting projects through programmes for emerging contractors

Table 4.11 shows the result of the frequency at which respondents get projects through programmes for emerging contractors. The study found that SMME development programmes were the most available programmes with which the respondents procured projects (M = 2.840, SD = 1.415), and the emerging contractor's development programme was the least successful in getting projects by the respondents (M = 2.480, SD = 1.339).

Table 4.11: Programmes for Emerging Contractors

Programmes for emerging contractors	Mean	S.D.	Rank
SMME development programmes	2.840	1.415	1
Emerging contractor's development programmes	2.480	1.339	2

4.1.3.8 Reliability test statistics

This section of the study was further subjected to a reliability test to measure the internal consistency, which was conducted through the Cronbach's alpha test. This was conducted using a questionnaire responses and summarised as per Table 4.12 below.

Table 4.12: Reliability analysis (Cronbach's Alpha)

Variables	Cronbach's Alpha	No. of Items in the question
4.12.1. Regulatory framework governing the tendering process in South Africa	0.940	7

Variables	Cronbach's Alpha	No. of Items in the question
4.12.2 Understanding of standard construction contracts	0.853	5
4.12.3 Frequency of use of the contract documents based on your understanding of such documents	0.710	5
4.12.4 Understanding of different types of tendering	0.857	3
4.12.5 Involvement in the projects procured in any of the above tendering types	0.494	3
4.12.6 Frequency of involvement in any of the below contractual arrangements	0.605	4
4.12.7 Frequency of getting projects through programmes for emerging contractors	0.790	2

4.1.4 Procurement challenges experienced by emerging contractors in public sector construction projects

In this section, the study presented the degree to which the respondents agreed or disagreed with the existence of certain challenges affecting emerging contractors in the construction sector using a Likert scale of 1–5. The study found that amongst the 21 listed challenges, late payments from government (M = 3.507 and SD = 1.680), political interference (M = 3.427 and SD = 1.544), and poorly managed cashflow (M = 3.400 and SD = 1.533) were the major challenges experienced by emerging contractors in construction projects in the public sector, while the type of procurer (M=2.800 and SD=1.375) was the least challenging . Table 4.13 below summarises the result.

Table 4.13: Challenges experienced by emerging contractors

Challenges	Mean	S.D.	Rank
Late payments by government	3.507	1.680	1
Political interference	3.427	1.544	2
Poorly managed cashflow	3.400	1.533	3
Too much competition	3.373	1.575	4
Lack of understanding of pricing techniques	3.320	1.604	5
Lack of access to finance	3.307	1.676	6
Administrative burden	3.253	1.462	7
Insufficient or limited time to complete bids	3.200	1.594	8
Complexity of procurement regulations and their difficulty in	3.187	1.513	9

Challenges	Mean	S.D.	Rank
implementation			
Insufficient bidding information	3.187	1.458	9
Selection criteria used	3.160	1.551	11
Price of tender documents	3.147	1.531	12
Tender procedures too complicated	3.107	1.573	13
Overall contract value for single award	3.093	1.444	14
One-man-show (sole management)	3.067	1.605	15
Lack of construction management skills	3.027	1.684	16
The publication of prior information	3.027	1.395	16
Tender procedure chosen	3.013	1.409	18
Poor record keeping	2.973	1.594	19
Type of contract	2.867	1.528	20
Type of procurer	2.800	1.375	21

4.1.4.1 Factor Analysis for challenges experienced by emerging contractors

To verify that the data for the study was suitable and adequate, the study employed the Kaiser-Meyer-Olkin's (KMO) and Bartlett's tests. The KMO result of 0.939 confirms that the data was adequate for the purpose intended, while the Bartlett's value was significant at 0.000. See Table 4.14 below.

Table 4.14: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.939
Bartlett's Test of Sphericity	Approx. Chi-Square	2342.644
	Df	210
	Sig.	0.000

To further test the reliability and internal consistency, the result indicated a high value, or 0.986, which is an indication of good internal consistency for the study. See Table 4.15.

Table 4 15: Reliability Statistics

Cronbach's Alpha	N of Items
0,986	21

The data was further subjected to principal component analysis (PCA) using the extraction method to check how much percentage each statement of the questionnaire contributed to the variable, which is depicted in Table 4.16 below. All the extracted communalities are above 0.5.

Table 4.16: Communalities

Communalities

	Initial	Extraction
Lack of construction management skills	1.000	.731
Lack of access to finance	1.000	.761
Poor record keeping	1.000	.724
One-man-show (sole management)	1.000	.805
Lack of understanding of pricing techniques	1.000	.879
Late payments by government	1.000	.819
Poorly managed cashflow	1.000	.814
Tender procedures too complicated	1.000	.819
Political interference	1.000	.795
Complexity of procurement regulations and their difficulty in implementation	1.000	.824
Overall contract value for single award	1.000	.830
Type of contract	1.000	.722
Type of procurer	1.000	.649
The publication of prior information	1.000	.818
Tender procedure chosen	1.000	.785
Selection criteria used	1.000	.858
Price of tender document	1.000	.728
Too much competition	1.000	.787
Insufficient bidding information	1.000	.724
Administrative burden	1.000	.821
Insufficient or limited time to complete bids	1.000	.812

Extraction Method: Principal Component Analysis.

The table below presents the number of challenges and their eigenvalues. The KMO criterion of retaining only factors with an eigenvalue of 1.0 or more was employed. Consequently, five challenges with eigenvalues exceeding 1.0 were retained. The results of 89.668 is above 0.6

Table 4.17: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	16,506	78,601	78,601	16,506	78,601	78,601
2	,884	4,210	82,811	,884	4,210	82,811
3	,565	2,693	85,503	,565	2,693	85,503
4	,479	2,280	87,783	,479	2,280	87,783
5	,396	1,885	89,668	,396	1,885	89,668
6	,344	1,640	91,308			
7	,303	1,443	92,751			
8	,233	1,108	93,859			
9	,202	,964	94,823			
10	,173	,825	95,648			
11	,155	,739	96,387			
12	,150	,712	97,099			
13	,103	,488	97,587			
14	,094	,448	98,035			
15	,085	,403	98,439			
16	,081	,388	98,826			
17	,078	,372	99,198			
18	,060	,288	99,486			
19	,045	,213	99,698			
20	,037	,178	99,876			
21	,026	,124	100,000			

Extraction Method: Principal Component Analysis.

Table 4.18 below presents the relationship between the 21 listed challenges, which can be summarised to five key factors. In order to interpret this, the table below was used, which indicates that:

- Lack of access to finance, late payments by the government, lack of construction management skills, political interference, lack of understanding of pricing techniques, poorly managed cashflow, selection criteria used, and administrative burden can be summarised as **"capital and business operations challenges"**.
- Type of procurer, complexity of procurement regulations and their difficulty in implementation, tender procedure chosen, too much competition, overall contract value for a single award, and the publication of prior information can be summarised as **"policy and procedure challenges"**.
- Insufficient bidding information and insufficient or limited time to complete bids can be summarised as "**tender/bid documentation-related challenges"**.
- Poor record keeping and one-man-show (sole management) can be summarised as **"accounting and management-challenges"**.
- Lastly, the type of contract and price of the tender document can be summarised as **"tender administration-related challenges"**.

Table 4.18: Rotated Component Matrixa

	Component				
	1	2	3	4	5
Lack of access to finance	,800				
Late payments by government	,794				
Lack of construction management skills	,730				
Political interference	,691				
Lack of understanding of pricing techniques	,629				
Poorly managed cashflow	,590				
Selection criteria used	,536				
Administrative burden	,482				
Type of procurer		,810			
Complexity of procurement regulations and their difficulty in implementation		,720			
Tender procedures too complicated		,665			
Tender procedure chosen		,638			
Too much competition		,602			
Overall contract value for single award		,567			
The publication of prior information		,555			
Insufficient bidding information			,744		
Insufficient or limited time to complete bids			,482		
Poor record keeping				,650	
One-man-show (sole management)				,577	
Type of contract					,647
Price of tender documents					,640

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
a. Rotation converged in 12 iterations.

The above was then further subjected to varimax with Kaiser Normalisation to indicate the relationship between each group of components. Table 4.20 illustrates this:

Table 4.19: Component Transformation Matrix

Component	1	2	3	4	5
1	,570	,530	,392	,357	,336
2	-,702	,650	,111	-,166	,211
3	-,044	-,404	,701	-,450	,374
4	,006	-,168	-,523	,028	,835
5	-,424	-,323	,261	,801	,075

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.

Lastly, an internal consistency test was done through Cronbach's alpha, which delivered good results of 0.986, which is higher than the acceptable variance of 0.70. Table 4.21 below illustrates this.

4.1.5 Impacts of Procurement Challenges on Construction Project Performance

This section presents the consequential impact of procurement challenges on construction project performance. The study found that project cost overruns ranked first (M = 3.533, SD = 1.545), followed by time overruns ranking second with (M = 3.493 and SD = 1.563). Abandoned and incomplete projects ranked number 7, which had the least impact with (M = 3.307 and SD = 1.559).

Table 4.20: Impact of procurement challenges in project performance

Impact on project performance	Mean	S.D.	Rank
Project costs overruns	3.533	1.545	1
Time overruns	3.493	1.563	2
Lack of access to public construction contracts	3.493	1.492	2
Loss of profits	3.480	1.703	4
Blacklisting of contractors by creditors	3.467	1.588	5
Liquidation of emerging contractors	3.453	1.545	6
Abandoned projects/incomplete projects	3.307	1.559	7

4.1.5.1 Factor analysis for impacts of procurement challenges on emerging contractors

The study further evaluated the suitability and adequacy of the data using the Kaiser-Meyer-Olkin (KMO) and Bartlett's tests. The KMO result showed the results of 0.929, which confirmed that the data was adequate for the purpose intended. See Table 4.22 below.

Table 4.21: KMO and bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.929
Bartlett's Test of Sphericity	Approx. Chi-Square	771.826
	Df	21
	Sig.	0.000

The data was further subjected to principal component analysis (PCA) using the extraction method to determine the percentage contribution of each statement of the questionnaire to the variable, which is depicted in Table 4.23 below. All the extracted communalities are above 0.5 as depicted in the table below.

Table 4.22: Communalities

Communalities		
	Initial	Extraction
Loss of profits	1,000	,880
project costs overruns	1,000	,937
Time overruns	1,000	,924
Abandoned projects/incomplete projects	1,000	,825
Liquidation of emerging contractors	1,000	,865
Blacklisting of contractors by creditors	1,000	,819
Lack of access to public construction contracts	1,000	,822

Extraction Method: Principal Component Analysis.

Total variance explained analysis was further conducted as per Table 4.24 below. The result of 86.752 is above 0.6.

Table 4.23: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6,073	86,752	86,752	6,073	86,752	86,752
2	,312	4,455	91,207			
3	,229	3,267	94,474			
4	,163	2,328	96,803			
5	,129	1,847	98,650			
6	,062	,880	99,529			
7	,033	,471	100,000			

Extraction Method: Principal Component Analysis.

To further explain the above analysis, a component matrix was done as per below Table 4.24

Table 4 24: Component Matrixa

	Component 1
Project costs overruns	,968
Time overruns	,961
Loss of profits	,938
Liquidation of emerging contractors	,930
Abandoned projects/incomplete projects	,908
Lack of access to public construction contracts	,907
Blacklisting of contractors by creditors	,905

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

Lastly, an internal consistency test was done through Cronbach's alpha, resulting in 0.974, which is higher than the acceptable variance of 0.70. Table 4.26 below illustrated this.

Table 4.25: Reliability Statistics

Cronbach's Alpha	N of Items
0,974	7

4.1.6 Measures to Mitigate Procurement Challenges Experienced by Emerging Contractors

This section presents possible measures to mitigate the challenges experienced by emerging contractors. The study found that timely payment and training of emerging contractors should be prioritised M = 3.680, SD = 1.508 and M = 3.600, SD = 1.516 Even though emphasis on quality, allowing flexibility and breaking of tenders into lots is one of the mitigative factors, the study found that these are the least mitigative measures: M = 3.040, SD = 1.437 and M = 3.160, SD = 1.395 ranked 11 and 10 (descending), respectively. Table 4.27 below depicts this and illustrates further information.

Table 4 26: Measures to mitigate procurement challenges

Mitigating factors	Mean	S.D.	Rank
Payments be made on time	3.680	1.508	1
Training of emerging contractors	3.600	1.516	2
Providing more and better information	3.587	1.406	3
Early payment arrangements	3.533	1.647	4
Reducing or eliminating cost of tenders	3.533	1.536	4
Providing sufficient time to complete bids	3.387	1.541	6
Alleviating administrative burden	3.333	1.483	7
Better dialogue between bidders and procurers	3.253	1.415	8
Avoiding disproportionate technical or financial requirements	3.213	1.328	9
Breaking down tenders into lots	3.160	1.395	10
Emphasis on quality and allowing flexibility	3.040	1.437	11

4.6.1 Factor analysis for measures mitigating the procurement challenges on emerging contractors

The study further evaluated the suitability and adequacy of the data using the Kaiser-Meyer-Olkin (KMO) and Bartlett's tests. The KMO result showed a value of 0.932, which confirmed that the data was adequate for the purpose intended. See Table 4.28 below.

Table 4 .27: KMO and bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.932
Bartlett's Test of Sphericity	Approx. Chi-Square	1131.488
	Df	55
	Sig.	0.000

The data was further subjected to principal component analysis (PCA) using extraction method to check how much percentage each statement of the questionnaire contribute to the variable, which is depicted in Table 4.29 below. All the extracted communalities are above 0.5 as per table below:

Table 4.28: Communalities

	Initial	Extraction
Breaking down tenders into lots – Small sub-projects	1,000	,762
Avoiding disproportionate technical or financial requirements	1,000	,748
Emphasis on quality and allowing flexibility	1,000	,721
Providing more and better information	1,000	,864
Providing sufficient time to complete bids	1,000	,807
Better dialogue between bidders and procurers	1,000	,736
Alleviating administrative burden	1,000	,779
Payments be made on time	1,000	,834
Early payment arrangements	1,000	,892
Reducing or eliminating cost of tenders	1,000	,900
Training of emerging contractors	1,000	,873

Extraction Method: Principal Component Analysis.

The total variance explained analysis was further conducted as per Table 4.30 below. The results showed 81.065, which is above 0.6.

Table 4.29: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8,917	81,065	81,065	8,917	81,065	81,065
2	,472	4,293	85,358			
3	,388	3,530	88,888			
4	,331	3,013	91,901			
5	,247	2,247	94,148			
6	,194	1,768	95,916			
7	,159	1,448	97,364			
8	,107	,975	98,339			
9	,080	,728	99,067			
10	,067	,609	99,676			
11	,036	,324	100,000			

Extraction Method: Principal Component Analysis.

To further explain the above analysis, a component matrix was done as per below Table 4.30.

Table 4.30: Component Matrixa

	Component 1
Reducing or eliminating cost of tenders	,949
Early payment arrangements	,945
Training of emerging contractors	,935
Providing more and better information	,930
Payments be made on time	,913
Providing sufficient time to complete bids	,898
Alleviating administrative burden	,883
Breaking down tenders into lots	,873
Avoiding disproportionate technical or financial requirements	,865
Better dialogue between bidders and procurers	,858
Emphasis on quality and allowing flexibility	,849

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Lastly, an internal consistency test was done through Cronbach's alpha, which delivered good results of 0.976, which is higher than 0.70 acceptable variance. Table 4.31 below illustrated this.

Table 4.31: Reliability Statistics

Cronbach's Alpha	N of Items
0,974	11

4.2. Discussion of findings

4.2.1 Overview of discussion of findings

In addition to the literature review, the findings were discussed in depth to confirm whether the discussion presented in literature review is indeed as per the experiences experienced of the emerging contractors.

4.2.2 Biographical information

The study conducted through a questionnaire survey showed that, out of 75 respondents, 60% were male and 40% were female. The majority of participants were between 26 and 30 years old, accounting for 41.3% of the respondents. The majority of the respondents (34.7%) had degree qualifications, and 33.3% of the 75 respondents had quantity surveying qualifications. 36% of them had 6–10 years of experience, while those who had more than 15 years of experience represented 14.7% of the population. About 60% (33.3% + 26.7%) of the respondents were from CIDB Level 4 companies, and most of the respondents' companies under the general building classification accounted for 38.7%. Most of the respondents' companies have done 1–5 projects under the CIDB level classification. Most of those respondents have between 0 and 5 years of experience, accounting for 37.3% of the population. About 42.7% of the participants have done 1–5 projects for the organs of the state, while 9.3% have never worked with the state before. EMEs accounted for 66.7% of the respondents, while QSEs accounted for 33.3%. Looking at access to public sector construction projects, more than half of the respondents have accessed 0–5 state-owned construction projects , which is a major problem. The majority of the respondents' companies have equal to or less than 5 years of experience in the construction industry, which roughly equates to approximately 1 project per year when compared to the projected number of projects executed in the public sector. Therefore, contractors are still encountering hurdles in procuring access state-owned construction projects.

4.2.3 RESEARCH OBJECTIVE ONE (RO1): To assess available tendering types, processes and procedures undertaken by the emerging contractors in bidding for public sector contracts

This section presents the tendering types, processes and procedures undertaken by emerging contractors in bidding for public sector contracts. As stated in the literature, when South Africa transitioned into a democratic state in 1994, it introduced the Constitution of South Africa, which contained Section 217 dealing with procurement (Ngobeni, 2011). Consequent to this, the government introduced various acts and frameworks governing how the state should procure the services, including construction work from private entities. The study revealed that, emerging contractors are mainly aware of the CIDB and B-BBEE Acts more than any other framework policies. This was also confirmed by the respondents, who stated that they mainly focus on meeting qualifying requirements, but they do not understand how those acts work. The PPPFA ranked No. 6 (second last), indicating that very few respondents understand this act. The PPPFA and its regulations is a procurement act, which governs how the tendering process should be implemented by the state. The respondents have a slim to no understanding of how this framework act will affect their participation in state-owned entity projects. As emphasised by Faraji *et al*. (2022), tendering processes in a very crucial element of the contractor's business process in accessing work and cannot be separated in the construction procurement, thus understanding those acts is very important. This was further re-affirmed by Tylor (2019) in his article that this process might seem easier and reasonable but this where the problem emanates as there is little to slim understanding of how the process works.

The study further revealed that JBCC was the most understood and frequently used standard contract document. This was followed by the GCC document which is mainly used for civil engineering works. FIDIC was the least used contract, with M = 2.147 for understanding and M = 1.800 for use. The study also revealed that most respondents understood and sourced most of their work through open tendering, followed by selected tendering. In this case, this might be a good indication, as most of the organs of state use open tendering to solicit tenders. With subcontracting being one of the models defining the

characteristics of the construction industry (Martin and Benson, 2021), the study further found that most of the respondents frequently got involved in "construction only" contractual arrangements, followed by subcontracting, and had the least involvement in "design and build" contractual arrangements. The majority of the respondents' companies got some work through SMME development programmes more than emerging contractor development programmes. This indicates that government contractor development initiatives are less balanced than they should be.

4.2.4 RESEARCH OBJECTIVE TWO (RO2): To determine the procurement challenges experienced by the emerging contractors in public sector construction project procurement

The research study was carried out to explore challenges experienced by emerging contractors in public sector construction project procurement. The study revealed that the challenges discussed in the literature do exist. According to Thwala and Phaladi's (2009) study, challenges faced by emerging contractors can be distinguished between those that affect small-scale contractors and those that affect medium-sized contractors. Late payments by the government and political interferences were rated as the highest challenges. This is in line with and reaffirms Merana's (2018) findings, indicating that late payments for work done ultimately causes project delays while political interference adversely affects the project delivery.

The study also found competition to be one of the major challenges experienced by emerging contractors in public sector construction project procurement. This is in line with the findings by Thwala and Phaladi (2009), who confirmed that emerging contractors are facing increased competition due to a long-term real decline in demand. Lack of pricing knowledge and techniques is also among the top five significant challenges, which is a major problem. If a contractor cannot properly price the documents, it will affect cash flow and result in project cost overruns due to under-pricing of certain items in the pricing documents, which may result in financial losses. Type of procurer and contract were ranked as the least significant factors; however, this is argued by PWC *et al.'s* (2014) study on

SME's Access to Public Procurement Markets, which found that dealing with the organs of state differs significantly from dealing with a private sector. This is due to red tape in the organs of state projects compared to private sector projects.

Those challenges, as discussed in the previous chapters, were further grouped into five groups, namely: (1) capital and business operations-related challenges; (2) procurement challenges; (3) accounting and management challenges; (4) tender/bid documents related challenges; and (5) tender administration related challenges.

4.2.5 RESEARCH OBJECTIVE ONE (RO3): To identify the impacts of the procurement challenges for emerging contractors in construction project performance

This section presents the impacts of the challenges experienced by emerging contractors in delivering projects. According to the study by Muzondo and McCutchen (2019), most emerging contractors' failures are primarily related to factors that are beyond the control of the contractor and/or the management. The study found that the above challenges that affect emerging contractors have a significant impact on their performance and keeping the business afloat during trying times. Among the seven challenges listed, the study found that project cost overruns and time overruns have consequential impacts that rank high in the list. The South African standard contract agreements used in the construction industry include punitive measures for non-performers. If the contractor does not finish on time, penalties for late completion are applicable. This will consequently affect the cost of the project. The impacts listed are interlinked; for instance, if the contractor cannot make a profit out of the project, it will result in a cost overrun, leading to project abandonment and the contractor being blacklisted. This is affirmed by Jardine's (2013) presentation on collusive bidding: that small contractors do not have the capacity to bear the cost overruns, unlike the big generic contractors, who have a strong balance sheet and are able to spread the risk across the business.

4.2.6 RESEARCH OBJECTIVE ONE (RO4): To evaluate the measures to mitigate procurement challenges experienced by emerging contractors in procuring construction projects

This section presents and evaluation of measures aimed at mitigating procurement challenges experienced by emerging contractors as suggested by other scholars. From the list of eleven mitigative measures, timeous payments ranked the highest with M = 3.68, followed by the training of emerging contractors in all aspects of the industry in order to access and correctly manage their projects. According to the study by Merana (2018), emerging contractors should participate in training and mentorship programmes to eliminate financial mismanagement and develop their skills to manage sustainable businesses.

This could then be followed by providing more comprehensive information measures during the tendering stage in order to assist the bidders in better pricing their bids. Early payment arrangements were also identified as one of the top five mitigative measures that will assist the contractors in maintaining a healthy cash flow during the project. This is affirmed by Govender (2017) who opined that procurement policies should emphasise the payment of contractors by the government. Alleviation of administrative burdens is also one of the major measures in line with recommendations provided by Muzondo and McCutchen (2019) that procurement policies need to be amended.

CHAPTER FIVE

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presented the conclusions and recommendations emanating from the study's objectives and findings.

5.2 Conclusion

The study investigated challenges experienced by emerging contractors in procuring construction projects in South Africa, with the focus on one province which is Gauteng. The sample was drawn from Gauteng Province—the economic hub of the country. An exploration of previous studies revealed that there has been very limited research undertaken on these challenges. Previous studies have revealed at least twenty-one challenges experienced by emerging contractors in South Africa. Furthermore, the study looked at neighbouring and developing countries that are most likely prone to similar challenges. Through a quantitative approach, a questionnaire survey revealed that the emerging contractors in Gauteng unanimously agree with the existence of those challenges and the impact resulting from them. Previous scholars have also identified several mitigating measures that can be employed to overcome those challenges.

The study, in its point of departure, acknowledged that the study was limited to one province and thus those findings are limited to the results obtained from Gauteng. Thus, further studies in other provinces on similar focus of appraising the procurement challenges confronting emerging contractors in public sector projects in South Africa are to be conducted to offer a more diverse view of the objectives.

5.3 Recommendations

Based on the findings from the questionnaire survey and literature, the following recommendations as mitigating measures were drawn, which will aid in minimising or eliminating those challenges:

- Government and policy makers should continue to strengthen their procurement policy framework to ensure that sufficient participation of previously disadvantaged individuals in the economy;
- Government should encourage CIDB to implement and facilitate training programmes with the emerging contractors and employ individuals within the implementing agents to facilitate those training programmes;
- After-service programmes on the closeout of the projects should be executed to obtain feedback from the contractors;
- Major contractors should be encouraged through transformation policies to transfer as many skills as possible to emerging contractors;
- With the payment of contractors by employers being a major challenge, the government should make early payment arrangements and/or provide advance payments for emerging contractors in order to assist them with cash flow;
- An interest-free funding model for emerging contractors should be established;
- The development of emerging contractors by big construction firms should be included in the CIDB requirements for maintaining their CIDB status, failing which will result in the downgrading of their status, thus the B-BBEE approach.

5.4 Area for further studies

The study recommends that the following studies be conducted to close the gaps:

- Construction funding models for construction projects aimed at emerging contractors;
- Emerging contractors early engagement in projects;
- Adoption of Cost Plus contracts for emerging contractors through NEC3/4 contracts; and
- As this study focused in the Gauteng province, further studies on same or similar focus be conducted in other eight provinces to offer realistic and holistic picture of the country.

REFERENCES

Aigbavoa, C.O., Aghimien, D. Oke, A. and Mabasa, K. 2018. A preliminary study of critical factors impeding the growth of SMMEs in the construction industry in Lusaka, Zambia. Proceedings of the International Conference on Industrial Engineering and Operations Management, Washington DC, USA, September 27-28, 2018

Ali, I.F., Awad, S.H., and Abdulsalam, D. 2020. Factors affecting the performance of small-scale construction firms in Nigeria: *Nigerian Journal of Technology (NIJOTECH).* 4(39): 981-991

Ambe, I.A. 2016. Public Procurement Trends and Developments in South Africa: *Research Journal of Business and Management.* 3(3): 277-290.

Ambe, I.A., Badenhorst-Weiss, J. 2012. Procurement Challenges in the South African Public Sector: *Journal of transport and supply chain management*. 6(1): 242-261.

Amoah, C. and Bikisha, L. 2021. Emerging Contractors Management and Planning skills to overcome risk factors: *International Journal of Building Pathology and Adaptation*. Vol. ahead of printing. No. ahead of printing.

Arthur-Aidoo, B.M, Aigbavboa, C.O., and Thwala, D. 2016. Assessment of Growth Challenges among small and medium-sized construction firms in Ghana. Emerging trends in construction organisational practices and project management knowledge area. 9th CIDB Post Graduate conference, February 2-4, 2016, Cape Town, South Africa

Bacon-Shone, J. 2015. Introduction to Quantitative Research Methods: A guide to research Postgraduate Students. Hong Kong. Graduate School, The University of Hong Kong

Baiden, B.K. 2006. Framework for the Integration of the project delivery team. Doctor of Philosophy. Loughborough University.

Balogun, O.A., Nazeem, A. and Agumbe, J.N. 2016. Determinants Predicting Credit Accessibility Within Small and Medium Sized Enterprises in South African Construction Industry. *Procedia Engineering*. 164.473-480.

Bangani, E.S., and Mewomo, M.C. 2019. Procurement Challenges in State-Owned construction projects in South Africa.

Booi. M. 2013. Construction Industry Collusion Persist Despite regulations. Available at: https://youtu.be/u_-WY6T0tcg (Accessed 18 June 2019).

Bowen, P., Akintoye, A., Pearl, R., and Edwards, P. 2007. Ethical Behaviour in the South African Construction Industry: *Construction Management and Economics*. 25(1). 631-648. Available at: https://researchbank.rmit.edu.au/view/rmit:3126

Bradford University. n.d. Introduction to Research and Research methods. (no publisher).

Bryman, A. 2004. Physiotherapists' and Occupational Therapists' Perception of the assessment of stroke patients for musculoskeletal rehabilitation in the UK National health service. Social Research Methods. Second Edition. Oxford University Press. New York.

Chuai, X., Lu, Q., Huang, X. Gao, R., and Zhao, R. 2020. China's Construction industry – Linked Economy – Resources – Environment Flow in International Trade. *Journal of Cleaner production*. 278(2021)

Construction Industry Development Board. 2007. Best Practice Guideline #A4. Evaluating Quality in Tender Submissions.

Construction Industry Development Board. 2013. Subcontracting in the South African Construction Industry: Opportunity for Development CIDB.

Construction Industry Development Board. 2017. The drivers of the cost of public sector construction: Assessment and recommendations. Pretoria.

Construction Industry Development Board. 2022. Annual Report 2021/2022 Period

Construction Industry Development Board. N.d. National contractor Development Programme. Available: cidb.org.za/contractordev/pages/national-contractor-development-framework

Creswell, J.W. 2014. Research Design: Qualitative, Quantitative and Mixed Method Approaches. 4th Ed. California. SAGE International Inc.

Creswell, J.W., and Plano Clark, V. L., 2011. Designing and Conducting Mixed methods Research. Second Edition, Sage Publication, Los Angeles

Ellen, S. 2020. Slovin's Formula Sampling Techniques. Scienceing. https://sciencing.co./slovins-formula-sampling-techniques-5475547.html

Eyiah, A.K., 2001. An integrated approach to financing small contractors in developing countries: A conceptual model, Construction Management and Economics. 19(5):511-518

Eyis, D. 2016. The Usefulness of Quantitative and Qualitative Approaches and Methods in Researching Problem-Solving Ability in Science education Curriculum. *Journal of Education and Practice.* 7(15).

Faraji, A., Rashidi, M., Eftekhani, N.A., Perera, S., Mani, S. 2022. A bid/mark-up decision support model in contractors tender strategy development phase based on project complexity measurement in the downstream sector of petroleum industry. *Journal of Open innovation: technology market, and Complexity.* 8(33)

Govender, N. 2017. An Investigation into the management of successful emerging general building and civil engineering contractors. Degree of Master of Science in Engineering. University of Witwatersrand.

Hair, J.F., Anderson, R.E., Babin, B.J., and Black, W.C. 2010. Multivariate data Analysis. 7th Ed., Peason Prentice Hall. NJ

Jardine. R. 2013. Construction Industry Collusion Persist Despite regulations. Available at: https://youtu.be/hyKbLcTYRO4 (Accessed 18 June 2019).

Jonker, J. and Pennink, B. 2010. The essence of research methodology: A concise guide for Masters and PhD students in Management Science. New York.

Kadefors, A. 2004. Trust in Project Relationships – Inside The Black Box. *International Journal of Project Management.* 22(3). 175-182

Kasper, L. and Puddephalt, A. 2012. Benefits of Transparency in Public Procurement for SME's. General Lessons for Egypt.

Lakshman, M., Sinha, L., Biswas, M., Charles, M., and Arana, N.K. 2000. Quantitative vs Qualitative Research Methods. Department of Pediatrics. All India Institute of Medical Sciences. New Delhi. *Indian Journal of Pediatrics*. 67(5)

Malkewitz, C.P., Schall, P., Meesters, C. and Hardt, J. 2023. Estimating Reliability: A comparison of Cronbach's α, McDonald's wt and the Greatest lower Bound. *Social Sciences and Humanities Open.*, *7*(1), p.100368.

Martin, L. and Benson, L. 2021. Relationship quality in construction projects: A subcontractor perspective of principal contractor relationships. *International journal of project management*. 39(6), 633-645

Martin, L. and Root, D. 2010. Emerging Contractors in South Africa: Interactions and learning. *Journal of Engineering, Design and Technology*. 8(1): 64-79

Merana, A.A., 2018. An Exploration of Funds Management by Emerging Contractors. Master of Built Environment. Durban University of Technology.

Mofokeng, T.G. 2012. Assessment of the causes of failure among small and medium size: Construction companies in the Free State Province. Degree of Magister Technologiae. University of Johannesburg.

Mohlala, F.T. 2015. The Relationship between Project Performance of Emerging Contractors in Government Infrastructure Projects and their Experience and Technical Qualification: An Analysis of 30 Projects Concluded in the Mpumalanga Province Over the 2011-2013 Period. Master of Engineering. University of Witwatersrand.

Mothobiso, C. 2016. Main Contractors' Design Contributions to the Delivery of Green Buildings. Master of Science in Building. University of Witwatersrand.

Muzondo, F.T., McCutcheon, R.T., 2018. The relationship between project performance of emerging contractors in government infrastructure projects and their experience and technical qualifications. *The Journal of the South African Institute of Civil Engineering*. 60(4):25-33.

Naoum, S.G. 1998. Dissertation Research and Methods for Construction Students. First Edition. Oxford: Elsevier Butterworth - Heinemann

Ncwadi, M.R., and Dangalazana, T. 2005. An Exploratory Study into the challenges facing the emerging contractors involved in the construction of low cost housing in Wells Estate and Ikamvelihle Townships in The nelson Mandela Metropole, South Africa. World Congress on Housing. Transforming Housing Environment Through Design. September 27-30, 2005, Pretoria, South Africa

Nemaenzhe, P.P., 2010. Retrospective Analysis of Failure Causes in South African Small Business. Degree of Doctor of Small Business Management and Entrepreneurship. University of Pretoria

Ngobeni. S. 2011. An analysis of the tender process in national government in South Africa. Degree Master of Business Administration. North West University.

Ntuli, B. and Allopi, D. 2013. Capacity Challenges facing Civil Engineering Contractors in KwaZulu Natal. *International Journal of Engineering and Innovation Technology*. 2(11):90-97.

Nunayon, S.S., Olanipekin, E.A., and Famakin, I.O. 2020. Determining Key Drivers of Efficient Electricity Management Practizes in Public Universities in Southwestern Nigeria: An Empirical Study. *International Journal of Sustainability in higher Education*. 21(2), 281-314

Ogoe, E.K. 1993. Decentralization and Local Government Reforms in Ghana: GNDC's Decentralization Policies: the Case of Ahanta West District Assembly. Available at http://books.google.com.gh/books?id=xoFoMEACAAJ

Oppennheim, A.N. 2003. Questionnaire Design, Interviewing and Attitude Measurements. London Continuum

Opus Kinetic. 2019. https://www.opuskinetic.com/2019/04/4-types-of-tender-and-tendering-processes/

Pallant, J. (2011): SPSS Survival Manual: A Step by Step guide to data analysis using SPSS. 4th Edition. China: Everbest Printing Company

Patel, M. and Patel, N. 2019. Exploring Research Methodology: Review Article. *International Journal of Research & Review*. 6(3):48-55

Patton, M.Q. 2002. Qualitative Research and Evaluation Methods. 3rd Sage Publications: Thousand Oaks, CA

Phiri, J.C. 2020. Challenges faced by entry grades 5&6 level contractors for building works: A case study of contractors in Kaputa District – Zambia. Master of Science in project Management. School of Business and Information Management

PWC, ICP, GHK and ECORYS. 2014. SME's Access to Public Procurement Markets and Aggregation of Demand in the EU. Europe.

Shwala, L. 2018. Challenges Facing Emerging Contractors in KwaZulu Natal. Master of Science in Building. University of Witwatersrand.

Sibiya, M. Aigbavboa, C. and Thwala, L. n.d. Construction Project Key Performance Indicators: A Case of the South African Construction Industry. MTECH, Department of Construction Management and Quantity Surveying. University of Johannesburg

Sitharama, S. and Hoque, M. 2016. Factors affecting the performance of small and medium enterprises in KwaZulu Natal, South Africa. Problems and perspective in Management. 14 (2-2): 277-288

South Africa, Construction Industry Development Board. 2011. National Contractor Development Programme. C:/Users/esban/Downloads/NCDP-Summary-Framework.pdf

South Africa, Department of Justice. 1996. *The Constitution of The Republic of South Africa Act 108 of 1996.* Pretoria. Government Printing Works.

South Africa, Department of Trade and Industry. 1998. *Competition Act 89 of 1998.* Pretoria. The Presidency.

South Africa, Department of Trade and Industry. 2004. *Broad-Based Black Economic Empowerment Act 53 of 2003.* Pretoria. The Presidency.

South Africa. Department of Justice. 2000. *Promotion of Administration Justice Act 3 of 2000.* Pretoria. The Presidency.

South Africa. Department of Justice. 2000. *Promotion of Equality and Prevention of Unfair Discrimination Act 4 of 2000.* Pretoria. The Presidency.

South Africa. Department of Justice. 2004. *Prevention and Combating of Corrupt Activities Act 12 of 2004. Pretoria*. The Presidency.

South Africa. Department of Public Works. 2000. *Construction Industry Development Board Act 38 of 2000*. *Pretoria*. Public Works.

South Africa. Department of Public Works. 2000. *Construction Industry Development Board Act 38 of 2000*. *Pretoria*. Public Works.

South Africa. Department of Public Works. 2019. Tender value range Adjustment in Terms of the Construction Industry Development Regulations, 2004 (as amended). Notice 357 of 2019. Department of Public Works.

South Africa. National Treasury. 1999. *Public Finance Management Act 1 of 1999.* Pretoria. National Treasury.

South Africa. National Treasury. 2000. *Preferential Procurement Policy Framework Act 5 of 2000.* Pretoria. National Treasury.

South Africa. National Treasury. 2003. Local Government: *Municipal Finance Management Act 56 of 2003.* Pretoria. National Treasury.

South Africa. National Treasury. 2017. *Preferential Procurement Policy Framework, 2000: Preferential Procurement Regulations, 2017.* Pretoria. National Treasury.

Sweis, R.J., Bisharat, S.M., Bisharat, L., Sweis, G. 2014. Factors Affecting Contractor Performance on public construction projects. *Life Science Journal*, *11*(4), pp.28-39.

Taylor. G. 2019. South Africa Construction Industry – Some things to think about and act on! Available at: https://www.linkedin.com/pulse/south-african-construction-industry-some-things-think-gavin-taylor. (Accessed 07 June 2019).

Thwala, W.D. and Mvubu, M. 2008. Current Challenges and Problems facing Small and Medium Size Contractors in Swaziland. *Africa Journal of Business Management*. 2(5):93-98. Available at: http://www.academicjournals.org/AJBM.

Thwala, W.D. and Phaladi, M.J. 2009. An Exploratory Study of Problems facing Emerging Contractors in North West Province of South Africa. *African Journal of Business Management*, *3*(10), p.533.

Walliman, N. 2011. *Research Methods: The Basics*. 1st Ed. Abingdon. Routledge Publishers.

Watermeyer, R. 2012. Changing the construction procurement culture to Improve Project Outcomes. Procurement Law. Available at: www.ioptions.co.za/sites/default/files/rbwpapers/P7%2B%20P8%20papers/P7-5.pdf (Accessed 30 July 2019).

Wium, A.M. and Louw, B. 2018. Mixed Method Research: A tutorial for speech-language Therapist and Audiologists in South Africa. *South African Journal of Communication Disorders*. 65(1):1-13

Yin, R.K. 2003. Case Study Research Design and Methods. Applied Social Research Methods Series. 3(5) Sage Publications

APPENDICES

APPENDIX A - LETTER OF INFORMATION

Title of the Research Study: An appraisal of procurement challenges facing emerging contractors in public sector project in South Africa

Principal Investigator/s/researcher: Sibabalo Edmond Bangani, Master of Built Environment

Co-Investigator/s/supervisor/s: Dr. MC Mewomo

Brief Introduction and Purpose of the Study: To determine measures to mitigate procurement challenges experienced by emerging contractors in procuring construction projects.

Good day,

I am Sibabalo Edmond Bangani, a master's student from Department of Construction Management and Quantity Surveying, from Durban University of Technology, Steve Biko Campus. I am currently conducting research on "*An appraisal of procurement challenges facing emerging contractors in public sector project in South Africa*". Therefore, this letter serves to invite you to participate in the study being undertaken. The aim of this study is to determine measures to mitigate procurement challenges experienced by emerging contractors in procuring construction projects. The below questionnaire therefore seeks:

- To assess the processes and procedures available and undertaken by the emerging contractors in bidding for public sector contracts.
- To explore the procurement challenges experienced by the emerging contractors in public sector construction project procurement.
- To assess the impacts of the procurement challenges for the emerging contractors in construction project performance; and
- To determine measures to mitigate procurement challenges experienced by emerging contractors in procuring construction projects.

You are kindly requested to participate and complete the questionnaire below. The survey is completed on an anonymous basis and your participation is voluntary. At any given point in time, should you feel not comfortable to proceed with the participation, you may withdraw with no negative consequences to yourself and your business. The questionnaire will take approximately 15minutes of your time. The data received from you will be treated anonymously and used for purpose intended only. Please also note that there are no foreseeable or potential risks associated with you and your participation in this research. Your participation will be highly appreciated in this regard.

Should you have any queries, please do not hesitate to contact me on cell: 073 511 6628 or E-mail: esbangani@gmail.com and modupem@dut.ac.za.

Thank you in anticipation of your positive response to this request.

CONSENT

Full Title of the Study: An appraisal of procurement challenges facing emerging contractors in public sector project in South Africa

Names of Researcher/s: Sibabalo Edmond Bangani, Master of Built Environment

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, Sibabalo Edmond Bangani, about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: _____,
- I have also received, read and understood the above written information (Participant Letter of

  Information) regarding the study.

- I am aware that the results of the study, including personal details regarding my sex, age, and year of experience in construction will be anonymously processed into this research study report.

- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.

  I may, at any stage, without prejudice, withdraw my consent and participation in the study.

- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may

  relate to my participation will be made available to me.

Full Name of Participant	**Date**	**Time**	**Signature / Right Thumbprint**

I, Sibabalo Edmond Bangani, herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Full Name of Researcher	**Date**	**Signature**
Full Name of Witness (If applicable)	**Date**	**Signature**
Full Name of Legal Guardian (If applicable)	**Date**	**Signature**

APPENDIX B - QUESTIONNAIRE SURVEY

TOPIC: An appraisal of procurement challenges facing emerging contractors in public sector project in South Africa

Section 1: Biographical Information

This section of the questionnaire refers to background information. Please note that your response will remain anonymous. Your co-operation is appreciated.

1.1. Owner/Director of the company

Please indicate with "X" in the appropriate box.

COMPANY OWNERS' GENDER			
Male		Female	

COMPANY OWNERS' AGE GROUP	
Between 20 - 25 years	
Between 26– 30 years	
Between 31 - 35 years	
Between 36 – 40 years	
Between 41 – 45 years	
Between 46 – 50 years	
Above 50 years	

COMPANY OWNERS' HIGHEST QUALIFICATION

Grade 10	
Grade 11	
Matric/Grade 12	
Higher certificate	
National Diploma	
Degree	
Master's Degree	
Honor's Degree	
Doctorate Degree	
Other (Please specify): …….	

COMPANY OWNERS' YEARS OF EXPERIENCE	
1-5 Years	
6 – 10 Years	
11 – 15 Years	
15 Years and Above	

OWNER'S CONSTRUCTION QUALIFICATION	
CONSTRUCTION MANAGEMENT/STUDIES	
CIVIL ENGINEERING	
QUANTITY SURVEYING	
ARCHITECTURE/ARCHITECTURAL TECHNOLOGY	

LAND SURVEYING	
BUILDING ECONOMICS/SCIENCE	
OTHER (Please specify):	

PARTICIPANTS FORMAL TRAINING ON PROCUREMENT	
Please indicate any formal training you have ever received pertaining to procurement	
Tender documents compilation training	
Price analysis and pricing	
Cost controlling and construction monitoring	
Broad-Based Black Economic Empowerment Training	
Legal Aspects in Purchasing and Supply	
Strategic Supply Chain Management	
None	
Other (Please specify)…….	

1.2. Company information

Please indicate the CIDB grading level of your company.

CIDB GRADING	
CIDB LEVEL 4	
CIDB LEVEL 4PE (Potential Emerging)	
CIDB LEVEL 5	

CIDB LEVEL 5PE (Potential Emerging)	

CIDB CLASSIFICATION	
GENERAL BUILDING	
CIVIL ENGINEERING	
OTHER (Please specify):	

NUMBER OF PREVIOUS PROJECTS CARRIED OUT IN VALUE	
LEVEL 1 - R0 to R200 000.00	
LEVEL 2 – R500 000.00 to R1 000 000.00	
LEVEL 3 – R1 000 000.00 to R3 000 000.00	
LEVEL 4 – R3 000 000.00 to R6 000 000.00	
LEVEL 5 – R6 000 000.00 to R10 000 000.00	
ABOVE R10 000 000.00	.

COMPANY'S EXPERIENCE IN CONSTRUCTION	
0-5 Years	
6 – 10 Years	
11 – 15 Years	
More than 15 Years	

TOTAL NUMBER OF PROJECTS EXECUTED SINCE INCEPTION	
1-5 Projects	
6 – 10 Projects	
11 – 15 Projects	
More than 15 Projects	

TOTAL NUMBER OF **PUBLIC SECTOR PROJECTS** EXECUTED SINCE INCEPTION	
1-5 Projects	
6 – 10 Projects	
11 – 15 Projects	
More than 15 Projects	

COMPANY'S ANNUAL TURNOVER	
EME (R0.00 to R10 000 000.00)	
QSE (R10 000 000.00 to R50 000 000.00)	
OTHER (Please specify):	

DEPARTMENTS WITHIN THE BUSINESS	
ESTIMATING AND PRICING	
COMMERCIAL (QUANTITY SURVEYING)	

BUYING AND PROCUREMENT	
SALES	
PRODUCTION	
HEALTH AND SAFETY	
ACCOUNTS AND CREDITORS	
PLANT	
OTHER (Please specify):	

2. **Section B: This section explores issues relating to tendering types and procedures for public procurement construction contracts in general and for emerging contractors.**

2.1. In a scale of 1-5, please indicate your level of understanding of the below mentioned regulatory framework. Use the following rating scale 1 = Do not know, 2 = Basic Understanding, 3 = Sound Knowledge and Introductory experience on implementation, 4 = Experienced and, 5 = Highly experienced).

Scale:	**1**	**2**	**3**	**4**	**5**
The Constitution of South Africa					
Public Finance Management Act					
Preferential Procurement Policy Act					
Preferential Procurement Regulations					
Broad-Based Black Economic Empowerment					
Construction Industry Development Board Act					

Promotion of Equality and Prevention of Unfair Discrimination					

2.2. In a scale of 1-5, please indicate your level of understanding of the below mentioned contract documents. . Use the following rating scale 1 = Do not know, 2 = Basic Understanding, 3 = Sound Knowledge and Introductory experience on implementation, 4 = Experienced and, 5 = Highly experienced).

Scale:	**1**	**2**	**3**	**4**	**5**
New Engineering Contracts (NEC3/4)					
Joint Building Contracts Committee (JBCC)Series					
General Conditions of Contract (GCC)					
MBSA Domestic Subcontractor agreement					
FIDIC Red and Yellow Book					

2.3. Using your understanding of the above regulatory framework, please indicate how frequent does your organisation enter into contracts governed by the following standard contract documents. Use the following rating scale 1= Not at all, 2 = Seldom/Rarely, 3 = Neutral, 4= All times and 5 – Always).

Scale:	**1**	**2**	**3**	**4**	**5**
New Engineering Contracts (NEC3/4)					
Joint Building Contracts Committee (JBCC)Series					

General Conditions of Contract (GCC)					
MBSA Domestic Subcontractor agreement					
FIDIC Red and Yellow Book					

2.4. Using a scale of 1-5, please indicate your level of understanding of the below types of tendering Use the following rating scale 1= Not at all, 2 = Seldom/Rarely, 3 = Neutral, 4= All times and 5 – Always).

Scale:	**1**	**2**	**3**	**4**	**5**
Open tendering					
Selected tendering					
Negotiated tendering					

2.5. Using a scale of 1-5, please indicate how often do you get involved in project procured in any of the below mentioned types of tendering Use the following rating scale 1= Not at all, 2 = Seldom/Rarely, 3 = Neutral, 4= All times and 5 – Always).

.

Scale:	**1**	**2**	**3**	**4**	**5**
Open tendering					
Selected tendering					
Negotiated tendering					

2.6. Using a scale of 1-5, please indicate how frequently do you get involved in projects procured through any of the following contract arrangements (1- Not at all, 2 = Seldom/Rarely, 3 = Neutral, 4 =often and 5 =Always).

Scale:	**1**	**2**	**3**	**4**	**5**
Construction only					
Design and build					
Subcontracting					
Joint bidding (JV)					
Other (please specify): ……					

2.7. Using a scale of 1-5, please indicate how frequently do you get projects through the following programmes for emerging contractors Use the following rating scale 1= Not at all, 2 = Seldom/Rarely, 3 = Neutral, 4= often and 5 – Always).

Scale:	**1**	**2**	**3**	**4**	**5**
SMME development programmes					
Emerging contractor's development programmes					
Other (please specify): ……					

3. Section C: Procurement challenges facing emerging contractors in accessing public sector construction contracts.

3.1. It is the public perception that emerging contractors experience a lot of challenges which hinder their success in making it to the next CIDB grading level. With your

knowledge of the construction procurement industry, please indicate your level of agreement of the following factors as challenges facing emerging contractors in your area of practice. Use the following rating scale 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 =strongly agree).

Scale:	**1**	**2**	**3**	**4**	**5**
Lack of construction management skills					
Lack of access to finance					
Poor record keeping					
One-man-show (sole management)					
Lack of understanding of pricing techniques					
Late payments by government					
Poorly managed cashflow					
Tender procedures too complicated					
Political interference					
Complexity of procurement regulations and their difficulty in implementation					
Overall contract value for single award					
Type of contract					
Type of procurer					
The publication of prior information					
Tender procedure chosen					
Selection criteria used					
Price of tender documents					
Too much competition					

Insufficient bidding information					
Administrative burden					
Insufficient or limited time to complete bids					
Other (please specify): ……...					

4. Section D: Impact of procurement challenges facing emerging contractors in public sector construction contracts' performance

4.1. With the acknowledgement of existence of the above procurement challenges, to what extent do you agree with the following impacts for emerging contractors in construction projects' performance? Using the following rating scales 1= strongly disagree, 2 = disagree, 3 =neither agree nor disagree, 4 = agree, 5 = strongly agree).

Scale:	**1**	**2**	**3**	**4**	**5**
Loss of profits					
project costs overruns					
Time overruns					
Abandoned projects/incomplete projects					
Liquidation of emerging contractors					
Blacklisting of contractors by creditors					
Lack of access to public construction contracts					
Other (please specify): ……					

5. Section E: Measures available to mitigate procurement challenges experienced by emerging contractors in procuring public sector construction projects

5.1. To what extent do you agree that the following measures to mitigate procurement challenges facing emerging contractors would facilitate access for emerging contractors to public construction procurement? Using the following rating scales 1= strongly disagree, 2 = disagree, 3 =neither agree nor disagree, 4 = agree, 5 = strongly agree).

Scale:	**1**	**2**	**3**	**4**	**5**
Breaking down tenders into lots					
Avoiding disproportionate technical or financial requirements					
Emphasis on quality and allowing flexibility					
Providing more and better information					
Providing sufficient time to complete bids					
Better dialogue between bidders and procurers					
Alleviating administrative burden					
Payments be made on time					
Early payment arrangements					
Reducing or eliminating cost of tenders					
Training of emerging contractors					
Other (please specify)…….					

Thank you for your response!