

**SME access to public procurement in South African water infrastructure
projects**

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ABSTRACT

Historically, public procurement literature had been a neglected field in management science despite its importance to service delivery. Massive budgets are spent by governments globally through public procurement; a figure reported in 2020 to accounts for 15-20% of global gross domestic product (GDP). Government spending through public procurement is one of the levers that can be utilised to stimulate economic growth and create employment. This can be done through small and medium-sized enterprises (SMEs), which have been found to have a major impact in employment creation and eventually poverty eradication. The study set out to discover the challenging issues facing the built environment sector, in particular, the barriers and enablers of SME access to public procurement in South African water infrastructure projects, and ultimately determine what collaborative efforts are required by all stakeholders to improve the access of SMEs in public procurement.

An exploratory and qualitative research methodology was adopted. Semi structured interviews were held with 15 experienced participants within the water sector. The study revealed valuable insights, namely, the challenges currently facing the built environment sector, in particular, the barriers and enablers of SME access to public procurement in South African water infrastructure projects. In addition, these include collaborative efforts required by all stakeholders to improve the access of SMEs in public procurement. The findings gave rise to the proposed framework for providing SME access to public procurement in South African water infrastructure projects as well as the stakeholders responsible to do. Whilst the participants requested all stakeholders to act ethically in their public procurement dealings within the water infrastructure space, some findings were specific to certain stakeholders such as:

- Government departments and public entities need to review their current procurement strategies, ensure that there is no ambiguity between policy statements, be supportive to SMEs, ensure investment inflows into the sector for project execution, and also invest in the much required skills for the sector which are contractors, engineers and artisans.
- Contractors need to provide support to SMEs through the provision of guarantees and sureties, implement skills transfer programmes, and also involve SMEs in their standing supplier agreements.

- Consulting engineers need to implement skills transfer programmes, to develop innovative designs using modern technology as an enabler to SME access to public procurement.
- Communities need to be made aware of, and stop sabotaging projects within their own localities results in cost overruns that are detrimental to the successful completion of the projects for their own benefit.
- SMEs need to ensure that they are compliant with the laws and regulations of doing business in South Africa. In addition, to be passionate about what they do, and to learn the governance practices within the public procurement system.

KEYWORDS

Public procurement, SME access, SME development, water infrastructure.

DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Tsakane Zwane

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LIST OF ABBREVIATIONS

CIDB	Construction Industry Development Board
DPW	Department of Public Works
DSBD	Department of Small Business Development
GDP	Gross Domestic Product
GTAC	Government Technical Advisory Centre
IRSP	International research study of public procurement
MENA	Middle East and North America
NCDP	National Contractor Development Programme
NDP	National Development Plan
OECD	Organisation for Economic Cooperation and Development
PICC	Presidential Infrastructure Coordinating Committee
PPPFA	Preferential Procurement Policy Framework Act 2000
PSPC	Public Services and Procurement Canada

SAICE	South African Institution of Civil Engineering
SDG	Sustainable Development Goal
SEFA	Small Enterprise Funded Agency
SIDSSA	Sustainable Infrastructure Development Symposium South Africa
SME	Small and Medium-Sized enterprises
UN	United Nations
USA	United States of America

1. CHAPTER 1: INTRODUCTION TO RESEARCH PROBLEM

1.1. Introduction

Service delivery is achieved through public procurement. Therefore, making public procurement an important field in management science. Despite its importance, public procurement is still not a dependable management sub-field due to lack of theory (Flynn & Davis, 2014). The global unemployment rate and employment security remain a challenge for most countries in the world with 2.2 billion people reported to be unemployed, despite being eligible for employment (International Labour Office, 2019). One of the levers to address this problem is through SME access to public procurement. Public procurement accounts for 15-20% of GDP (Stoffel & Müngersdorff, 2020). SMEs have a role in assisting governments to realise their goals of employment generation, creating innovation in economies and eradicating poverty (Akenroye & Aju, 2013).

The supply of water and sanitation in South Africa has been argued to constitute the violation of human rights (South African Human Rights Commission, 2018). The department responsible also points out these challenges in their 2018 Water and Sanitation Master Plan (Department of Water and Sanitation, 2018). The poorest people in Eastern Cape, KwaZulu-Natal and Limpopo are the largely affected by water scarcity, not only due to the geospatial disparities from the apartheid government; but economical water scarcity attributed to lack of infrastructure investment (Mnisi, 2020). Despite all these challenges, government expenditure on infrastructure has been adjusted downwards every year since 2017, leaving construction companies with a great need for public projects (Watermeyer & Phillips, 2020). Government is on a quest to raise \$100 billion in new investment over the next five years to reignite the economy (Nkunjana, 2019). The anticipated huge investment by the South African government necessitates for research to be conducted on SME access to public procurement within the sector.

1.2. Reasons for selecting the problem

High unemployment rate faces most countries in the world. In 2018, 2.2 billion people who were eligible for employment were unemployed (International Labour Office, 2019). This figure makes up 38.8% of the global work force. Although this number includes those that were studying and involved in unpaid work, high unemployment rate is still a global issue. In the Middle East and North America (MENA) region, high unemployment rate has been identified as one of the most important socio-economic problem, even though some of the

countries like Israel have the most highly skilled labour force in the world (Karabulut, Haririan & Huseyin, 2010). Unemployment has a negative impact on the happiness and well-being of a population. Layard & Sachs (2020) found that low income and unemployment were mentioned as costly happiness risks.

In 2012, the United Nations (UN) developed universal goals at the conference on Sustainable Development in Rio de Janeiro. A total of 17 goals were created, these goals were classified as urgent universal goals required to address environmental, political and economic challenges faced by the world (Tykn, 2019). The main aim of these goals is to eradicate poverty through inclusive growth while maintaining a healthy and peaceful planet. Since then, world leaders have made significant progress, which has resulted in a decrease in the extreme poverty rate, through a focus on transformation of economies and societies. Notably, although progress is being realised, the shift in developmental strategies to achieve the targeted transformational targets is still not at the required scale to meet the goals set by 2030 (Spröte, 2010).

Furthermore, Spröte (2010) states that Sustainable Development Goal (SDG) 8 aims to “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all” (Spröte, 2010 p.14). Even though the world unemployment rate has recovered from the global financial crisis, challenges pertaining to youth unemployment and real growth per GDP capita for underdeveloped economies are still eminent. Moreover, it is projected that the real growth per GDP capita target of seven as set out by the UN for the year 2030 will not be met. Moreover, the United Nations (2019) reported that progress in a number these goals over the past four years had been slow and even regressed in some areas.

The Covid-19 pandemic has resulted in extreme uncertainty, where many organisations have closed down (Finn, Myshore & Usher, 2020). This has further exacerbated the issue of global unemployment. Whilst the extent of the damage is yet to be quantified, a study by a group of academics in vocational psychology have sought to explore amongst other things how this global unemployment crisis differs from the previous ones experienced and its disproportionate impact to the poor (Blustein, Duffy, Ferreira, Cohen-Scali, Cinamon & Allan, 2020)

1.3. Evidence that verifies the problem

Being unemployed is a disruptive life experience that may result in both physical and psychological illnesses. In the United States of America (USA) most of the population has lost faith in stable employment prospects, employment displacements are considered a norm in the US labour market (Brand, 2015). Moreover, consequences of unemployment can lead to stress related illnesses such as depression, anxiety and even suicide for the worst cases (Wanberg, 2012).

In South Africa, the unemployment rate is reported to be 29.1% (Statistics South Africa, 2020). The most affected group is the youth between the ages of 20-24 years with an unemployment rate of 61% percentage (Graham & Mlatsheni, 2015). Additionally, the highest number of unemployed graduates is attributed to young black people, which can be viewed as though the social injustices of the past are being reproduced, due the apartheid history of South Africa (Baldry, 2016). South Africa has a Gini coefficient of 63, which is classified as the worst inequality gap in the world (Beaubien, 2018). Furthermore, when the large population is unemployed it relies on government for support. Therefore, placing a tax burden on the productive population. Likewise, personal income tax remains the largest contributor of tax collected by the South African Revenue Service at 39% (Business Tech, 2017)

1.4. Relevance of this topic

The involvement of SMEs in public procurement is central to stimulating economic growth and creating employment (Ancarani, Di Mauro, Hartley & Tátrai, 2019). SMEs have been identified to have the biggest impact on employment creation due to their structural formation. Furthermore, SMEs are more innovative than established enterprises; they are quick to respond to the needs of the changing environment due to their financial and structural flexibility, which are less bureaucratic in nature (McEvoy, 2016). Additionally, SMEs play a role in assisting governments realise their roles of employment generation, creating innovation in economies and eradicating poverty (Akenroye & Aju, 2013).

Another factor is innovation, which creates competitive markets that contribute to economic growth, OECD (1996) argues that enterprises that are habitually innovating and hiring better skilled labour create more employment and offer better employment stability to their work force. Therefore, SME access to public procurement creates competitive markets, thus, ensuring appropriate usage of public funds (McEvoy, 2016). Innovation

also enhances the competitive advantage of enterprises, thus positioning enterprises for globalization. Although the quality of employment created by SMEs has been questioned by McEvoy (2016) and the risks associated with SMEs has also been noted by Akenroye & Aju (2013); paid work is the largest contributor to generating household income and alleviating poverty at an individual level (Spröte, 2010). Therefore, the role that SMEs play in creating employment is significant.

Governments have power in stimulating GDP for economic growth. One way to stimulate growth is through government expenditure. The spent on public procurement accounts for 15-20% of global GDP (Stoffel & Müngersdorff, 2020). Prioritising SMEs for public spending will ensure effective use of governments funds, in that the spending will not only achieve social benefit for the achievement of public needs through investment in infrastructure; but also an increase in economic benefit through more employment creation. However, there is still underrepresentation of SMEs access to public procurement (Akenroye & Aju, 2013; Ancarani et al., 2019; McEvoy, 2016; OECD, 1996).

This means that large and established enterprises continue to benefit from public procurement, even though SMEs are able to create the majority of employment in the market. For instance, in OECD countries, up to 70% of employment is created by SMEs, which constitute over 95% of the enterprises in those countries (OECD, 1996). Nevertheless, some countries are still battling in this regard. As an example, Akenroye & Aju (2013) found that nothing much has been done in Nigeria to improve SME access to public procurement.

1.5. Business need of the study

South Africa has developed a National Development Plan (NDP) which has aimed at ensuring that all South Africans have access to clean water by 2030 (National Planning Commission, 2010). Currently, only 88.8% of households in South Africa have access to clean water, a number that only increased by 7.6% since 1996. Moreover, only 46.4% of those households have access to piped water in their homes (Africa Check, 2017). The NDP's mandate is to inclusively grow the country's GDP by addressing the injustices of the past. For this to be achieved, SMEs will have to be prioritised and their share of the public procurement expenditure be increased. The reduction of poverty can only happen through employment creation for the majority of South Africans without employment (Watermeyer & Phillips, 2020).

Sustainable Development Goal (SDG) 6 aims to provide basic water and sanitation to all by 2030. To achieve this, countries would have to double their current progress, including improving water resource management (Spröte, 2010). In South Africa, the opposite is the case. Government expenditure on infrastructure has been adjusted downwards every year since 2017, the total adjustment is R303 billion over a 5 year period. Meanwhile, neglected maintenance needs for the existing water and wastewater infrastructure in the rural areas continues to rise. This has resulted in the deterioration of the infrastructure to a point where it was rated as unfit for purpose by the South African Institution of Civil Engineering (SAICE) in 2017 (Watermeyer & Phillips, 2020 "Performance of the sector", para. 2). Therefore, making a robust case for public funding to be urgently redirected towards the water sector. Public funding stimulates GDP, which produces economic growth and translates into better standards of living for the population. However, growth in GDP is not the only factor affecting employment creation; productivity levels also have an impact (Karabulut, Haririan, & Huseyin Bilgin, 2010).

The South African government legislated the Water Services Act 108 of 1997 to give effect to Chapter 2 of the South African Constitution, which outlines the rights of all South Africans to access sufficient food and water (Republic of South Africa, 1997). The Water Services Act highlights the importance of access to basic water and sanitation for all South Africans, as well as planning and coordination by Water Services Institutions towards meeting these rights (Republic of South Africa, 1997).

Free basic services refers to the monthly supply of at least 6000 litres per household; and the provision of a toilet or safe ventilated pit latrine with limited odour that does not allow entry to disease carrying pests and flies. A minimum of 23% of South Africans within formal areas only have access to deteriorated sanitation due to lack of proper operation, maintenance and refurbishment of pit toilets. The violation of these human rights is even higher for rural and informal settlements, who are compelled to consistently live in unhygienic and unsafe circumstances (South African Human Rights Commission, 2018, "The right to water and sanitation" para. 3). In order for South Africa's commitment towards SDG 6 to be met, the much needed funding requirements must be increased and directed towards the Water and Sanitation Sector. The prioritisation of rural areas in provision of these basic services will eradicate inequality in South Africa (Watermeyer & Phillips, 2020).

Inadequate municipal technical abilities are costing South Africans R9.9 billion per year in losses to nonrevenue water, mainly through pipe leakages. This makes up 41% of the

water purified for human consumption (Department of Water and Sanitation, 2018). On the other hand, R33 billion is required per annum to reach the targeted goals for safe water provision and adequate sanitation as outlined in the Water and Sanitation Master Plan. Even though the role of water provision and safe sanitation has been indicated as significant not only as a basic human need, but also for economic growth, 11% of wastewater treatment works were left unmanaged, which has led to their dysfunctionality (Department of Water and Sanitation, 2018). As a result, untreated sewage is pumped back on to the river, thus, increasing the production costs for water purification downstream.

1.6. Theoretical need of the study

Even though public procurement is central to public service delivery, it has mostly been a marginal study in management science (Flynn & Davis, 2014). As a result, getting relevant, globally demanded, comparative and reliable data is challenging (OECD, 1996). Government spending through public procurement is one of the levers that can be utilised to stimulate economic growth and create employment (Harland, Telgen & Callender 2012), yet there is little knowledge about this phenomenon in the South African context. Improved SME access to these public funds, especially for water and sanitation infrastructure projects can contribute to solving the problem of unemployment, poverty and inequality. Therefore, it is important to determine what the impediments are within the South African water infrastructure sector system that undermine access to SMEs.

The aim of the study is to adopt a multifaceted approach into understanding the South African water infrastructure projects context onto SME access to public procurement.

2. CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

This chapter focuses on existing literature impacting on SME access to public procurement in water infrastructure projects. The chapter is structured as follows:

- A global perspective on public procurement is firstly analysed;
- Thereafter, a focus is made on SMEs, starting with SME definition, followed by SME economic impact;
- Moreover, SME barriers and enablers to public procurement are deliberated;
- Lastly the chapter distillates on the South African context starting with basic water and sanitation access followed by SME access to public procurement and then concludes with a discussed on the built environment sector

2.2. Public procurement

According to Organisation for Economic Cooperation and Development (OECD, nd), public procurement is defined as “the purchase by government departments and public entities of goods, services and works. As public procurement accounts for a substantial portion of the taxpayers’ money, governments are expected to carry it out efficiently and with high standards of conduct in order to ensure high quality of service delivery and safeguard the public interest.” This definition points out two issue of significance, namely, the value of taxpayer’s money being spent on public procurement, as well as the responsibility of citizens to hold government accountable on how they conduct public procurement. It is for this purpose that this study aims to contribute in theory building to inform citizens on the current procurement practises in the water infrastructure sector.

Historically, the academic literature on public procurement had been neglected, as research studies on public procurement were largely contributed by North American and European regions (OECD, 1996). However, since then there has been an improvement, Thai (2001) illustrated the issue of historical neglect in the field of public procurement, as a well as a shift from this abandonment. Additionally, Flynn & Davis (2014) highlights that public procurement’s positive contribution to the society has a resulted in other scholars as well as outside academia taking interest in this field of study, including those in finance, law, supply chain just to name a few due to its role in inclusive economic growth, social

redress and environmental sustainability. Therefore, contribution to research in the field of public procurement is a necessity.

In 2002, academic scholars Harland and Telgen identified a need for international comparative research in public procurement, with the input from senior practitioners (Harland, Telgen & Callender, 2012). Subsequently, the international research study of public procurement (IRSP) was formulated with the aim of elevating issues that impact on public procurement globally. According to IRSP, public procurement is important not only to local governments that are mandated to provide public services, but also to global economies (Harland, Telgen & Callender, 2012). Furthermore, IRSP argues that developing economies have contributed in providing powerful lessons in terms of their ability to use public procurement as a lever of economic and societal reform, and that it is not necessarily true that developed nations were outperforming developing nations in this regard. Additionally, Thai (2001) noted the positive impact made by public procurement practitioners in developing policies to guide the process. South Africa, as a developing nation, has a role to contribute towards public procurement research. This can be motivated by the premise that its unique historical context can provide valuable insights to other nations on lessons learnt in redressing the injustices of the past through providing access in public procurement to previously marginalised groups.

Public procurement represents around 13% of GDP (OECD iLibrary, 2011), around 10-15% GDP (WTO, 2012) and around 15-20% of global Gross Domestic Product (GDP) (Stoffel & Müngersdorff, 2020). Throughout the years, there has been an increase in public procurement GDP contribution percentage. However academically, comparison across countries is still a struggle as a result of the significant inconsistencies of government practices (Harland, Telgen & Callender, 2012). This is further supported by OECD (1996) indicating that attaining comparative and reliable data in the public procurement is challenging. The percentages being highlighted by the different authors as GDP contribution are significant and the issue of not being able to attain comparative data across nations is concerning (OECD iLibrary, 2011; WTO, 2012; Stoffel & Müngersdorff, 2020)

Since the 2008 global financial crisis, many have called upon governments to use public procurement as a tool for economic growth stimulation and for employment creation (Karabulut, Haririan, & Huseyin Bilgin 2010). When government uses public procurement to stimulate the economy, a positive economic shift is experienced which results in opportunities for the private sector and ultimately job creation and investment by the

private sector into growing their companies. The recent Covid-19 pandemic has left most countries vulnerable to contracting economies (Statistics South Africa, 2020). The impact of Covid-19 has been disproportionate, leaving the poor mostly affected, and resulting in another global unemployment crisis (Blustein et al., 2020). Similarly, public procurement can be utilised by the government to stimulate and recover the economy and jobs.

Much of what is happening in practice is also being researched and documented by scholars, such as the advancement of public procurement into technology, which creates a solid foundation on areas of future developments for this area of work. In spite of all these interventions, Flynn & Davis (2014) argues that theoretical rigour is required in this field to address the absence of theory, which could be highly useful in making public procurement a dependable management sub-field. Furthermore, there is an expectation for public procurement research to come from underdeveloped African countries, as their economies continue to develop.

There is lack of understanding the risks, skills required and opportunities presented by public procurement management, yet is it the most vulnerable area within public administration (Schapper, João, Malta & Gilbert, 2006). This can be attributed by the findings made by the IRSPP study which found issues with procurement practitioners in the UK and Italy, where their work was assessed to be of low quality and inefficient. This was worse for South Africa where issues of dishonesty emerged (Harland, Telgen & Callender 2012). Public procurement plays a crucial role in society, as large budgets are deployed. Therefore, it is concerning that the management of public procurement is not properly understood, and some practitioners are even showing signs of poor performance and dishonesty.

The issues highlighted above makes public procurement a politically sensitive issue, because of the large amount of budgets involved. The USA federal government is estimated to be spending US\$200 billion per annum, while the global public sector procurement makes up US\$3.2 trillion of the global GDP of US\$40 trillion. Even though public procurement principles are characterised by transparency, value creation, accountability and fair competition, which are built into government policies; this area of public administration is susceptible to corruption (Schapper, et al., 2006).

2.3. Small Medium Enterprises

While there is no standard global definition for SMEs, the number of people employed in an enterprise is mainly used. This follows the OECD countries' SME classification of an enterprise with less than 500 employees, with a 250 employees cut-off for countries in the European Union (OECD, 1996). In Canada, SMEs are defined as enterprises with payroll employees between 1-499 (Ancarani et al., 2019). According to Flynn, McKeivitt & Davis (2015), SME is defined as an enterprise with less than 250 employees and generating €50 million in annual turnover or less. Meanwhile, in Nigeria, SME is classified as an enterprise with between 10-300 employees on the payroll. (Akenroye & Aju, 2013). Whereas, in South Africa, an SME is defined as an enterprise with less than 200 employees and an annual turnover of not more than R64 million (The Department of Small Business Development, 2004). Since there is no standard definition of what an SME is, this can result in ambiguity, inconsistencies with the quality and reliability of the data collected by different countries. Furthermore, it makes it difficult to implement strategies being applied by other countries as the classification and turnover of SMEs are not at the same level.

2.3.1. SME contribution to economy

When it comes to economic contribution, SMEs have a role in assisting governments to achieve their national economic goals in employment creation, innovation in the marketplace, and reducing poverty rates at a low investment cost (Akenroye & Aju, 2013). Additionally, Harland, Telgen & Callender (2012) argued that even though countries may differ in their perception on SME contribution to economy, society, innovation and politics, evidence shows that SMEs need to be preserved and developed in order to be able to compete with larger enterprises currently dominating public sector contracts (Knight, Harland, Telgen, Thai, Callender & McKen, 2007). Akenroye & Aju (2013) stated that government can use SMEs as a lever to achieve national economic targets, while Harland, Telgen & Callender (2012) argue that the role of SMEs in an economy cannot be questioned due to overwhelming evidence that exists. Furthermore, Harland, Telgen & Callender (2012) specified that even though SMEs have this important role in the society, they are unable to compete with larger enterprises unless government provides support. Thus, the impact of SMEs have in an economy is a result of government mediations in enabling them to compete, with dominant larger enterprises that have the financial, economic and technical capacity over SMEs.

SMEs are able to meet the needs of government departments at a much quicker rate due to their innovative capacity and flexibility (Flynn et al., 2015). McEvoy (2016) argued that SME involvement in public procurement has a positive impact on economic growth, creation of employment, and innovation generation for the European government. However, Uyarra, Edler, Garcia-Estevez, Georghiou & Yeowaal (2014) caution against over stipulating tender specifications by government departments as a hindrance to innovation. Innovation and quicker turnaround times are benefits that any government can enjoy. Furthermore, according to McEvoy (2016), the European government has realised these benefits from the strategies employed to enhance access for SMEs. Other countries can learn from the European government and allow SME access to public procurement by eliminating over stipulation of tender specifications, since it hinders innovation (Uyarra et al., (2014)

2.3.2. SME barriers to public procurement

Globally, much is known of the barriers that hinder SME access to public procurement (Thai, 2001; Knight, et al.,2007). SMEs, like other enterprises, experience risks that are embedded within their business context, such as funding inflexibility, incapacity and lack of experience (Akenroye & Aju, 2013). The IRSPP study found that protection of SMEs within public procurement was needed, since these are vulnerable contributors in the economy (Harland, Telgen & Callender, 2012). The preference of public organisations to larger enterprises over SMEs due to the risks associated with SMEs weakens access to public procurement and further stifles innovation and job creation. The actions of public entities are not in support of SME access to public procurement, preference is made to established enterprises.

According to Akenroye & Aju (2013) factors that are by far the most barring are information vagueness and SME incapacity in public procurement. These factors scored the highest when compared to the ignorance of procedures and arduous and stringent processes. On competing successfully in public procurement, availability to information is an important factor since the requirements sent out must be complied to (Akenroye & Aju,2013). Therefore, if there is vagueness of any kind in what is being requested, it will results in SMEs being unable to bid properly for the advertised work. Furthermore, the vulnerability of SMEs requires targeted support from public entities. This means that procurement practitioners should be skilled personnel that are able to render the support required.

Another factor is the governance of public procurement by different departments resulting in conflicting objectives (Harland, Telgen & Callender 2012). Inconsistencies in governance causes confusion and results in SMEs not knowing what the expectation is. SMEs do not have the resources to track differences between different government departments, this causes them to submit documents that are non-compliant and therefore end up not being awarded the work.

In Africa, little research exists on what undermines SME participation to public procurement, where poor performance has been noted from SMEs in Nigeria that have not yet fully apprehended their economic role (Akenroye & Aju, 2013). A study conducted in Ghana, found that with the necessary support, SMEs were able to act as engines of economic growth (Mensah & Peprah, 2016). This in itself is a problem as solutions that have been identified to enable SME access in Europe, USA and Asia cannot just be implemented by policy makers and public procurement practitioners in the African countries without having a full understanding of the problem within their context. The administrative requirements for government tenders discourages SMEs from participating as they do not have that management ability (Flynn et al., 2015). Furthermore, competing priorities on policy documents between economic and social goals (González & Sánchez, 2016); as well as anti-competitive practices such as corruption, and bid rigging demoralize SMEs from participating in public procurement, and thus hinders access (McEvoy, 2016).

Research shows that there is a need for government departments to enhance their role in creating access to SMEs, current practises are hindering access and ultimately undermining the social and economic benefits that could be realised.

2.3.3. SME enablers to public procurement

Current literature indicates that the use of social criteria in public procurement enables SME access, specifically, breaking larger contracts into smaller portion, inclusion of the clause on community benefits as a success criteria, and enforced subcontracting (McEvoy, 2016). Appropriate enforcement of policy that supports SME is a tool that can be used to enhance access. Furthermore, the ability of SMEs to create a competitive advantage through understanding their business context, relating to competitors and customers empowers them to compete for public tenders (Tammi, Saastamoinen, & Reijonen, 2014). SME incapacity has been noted as a barrier to access, however, when SMEs use their existing skills to study and understand their business environment, they stand a better chance of success.

Providing training for government departments on the proper usage and application of SME-friendly policies will allow departments to comply with legislation and therefore provide greater access to SMEs (Patil, 2017). Normally, policy makers are not the ones tasked with implementing policy, therefore, training is required to ensure that the intended purpose for that specific policy statement is realised.

Another enabler is SME development through government initiatives for mentoring and support, with an aim of getting them tender-ready, thus increasing participation (McKevitt & Davis, 2015). Training and providing support allows SMEs to understand what the requirements are, as well as to determine what their shortcomings are in order to successfully compete.

The use of technology tends to enable administrative efficiency. For example, Estonia uses technology to reduce the administrative burden associated with public procurement compliance (OECD, 1996). Compliance to public procurement requirements can, at times, be viewed as cumbersome and unnecessary. The use of technology takes away that burden from SMEs as technology provides an integrated platform, which links government departments and lessens the burden to submit documents required for compliance.

Countries like Canada have noted the importance of SME access to public procurement and are providing the necessary support to enhance access. Although Canada does not have regulations and policy that supports SME participation at the national level, SME involvement in public tenders is monitored by the Public Services and Procurement Canada (PSPC), which also provides awareness and advisory services to SMEs on public procurement (Ancarani et al., 2019).

According to McEvoy (2016), SMEs are the pillar of Irish and Northern Irish economies and as such, the government has reduced the financial and administrative burden to increase access to public procurement, through tax breaks. Introducing tax incentives for SMEs allows them to be more profitable and better equipped to create jobs and continue to innovate for the betterment of society.

2.4. The South African public procurement context

Since this research is based on providing access to SMEs in the South African built environment focusing on the water sector, it is imperative that the South African context be analysed. The following aspects are assessed: basic water and sanitation access, SME access to public procurement and built environment

2.4.1. Basic water and sanitation access

The Constitution gives certain rights to the people of South Africa, including the right to live in an environment that is not harmful and the right to access to sufficient food and water (Republic of South Africa, 1996). These values enshrined in the Constitution, which promotes human dignity. (Department of Water and Sanitation, 2018). However, the apartheid regime did not prioritise the provinces that were referred to as homestead and townships areas for service delivery. These are entrenched spatial patterns that have resulted in social inequality (Watermeyer & Phillips, 2020). The water sector is mandated to “provide universal and equitable access to reliable water supply and sanitation services; protect, manage and develop the nation’s water resources in a manner that supports justifiable and ecologically sustainable economic and social development; and transform access to water to redress the racial imbalances created by apartheid” (Department of Water and Sanitation, 2018 p.1)

The minimum average rain fall that South Africa receives is about 40% less than the 850mm world average. Thus making South Africa one of the driest countries in the world. As a result, five provinces namely, Mpumalanga, North West, KwaZulu-Natal, Free State and Limpopo declared drought conditions in 2015. This was due lack of moisture in the sub-Saharan region emanating from the the El Niño weather pattern. The drought affected 18% of the population, with 173 water supply schemes affected nationally (South African Government News Agency, 2015). According to Mnisi (2020) South Africa has both aspects of physical water scarcity and economical water scarcity. Physical water scarcity is characterised by three aspects, to be precise, pollution-driven water scarcity, climate-driven water scarcity and demand-driven water scarcity. For example, scarcity brought by pollution of fresh water sources, the lack of adequate rainfall in and the inability to meet the growing demand due to migration. Rural provinces and small towns have been largely affected by economical water scarcity, which results from inadequate investment into water infrastructure. Although economical water scarcity is mainly attributed to the geospatial disparities from the apartheid government, not much has been done since 1994, meaning that the poorest people in Eastern Cape, KwaZulu-Natal and Limpopo are the largely affected.

The combined factors of backlog in infrastructure development, water scarcity, water wastages and decreased investment into the sector has still not deterred South Africans from wasting water, where the South African Government News Agency (2015) reported that on average south africans use 61.8% more water than the world average.

Notwithstanding the backlog in sanitation provision, the current lack of operations and maintenance of these treatment plants leaves less to be desired (Meissner, 2015).

When it comes to water security strategies, a study conducted by (Meissner, Steyn, Moyo, Shadung, Masangane, Nohayi, Jacobs-Mata, 2018) found that within the South African local government, there is no collective understanding of water security. Furthermore, water security was deemed a problem only when it affected the participants directly. The findings of this study are concerning since local government is at the cold face of providing services to the South African citizens.

2.4.2. SME access to public procurement

The general procurement guidelines outlined by National Treasury enforce government's commitment to not only enable the establishment of SME, but also the sustainability of such enterprises for the betterment of the South African people and economy. The five pillars for the procurement system that should govern the establishment of policies within individual government departments are: value for money, open and effective competition, ethics and fair dealing, accountability and reporting, and equity (National Treasury, 2017). Value for money does not mean the lowest price offer, but the best possible outcome from the procurement process, meaning that all other factors should be taken into consideration, including life cycle costs. Open and effective competition refers to transparent processes and governance procedures that are easily accessible to all parties. It also takes into consideration the affordability of costs associated with the bidding process, that it should not be a deterrent for suppliers but an enabler (National Treasury, 2017).

Government departments should always act ethically and not compromise the state, and deal fairly with all suppliers and not accept bribes or gifts. How tax payers' money is spent should be made available for public scrutiny, and government departments must take accountability for their actions. The last pillar, refers to the actions to advance SMEs and historically disadvantaged individuals through socio-economic development (Republic of South Africa, 2003). It is for this reason that the Preferential Procurement Policy Framework Act 2000 (PPPFA) (Act No. 5 of 2000), was established. The PPPFA is a policy document that empowers government departments to promote SMEs through compulsory subcontracting on large contracts as a pre-qualifying criteria. As an example, the PPPFA states that where possible, a minimum of 30% of the contract value must be

subcontracted for the designated groups such as SMEs for contracts above R30 million (National Treasury, 2017).

The execution of these pillars through procurement practices have been challenged by others, where Watermeyer & Phillips (2020) argues that the current South African public procurement systems are bureaucratic, costly, burdensome, prone to corruption and emphasize on compliance through a tick box exercise. This insight indicates some level of lack of trust in the current procurement framework, and that this process is viewed as a mere tick box exercise that has no impact in the economy and society. Moreover, a concerning issue is the possibility of corruption within the procurement system, which compromises all efforts by the government to enhance SMEs access to public procurement.

Furthermore, a study conducted by (Kajimo-Shakantu, 2007) found that the PPPFA constrained the positive impact public procurement has in an economy due to the unreasonable incentives it offered. Moreover, enterprises are going out of their way to take advantage of what they perceive to be positive about the regulatory framework and avoid what is not beneficial to them. The PPPFA aimed to be prescriptive and provide no room for deviations. However, according to Kajimo-Shakantu (2007), enterprises are still able to find loopholes and avoid giving SMEs the prescribed 30% for contracts above R30 million.

In other findings, supply chain management aims have been said to be promoting secondary benefits and not primary aims of procurement (Ambe & Badenhorst-Weiss, 2012). However, the benefits of public procurement, are both societal and economic. Therefore, when supply chain management promotes access to previously disadvantaged groups, this represent major societal benefit.

The South African context is distinct due to the historical injustice of segregation against the majority of South Africans. Therefore, SMEs are also made up of the majority that was not given equal access to opportunities as well as those that were allowed access to opportunities to better themselves. The SMEs that were previously disadvantaged face a lot of capacity constraints such as: poor managerial skills, financial inflexibility, technical skills and business administration shortcomings (Migiro, 2012).

The matters stated above around public procurement within the South African context points to issues that must be scrutinised and addressed by government in its quest to seek alternative funding through various models such as Public Private Partnerships (PPPs) for

the much needed infrastructure investment, which has been reported to be at its lowest at about 16% of GDP from the early 2000s dropping from an average of 30% of GDP in the 1980s (National Planning Commission, 2010). A decline in infrastructure investment has a negative impact on service delivery for the South African who remain unserved.

2.4.3. Built environment sector

The built environment is defined as “the human-made surroundings that provide the setting for human activity, ranging in scale from buildings and parks or green space to neighbourhoods and cities that can often include their supporting infrastructure, such as water supply or energy network” (Kaklauskas & Gudauskas, 2016). Due to the study focusing in water infrastructure projects, the construction sector will be the main focus.

In South Africa, the Construction Industry Development Board (CIDB) governs procurement in the public sector, it is a Schedule 3a public entity that was established by the Department of Public Works (DPW) to lead construction industry stakeholders in construction development (CIDB, 2019). The CIDB ranks construction companies according to their capabilities and the value of contractual work previously completed. Therefore, the more established enterprises that are competent, and have worked in large projects with strong track records are ranked higher on the register of contractors than SMEs. This conservative approach enables established enterprises to progress much further since they continue to receive large contracts due to their low riskiness, with financial capacity to deliver on such projects. The risks associated with SMEs in the built environment, coupled with their low CIDB grading makes it easier for public entities to prioritise established enterprises, and not SMEs, for large projects.

Although various policies are in place to improve SME access, there are deficiencies in the understanding and implementation thereof, together with ripe unethical behaviour driven by corruption in the sector (Ambe, 2016). Furthermore, Kruger (2019) argues that one of South Africa’s biggest challenge is corruption within the procurement system. This corruption is not surprising, since public procurement involves large budgets. One way to combat corruption would be through the use of e-procurement, since it creates an audit trail. However, a study conducted by (Ibem & Laryea, 2015) found that only up to 12% of the 603 South African construction companies surveyed were using e-procurement for their tender documents, one of the hindrances was technology infrastructure capabilities to handle the nature and quantity of documents to be shared. The findings of the study

suggest investment is required in technology by construction companies, as this will alleviate corruption with regards to submitted tender documents going missing.

The construction sector provides physical water, energy and transport infrastructure that is central to the country's economic growth (Kaklauskas & Gudauskas, 2016). The industry is complex and specialized; and made up of a number of different stakeholders that is, investors, consultants, contractors, subcontractors, labours, and public sector as the client or project owner (Watermeyer & Phillips, 2020). The client has to continuously improve the procurement process to suit the environment while managing the risks such specialised projects present, ensuring the efficient use of public funds and aim for value for money when managing projects. Some large public infrastructure projects have experienced huge costs and schedule overruns, namely Medupi and Kusile power stations, signalling that there is a problem with regards to project planning and execution (Businesstech, 2020). The capacity of government departments is often called into question by critics, pointing to their poor planning abilities (Watermeyer & Phillips, 2020; Ambe, 2016)

Poor planning also results in government departments not fully spending their annual budget allocations, where in 2017/18 financial year only 53 municipalities spent between 80%-100% of their allocated capital expenditure budgets (Watermeyer & Phillips, 2020). Signalling that the remaining 225 municipalities spent less than 80% of their allocated capital expenditure budgets. Thereby, reducing the positive impact the full investment in capital expenditure that would have been experienced. Various agencies have been established by the government such as Government Technical Advisory Centre (GTAC) at national level as well as the Municipal Infrastructure Support Agency (MISA) with the aim of offering technical assistance to government departments. In addition, the Presidential Infrastructure Coordinating Committee (PICC) was established in 2012 to improve integration, coordination and capacity within government. In spite of all this support, challenges are still being experienced within the sector.

The construction sector is in need of public projects. According to the analysis conducted by CIDB (2019), the highest growth in construction output was around 16% which was in 2007. The water sector has ample challenges, for an example, up to 40% of the much required potable water is unaccounted for, or being lost through dilapidated pipes. This calls for an urgent need for investment in the water sector. Furthermore, the improvement in SME access to this investment will enable the employment creation for a number of

South Africans as well as innovation within the public sector, which assists to drive project costs down.

The issue of corruption in the built environment sector is not unique to the South African context and it affects the successful completion of projects. A study conducted by (Sohail & Cavill, 2008) found that corruption in the form of bribery, kickbacks, fraud and theft accounted for \$340 billion globally in construction costs. According to the Mail&Guardian (2019) construction mafias requesting the 30% stake in construction and infrastructure projects accounted for 183 project stoppages nationwide, valued at more than R63 billion. Van Dijk, (2007) found that government should not allow this sort of organised crime to prevail as it was equivalent to grand corruption against the state. Project stoppages are costly and often result in cost overrun.

Cost overruns create an added burden to the government budget deficit and its ability to raise funds for the infrastructure backlog. Another issue that is prevalent and that contributes to cost overruns is delayed payments by government departments and public entities on certified claims. According to Propeller Aero (2020) 72% of subcontractors have experienced payment delays. Additionally, a study by Alinaitwe, Apolot & Tindiwensi (2013) found that payment delays were one of the contributing factors that led to delays in the completion of construction projects.

2.5. Conclusions of the literature

The following key aspects were learned from the literature:

- Public procurement used to be a marginal study in management science with little progress to date;
- Globally, some studies have been conducted to address the inadequacy of literature in the field of public procurement. However, there is still a need for theory building especially from African countries;
- It has been proven and demonstrated that SMEs create more employment opportunities when compared to larger established enterprises;
- Government departments are required to improve their role in order to enhance SME access. The identified strategies include: clear priorities on policy documents between economic and social goals; removing the administrative burden on the tender process; and ethical behaviour in their conduct.

- Enablers and barriers of SME access have been largely researched globally, nevertheless these should be verified with more studies within the African context;
- The water infrastructure needs for South Africa are immense, and much investment is required to address the human right violation issues within the water and sanitation sector;
- This study is well positioned in the water sector due to the much anticipated infrastructure investment, therefore, presenting opportunities for great employment creation through SME access into the public procurement system.

3. CHAPTER 3: RESEARCH QUESTIONS

This study aims to answer the three questions listed below:

Research question 1

What are the most challenging issues facing the built environment sector?

There seems to be a stagnation with regard to the rollout of new water infrastructure projects. Currently, only 88.8% of households in South Africa have access to clean water, a number that only increased by 7.6% since 1996. Moreover, only 46.4% of those households have access to piped water in their homes (Africa Check, 2017). This questions seeks to understand what the bottlenecks are in the system, which hinder access to clean water to the most vulnerable.

Research question 2

What are the barriers and enablers of SME access to the public procurement system in the South African water infrastructure sector?

This study aims to contribute to the existing literature on barriers and enablers of SME access to the public procurement system, specifically within the South African context. Globally, some studies have been conducted to address the inadequacy of the literature in the field of public procurement. However, there is still a need in the African continent to determine what undermines SME access to public procurement so that tailor made solutions can be developed for the unique African hindrances that will be uncovered.

Research question 3

What collaborative efforts are required by all stakeholders (government departments, public entities, engineering consultants, contractors and community beneficiaries) to improve the access of SMEs in public procurement?

The water infrastructure sector is complex and involves multidisciplinary teams for construction projects. Currently, most solutions within the public procurement space have been developed for the Europe, USA and Asia regions. There is a need to develop a model that will illustrate how all stakeholders can work together to enhance SME participation in public procurement within the African context, as well as to determine what support and from whom needs to be provided to SMEs for their shortcomings.

Furthermore, these questions are discussed in relation to literature in the consistency matrix (Appendix D).

4. CHAPTER 4: RESEARCH METHODOLOGY

4.1. Introduction

The research methodology was selected based on the objectives of the study. The choice of methodology, population, unit of analysis, sampling method and size, measurement instrument, data gathering process, analysis approach, quality controls and limitations are outlined below.

4.2. Choice of methodology

Research philosophy: Research philosophy refers to the manner in which knowledge will be developed in a particular field through testing beliefs and assumptions held by a certain group (Saunders & Lewis, 2018). The research philosophy that allowed the researcher to understand the different participant's roles in their natural environment was interpretivism (Saunders & Lewis, 2018). Understanding the role of each stakeholder within their natural environment in accordance with the meaning they have defined their roles to be within the value chain provided deeper insight to the research for the norms and standards, which the participants subscribed to in the phenomenon being studied. Furthermore, the issue of SME access is complex, and required an interactive approach, where all participants made input to identify underlying issues and recommend solutions based on their experience in the sector. In addition, the chosen philosophy also uncovered the interpretation that each stakeholder had assumed as their role within the process.

Research approach: Globally, comparable credible data is lacking within this SME access and procurement field of study (McEvoy, 2016; OECD, 1996). Moreover, African countries have been urged to also contribute in the building of theory within their unique contexts (Anthony, McKevitt & Davis, 2015). What has been identified in other countries might be unique to their context, hence it was imperative that a South African study be conducted to inform this economic need of SME access, which is hindering the growth of many enterprises. It is for this purpose that the theory development approach was inductive, since the aim of the study was to understand the phenomenon from its origins through developing theory from the data that was collected (Saunders & Lewis, 2018). The stakeholders who were interviewed are experts in this field. As a result, the data collected was credible data that informed how procurement should be altered in order to allow access to SMEs.

Research method: According to de Sousa (2018), the selection of methodology should be based on the objectives of the study as well as the available duration for it to be conducted. The most suitable method for the objective of this study namely, understanding the issue of SME access to public procurement in the South African water infrastructure projects; and the duration available for the study to be conducted was achieved through a single method approach where audio-recorded semi-structured interviews were used as a data collection platform.

In spite of all the different endeavours to promote SME access to public procurement, representation is still limited (Akenroye & Aju, 2013; McEvoy, 2016; OECD, 1996). This is an indication that the current mechanisms in place are not addressing the issue in its totality, hence a need for further research. The study targeted to gather new insights, with the aim of unearthing the building blocks in creating access and reveal interaction or the lack thereof between various stakeholders. In so doing, the study aimed to contribute in building theory within the South African public procurement. Therefore, the research design was explorative in order for the phenomenon be better understood (Homan, 2018).

Research strategy: Since the study aimed to understand the problem from different stakeholder perspectives, it was therefore appropriate to choose phenomenology as the research strategy. This is a method where the researcher solely relied on capturing stakeholders' lived experiences and views of the problem without an interpretation of the researcher's subjective assumptions (Fazli, Imani & Abedini, 2018). The purpose was to understand the stakeholders' roles from their perspective, their own beliefs of the standards and norms in relation to SME access to public procurement, as well as the underlying factors.

Nature of study: The study was cross-sectional in nature, where the phenomenon was studied through various stakeholders at a particular time and not over an extended period (Saunders & Lewis, 2018). For this time horizon to be chosen, two criteria had to be met, data had to be collected from multiple groups of people and was done in a single instance. This was suitable as it involved collecting data from various stakeholders who were experts in their own fields in a single instance due to the short time available to conduct the research.

Data collection: The study required a conversation to be had over the phenomenon with the relevant stakeholders for an in-depth understanding (Saunders & Lewis, 2018). Semi-structured interviews were held using the interview guide (see Appendix A). The interview

guide was simply a representation of the issues that the researcher aimed to address (Zikmund, Babin, Carr & Griffin, 2013). It was reviewed to incorporate insights gained as the process unfolded. The interviews were recorded in order to make the data transcribing process efficient, permission for recording was granted by all participants. Ethical clearance was approved for data collection (see Appendix B).

4.2. Population

Population refers to the targeted participants that the research question is aimed for (Myers, Well & Lorch, 2010). This study was aimed at role players who are involved in the value chain process that ultimately determine the percentage allocated to SMEs in water infrastructure projects. Therefore, the population in relation to this study was identified as follows: public sector, SMEs, engineering consultants and contractors. This included those who are governed by the legislative, regulatory and policy instructions when conducting procurement, as well as those who are expected to comply with those instructions within their environment of business. A criteria was used to specify the knowledge and experience required to form part of the research sample as indicated in Table 1.

Table 1: Interview sample criteria

Sample category	Experience
Construction Industry Development Board	Program manager: contractor development
Public entities - Water Boards	Capex Projects Executive Supply Chain Manager Project Manager
Municipalities	Infrastructure Director Supply Chain Manager Project Manager
SMEs	CIDB grading 3-6
Engineering consultants	Water infrastructure designs and construction monitoring
Contractors	CIDB grading 7-9

4.3. Unit of analysis

According to Bengtsson (2016), the unit of analysis refers to the organisations or participants who are most suitable to answer the questions set out in the research aim.

This means that the unit of analysis must be people who are well experienced in the subject being studied. Table 1 above, sets out the population as well as the relevant experience required to be a participant in the study. Therefore, the most suitable people to form part of the study are listed in Table 1. Their unique experiences with the phenomenon was analysed through the semi-structured interviews conducted. The informed consent letter was either signed before the interview started or verbal consent was given during the interview (see Appendix C).

4.4. Sampling method and size

Purposive, heterogeneous sampling technique was used in this study, where a sample was selected that best enabled the research question to be answered through a wide range of perspective (Laerd, 2012). The reason for selecting this technique is that there is no comprehensive list of the entire population that would allow for probability sampling of the relevant stakeholders to be undertaken (Saunders & Lewis, 2018). Moreover, the constraints of finding women stakeholders to be interviewed, led to snowballing process, where recommendations on whom to interview were made (Saunders & Lewis, 2018). Furthermore, the research questions required a wide range of perspectives to be understood. The nature and purpose of the study required that data saturation be reached, and that usually happens at around 15 interviews for a study with a methodology and philosophy of this nature (Myres, 2020). Therefore, the targeted number participants was between 15 to 20 participants, however saturation was reached at 15 participants.

4.5. Measurement instrument

Semi-structured interviews were conducted as means to collect data for the study, an interview guide consisting of a list of topics was used to guide the conversation (Saunders & Lewis, 2018). The main topics of the interview guide in trying to understand the phenomenon from a wide range of stakeholder perspectives was as outlined below:

- SME constraints to, and enablers of public procurement;
- The impact of the current regulations on the procurement process;
- Areas of refinement and leverage in the current stakeholder relationships that will enable SME access to public procurement.

A consent form was developed and sent out to the participants prior to the interview. An appropriate and preferred platform by the participant was used. Due to the Covid-19 pandemic, face to face interviews were limited to two interviews and the rest of the 13 interviews were conducted through an online platform. At the beginning of the interview, the researcher had her video turned on for the introductory period. However with the permission of the participant, the video had to be turned-off so as to not interfere with the bandwidth. The researcher aimed to conclude the interview within 1 hour. This was sufficient time to adequately address all the questions. The interviews were recorded, and field notes were also taken. The researcher ensured that proper body language was used as an indication of being interested and engaged in the conversation (Myres, 2020). The researcher incorporated insights from early interviews into the later ones as part of continuous improvement.

4.6. Data gathering process

Data was gathered verbally through asking questions and recording the participant's responses to the interview questions (Saunders & Lewis, 2018). The interview guide was utilised to structure the conversation. Interviews were conducted on an on-line platform that was most preferred by the participants. The participants' identity was not disclosed in the research report. The participants were contacted by email and/or telephonically for an appointment of the actual interview, once a date has been agreed to, an invite was sent out with a link to the meeting. Interviews were scheduled not less than a week in advance. Pretesting was conducted to self-correct between design and implementation (Hurst, Arulogun, Owolabi, Akinyemi, Uvere, Warth, & Ovbiagele, 2015) using the first 3 interviews with the engineering consultant, the project engineer and the executive: projects and engineering since they were involved in planning of construction work from inception to completion. There were no problems identified with the data gathering process, which necessitated adjustments to be made to the methodology. Through the semi-structured interview technique, the researcher gained insights from a number of participants in the value chain. This enabled the research objective to be met (Saunders & Lewis, 2018).

Data storage: The interview recordings are enclosed and submitted with the final research report, and will also be kept in storage by the researcher.

4.7. Analysis approach

Data analysis is the process of analysing data collected to answer the interview question (Saunders & Lewis, 2018). Without this process the interview question cannot be answered. For this study, data analysis was conducted as and when the interviews were being completed. Initial insights gained as suggested from the earlier interviews were incorporated in later interviews. This also ensured that the researcher recognised when saturation had been reached (Myres, 2020).

An application called Otter was used to generate interview transcripts for text qualitative analysis. A specialist qualitative data analysis software, namely, Atlas ti was used to conduct data analysis. The process of looking for patterns, similarities, differences and relationships was done for coding purposes. Codes generated for this research were then be grouped into categories and then into themes (see Appendix E: Atlas.ti Codebook), which ultimately were used to build on the theory as they immerge (Saunders & Lewis, 2018).

4.8. Quality controls

When conducting qualitative research it is important to ensure validity and reliability of the results and for the researcher to be aware of their own bias. In order to ensure quality for this research study, the credibility criteria will be verified through triangulation. This is a strategy that requires the use of two or more independent sources (Saunders & Lewis, 2018). Therefore, in addition to the research gathered through the interviews, secondary data was used to validate the findings gathered through the interviews. The secondary data utilised incorporate the following: report from the construction industry development board, reports by the Department of Small Business Development and investment report from the infrastructure investment office in the presidency. Field notes along with audio recordings were also utilised to assure reliability of the data collected.

5. CHAPTER 5: RESULTS

5.1. Introduction

This chapter outlines the findings made on the three research questions presented in Chapter 3. A total of 15 semi structured interviews were conducted, two face to face and 13 on a virtual platform. Limitations due to the ongoing Covid-19 pandemic restrained face to face interviews. The consistency matrix outlined in Chapter 4 was used to ensure that there was alignment between the research questions and interview questions. Insights on SME access to public procurement in South African water infrastructure projects are presented in the sections below.

5.2. Description of the sample

The research sample consisted of multi-stakeholder participants involved in the built environment sector with more emphasis on water infrastructure projects. This was undertaken for the purpose of unrevealing existing relationships between the public and private stakeholders, as this enabled the research question to be answered. The built environment sector remains male dominated, and this is represented in the sample. Of the 15 participants, only three were females and the rest were male. The female participants were acquired through the snowballing process. In terms of qualification background, 86% of the participants had studied civil engineering in their undergraduate studies, while 13% were from a mechanical engineering background, only one participant was not from the engineering discipline.

The sample's average years of experience is 18.8 years within the built environment sector, as a result the participants had broad knowledge and experience to be able to make meaningful contribution to the research. More than 60% of the participants had acquired various skills during the earlier years of their careers as employees, and had established their own companies. Table 2 below depicts the sample for the study, consisting of the participants list, current designation, background qualification, years of experience and high-level overview of experience acquired. To maintain the confidentiality of the participants, the participant's number will be used as an identifier.

Table 2: Sample for the study

Participant number	Designation	Qualification Background	Years of experience	Overview of experience
1	Director Operations	Civil Engineering	22	Public and public sector, consulting, planning, design, project management, site supervision.
2	Project Engineer	Civil Engineering	16	Private and public sector, site management, project management and contractor management.
3	Executive: Projects and Engineering	Civil Engineering	23	Maintenance planning and execution, infrastructure upgrades, and refurbishments, project management and contractor management.
4	Project Manager	Civil Engineering	10	Water infrastructure, roads, project management.
5	Managing Director	Civil Engineering	22	Consulting, planning, design, project management, public and private sector.
6	Director Advisory Group	Civil Engineering	13	Consulting, design, project management construction monitoring
7	Managing Director	Mechanical Engineering	14	Grade 6EP Mechanical contractor. Pipeline specialist, equipment supplier, water infrastructure refurbishments and constructions
8	Director/Lead Mechanical Engineer	Mechanical Engineering	15	Sales, design, consulting, project management and site management

9	Chief Executive Officer	Civil Engineering	22	Grade 9 Civil contractor, buildings, infrastructure construction
10	Project Engineer	Civil Engineering	12	Public and private sector, consulting, project management, procurement
11	Managing Director	Civil Engineering	20	Public and private sector, consulting, construction, public entity board member
12	General Manager Engineering Services	Civil Engineering	17	Public and private sector, consulting, design, project management
13	Managing Director	Accountant	28	Grade 4 contractor, pipe replacement specialist.
14	Managing Director	Civil Engineering	19	Grade 8 ME & EP mechanical, electrical and civil contracture
15	Chief Executive Officer	Civil Engineering	29	Water and sanitation infrastructure, consulting, design, project management

5.3. Results for Research question 1

Research question 1: *What are the most challenging issues facing the built environment sector?*

The built environment sector impacts on service delivery, it is therefore a tool to bring positive change into people's lives. The main aim of this question was to determine if there were challenges in the sector and what those challenges are since the infrastructure budget has been adjusted downwards from 2017 (Watermeyer & Phillips, 2020). The participants acknowledged that the sector had many challenges, and they mostly focused on the top three challenges that came to mind.

5.3.1. Challenging issues facing the built environment sector

Out of the 108 codes that materialized, eight main themes emerged from the interview data, namely: government systematic failures, corruption, economic stagnation, apartheid legacy, financial challenges, SME incapacity, technical skills shortage, community disruptions. These issues are depicted in Figure 1 below, and further explained in Table 3 below according to the number of participants who mentioned features related to the particular challenge.

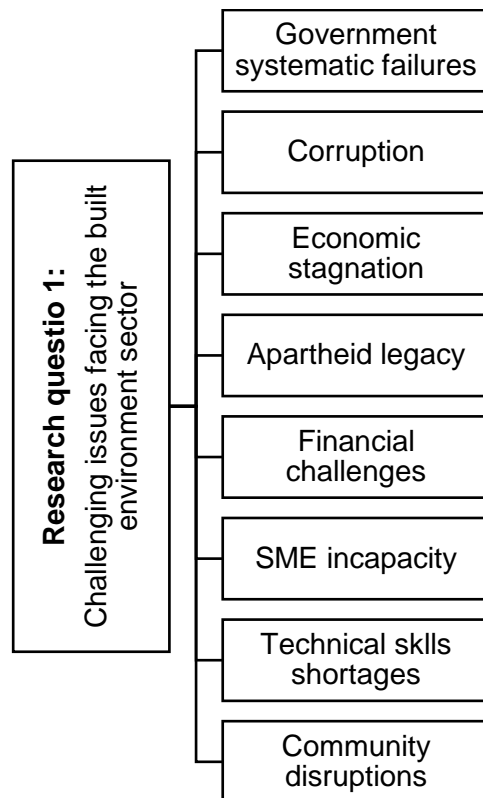


Figure 1: The main challenges in the built environment sector

The results of the main themes for research question 1 are presented in Table 3 according to the number of features related to the particular theme as identified by the participants. Moreover, the results for each theme identified are presented.

Table 3: Results overview of the main challenges facing the built environment the sector

Rank	Challenge	Frequency
1	Government systematic failures	40
2	SME incapacity	15
3	Financial challenges	12
4	Corruption	12
5	Economic stagnation	9
6	Apartheid legacy	8
7	Technical skills shortage	7
8	Community disruptions	5

5.3.1.1 Government systematic failures

Government systematic failures relates to government regulation, policy framework, roles and responsibilities that are either not in place, not updated, not executed properly or monitored. The top issues that emerged from the interview data are as follows: Government insolvency, lack of funds to implement projects, procurement regulation, local government and public entities' institutional memory. The results of the top issues are subsequently presented.

5.3.1.1.1 Government insolvency

Participants 3 and 14 stated that the government was unable to stimulate the economy through capital investment. Participant 14 further specified that "For the first time, in the past 25 years I have been in the industry, we can see some serious cracks, structural wise, from government to say definitely, that the funds have dried-up". Similarly, participant 8 elaborated on the issue of lack of big projects running simultaneously throughout the country, meaning that due to the limited number of projects, established and small companies were being compelled to compete for the same projects. Additionally, participants 5 and 6 emphasised the limited number of critical projects roll out by different spheres of government.

5.3.1.1.2 Lack of funds to implement projects

Lack of funding to implement projects was identified by participants 2 and 3 as the biggest issue facing the sector. Participant 2 stated that "I think the major challenge in the sector is, is funding. I think that is one of the biggest challenges because there's plenty of projects that have been conceptualized and are ready to be implemented to address those challenges." The challenge with regards to having approved project plans was further highlighted by participant 3 as follows: "...these plans as much as they are approved for expansion and refurbishment or rehabilitation of infrastructure, to ensure that the general community has access to clean potable water, and access to health and hygiene and sanitation. The challenge is, we don't have funding..."

Whilst participants 2 and 3 focused on the lack of funding to kick-start the project from the sponsor or owner's point of view, participants 9 and 11 focused more on funding for project execution from a contractor's perspective. According to their experiences, it was difficult to secure funding from the commercial banks/funders in general for construction projects

as the industry is classified as high risk. Participant 9 outlined the challenge as follows “I would say the first and one of the biggest challenges we have in the sector is, access to funding, banks do not fund construction because it is classified as high risk”.

5.3.1.1.3 Procurement regulation

The main highlights on procurement regulation is the manner in which tender specifications are drafted by Organs of State, as well as the much emphasis placed on the tender price, where technical sound proposals are at times overlooked. Participant 3 specified that “The systems that also made things to be even worse is the procurement system and the tender procurement system that has killed your small medium and micro enterprises”. Participant 14 was concerned on how the tender awards were being conducted; he indicated that “We are hoping that every time we put out a tender or a bid that you are being judged based on all the criteria, including quality, and not just price alone”.

Another aspect was the lack of proper regulation of the procurement processes within the construction industry, which was raised by participant 12, whereas participant 1 was concerned about the duration it took for the appointment processes to be concluded, stating that it is a loss in construction time. Moreover, participant 3 illustrated that due to the manner in which the tender specifications are drafted, they are not conducive for SMEs. To further illuminate this finding, participant 7 explained that whenever tender specifications demanded for services from only original equipment manufacturer (OEM) approved firms it rendered SMEs to act as middleman and outsource work that they are skilled to do. Additionally he highlighted the challenges which SMEs faced when requesting for OEM registration by stating that “the other thing is that small companies like myself will never be accredited by the OEM, they just don’t do that.”

5.3.1.1.4 Local government and public entities’ institutional memory

The matter of institutional memory within the different spheres of government, as indicated by participant 1, primarily focused on the current executive management appointment system, where these are contracted on a 5-year performance based contract. Participants 1 also pointed to the limitation from lack of “...history and the blueprints within the sector as well as the institutional memory in the form of the previous city engineers, the previous technical directors”.

5.3.1.2. SME incapacity

SME incapacity refers to SME's shortcomings as being either technical, financial or business abilities that limit their participation in the sector. Participant 2, 3, 7, 10, 11 and 15 all contributed to this section. Participant 11 argued that SMEs on the extreme left spectrum, namely uneducated and no business experience, faced more challenges as compared to the ones on the extreme right, namely educated professionals with connections. This is attributed to "the problems that they then face might be similar to the one to the extreme right. Which is things like access to funding, access to credible labour and so forth".

According to participant 11, the challenges faced by the extreme left SMEs resulted in their inability to compete, as "they might not be in a position to even understand simple things like completing a tender document and structuring the project right, so that they themselves can realise profit. They might have issues like sourcing funding, which is the same across the board, in my opinion." SMEs' inability to compete in the market also came across strongly from participant 3, where he indicated that this was due to the lack of understanding the business environment and reinvesting in their businesses for growth, as stated "SMEs when they get an opportunity, you know what they do? They don't understand the business environment, most of them. I don't know what isn't because they want instant gratification, meaning I want it now I want it all."

Participant 10 indicated that "In terms of implementation of the projects, I think it's a national crisis, where we finding ourselves that in most projects SMEs tend to want to force themselves into projects rather than going through the normal process of procurement"

Participant 2 argued that SMEs' inability to compete stemmed from the market conditions where he indicated that "the last challenge is that when I look in the industry, there's a monopoly of companies that are within the industry who've got all the expertise, and it makes it very difficult for smaller companies to come into the market". In addition, participant 1 and 15 reasoned that SMEs were facing capacity constrains due to lack of support from government. Participants 15 stated that "from a support perspective, there's very little support in that space. It's always a challenge to grow". Participant 1 dwelt on the issue of SME payment cycles and stated that "If invoices are delayed, government is actually contributing in closing their businesses down."

5.3.1.3. Financial challenges

More than half of the participants, namely, participants 1, 2, 3, 5, 6, 8, 9, 11 and 14, outlined financial challenges as an issue facing the sector. Furthermore, participants 3 emphasised the issue of financial management by local municipalities by stating that “many of our municipalities, they don't have good corporate governance, they don't have good financial management”. This was further illuminated by participant 1 when he indicated that project executions are delayed due to planning by local government ,he indicated that “local government seems to be staggered in terms of when they start because of the lack of understanding in planning, namely financial planning”

5.3.1.4. Corruption

Corruption was ranked as a second challenging issue facing the built environment sector by participants 6 and 14, while participant 3 reasoned that corruption was the main contributor to SME lack of growth in the sector. On this note, participant 6 stated that “number two is corruption. Corruption is extremely high in our sector”. Similarly, participant 14 stated that “currently there is a high level of corruption, to elaborate and to be specific, you would find that our potential clients in particular people in supply chain would require, a bribe to come to a favourable outcome to a particular contractor”. Whereas participant 3 outlined corruption as the reason for SME stagnation within the system, the concern is that “they never grow over and above the corruption system because the tender system is also open corruption. In essence before a tender goes out, it can be specified or in a manner that it will exclude a certain company that meets the criteria will be done to suit a particular outcome.”

Additionally, the current structural quality challenges being experienced in most of the construction works were also linked to the impact of corruption by participant 5 through asking the following questions “I think you've realized that a lot of structures that are failing and collapsing recently. What does that say? Is it because of contractors or professional engineers?” This was further supported by participant 14, where he illustrated that “...our competitors are not worried about contractual performance. They're not worried about the workmanship, the quality of the works that they produce to the end user. It's all a numbers game, it's a money game.”

What was interesting is that only 1 (participant 3) of the 6 participants that are public servants mentioned corruption as an issue.

5.3.1.5. Economic stagnation

Although the lack of funds to implement projects was mainly attributed to government systematic failures, which also impacts on economic stagnation, participants 3 and 14 also raised the issue of lack of investment by the private sector into capital projects. Participant 3 stated that “the challenge is, we don't have funding, and we don't have the private sector coming in to assist in terms of the required investment”. The economy was said to be stagnant due to lack of economic stimulation. Participant 14 concluded that “because government is broke, it cannot inject stimuli in the markets.” Additionally participant 3 added that “if you look at the water infrastructure, we sort need urgent capital injection”.

5.3.1.6. Apartheid legacy

As a result of the injustices of the past, participants 3, 6 and 7 attributed some of the challenges within the sector to the apartheid legacy. Participant 7 was concerned about not being allowed to carry out certain work, since they are not recognised as agents, despite being fully capable, he conceded that “If you bid for that work and you are appointed, you become sort of like a middleman because even though you have the knowledge and skill, you must still outsource the work to the agent and then add a mark-up. So, meaning that big companies will always get to do the work.” Participant 3 indicated that because of the practices within the sector “these smaller black owned companies are for ever fighting for crumbs.” Moreover, he outlined the issue of rural municipalities lacking skills due to their geographic location in that only a few of the well-seasoned professionals would prefer to work in the rural areas compared to urban areas. Participants argued that due to historical issues where access and opportunity was not granted to all South African citizens, the current problem that the country experiences is that “you have either engineers or technicians and technologists that are either too old or too young.”

5.3.1.7. Technical skills shortage

The challenge brought about by technical skills shortages in the sector was strongly voiced out by participants 1, 3, 5, 6, 7, 10, and 12. Participant 1 stated that the issue of skills gap within government departments was due to the contracting of executive managers on a 5-year performance based contract. Participant 3 ranked skills shortage as the second biggest challenge within the sector. Participant 6 indicated that that the third challenge in the sector was “a big skills gap between the senior engineers and the junior engineers”.

For participant 7, the skills gap challenge was the first one he mentioned, when he indicated that “skills are lacking as well as exposure to the opportunities that the government is rolling out”. In comparison, participant 10 stated the challenge in two folds, namely “I think, we don't have enough skilled contractors, and the skilled contractors that we have seem not to be cascading the experience to the emerging contractors.” Participant 5 and 12 gave voice to the challenge of the sector’s infiltration by other non-engineering professionals. On this note, participant 12 argued that “in terms of the control and management of the firm, you realize in most cases that those companies are controlled by people who are not technically competent, who are not technical experienced, and they don't understand how engineering works.”. In agreement, participant 5 identified the second challenge as “a recent incurrence of non-professional personnel, I'll call them business people that are clouding the market, both in construction and then in the consulting sphere.”

5.3.1.8. Community disruptions

The last theme that emerged as a challenge was community disruptions in the project execution phase. This was the main and only issue that was indicated by participant 13, her work relies heavily on municipalities where her company does pipeline replacement, she stated that “I would say, my major problem, for instance, my biggest, problem for now has been dealing with communities. That’s what's keeping me awake right now.” Although participant 2 indicated other reasons for project disruptions, the community element was also stated “what we've realized recently, with the projects that we've executed was that there is a lot of stoppages in projects, big projects, some stoppages come from the community, some come from business people, and some come from even political, influences or interferences. So, there's quite a number of disruptions within project”

5.3.2. Summary of the findings of research question 1

In answering research question 1, eight main themes emerged as the challenging issues facing the built environment sector, namely, government systematic failures, corruption, economic stagnation, apartheid legacy, financial challenges, SME incapacity, technical skills shortage and community disruptions. For the government systematic failures, four sub themes emerged, as summarised in figure 2.

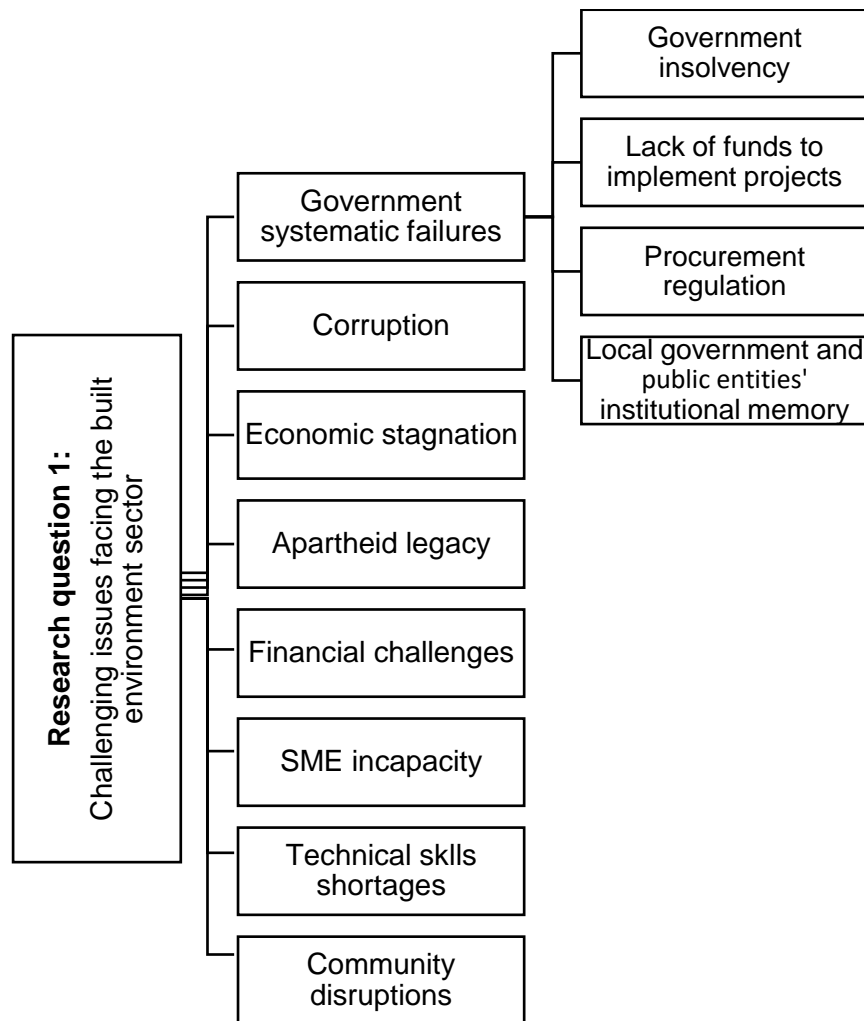


Figure 2: Graphic summary of the challenges facing the built environment sector

Government systematic failures was ranked the highest by the participants, followed by SME incapacity and then financial challenges as the top three challenges facing the built environment sector.

5.4. Research question 2

Research question 2: What are the barriers and enablers of SME access to the public procurement system in the South African water infrastructure sector?

The aim of this research question was to determine hindrances to public procurement from a South African perspective. Interview questions 4 and 5 were used to gather solutions to this question. Although most participants stated that SMEs had an important role in the economy, three out of 15 participants had neither seen that happening in the South African context nor believed that it could hold true under the current water infrastructure sector business environment. A total of 21 codes emerged which resulted in two main themes

emerging from the interview data gathered, specifically, barriers and enablers. These results are depicted in Figure 3 below.

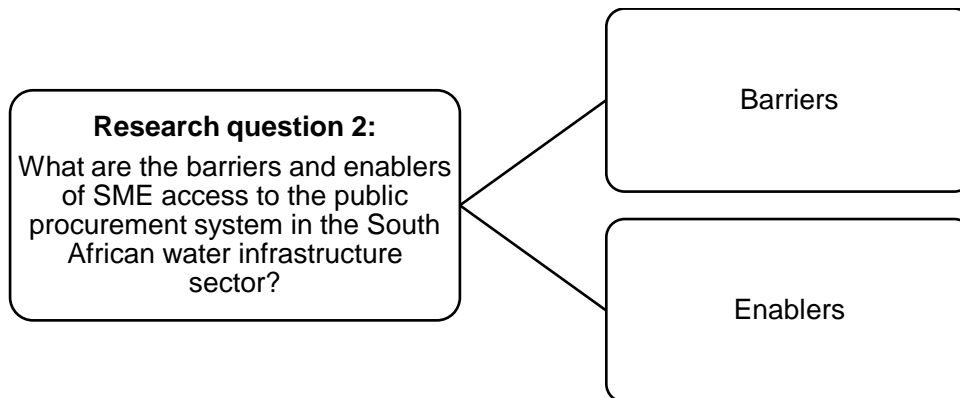


Figure 3: Main themes for the barriers and enablers of SME access to the public procurement system in the South African water infrastructure sector

The results of the main themes for research question 2 are presented in Table 4 according to the number of features related to the particular theme as identified by the participants. Moreover, the results for each theme identified are presented.

Table 4: Overview of the results of the main themes for research question 2

Ranking	Theme	Frequency
1	Barriers	14
3	Enablers	7

What was also prominent from the interview data as explained by participant 9 was that “there are two kinds of SMEs, currently, they are the ones who are who are politically connected, and there are the ones who are entrepreneurs who just want to work. There's a big difference between both of them, the ones from my own experience, that are not politically connected, just want to do work. They are more willing to be mentored to understand how the industry works and to be supervised. But the ones that are politically connected, they are not interested in mentorship”

5.4.1. Barriers

All participants contributed towards outlining what the barriers were in the system. Regulatory framework, system design and SME class depended are the three categories that emerged from the codes created, as presented in figure 4.

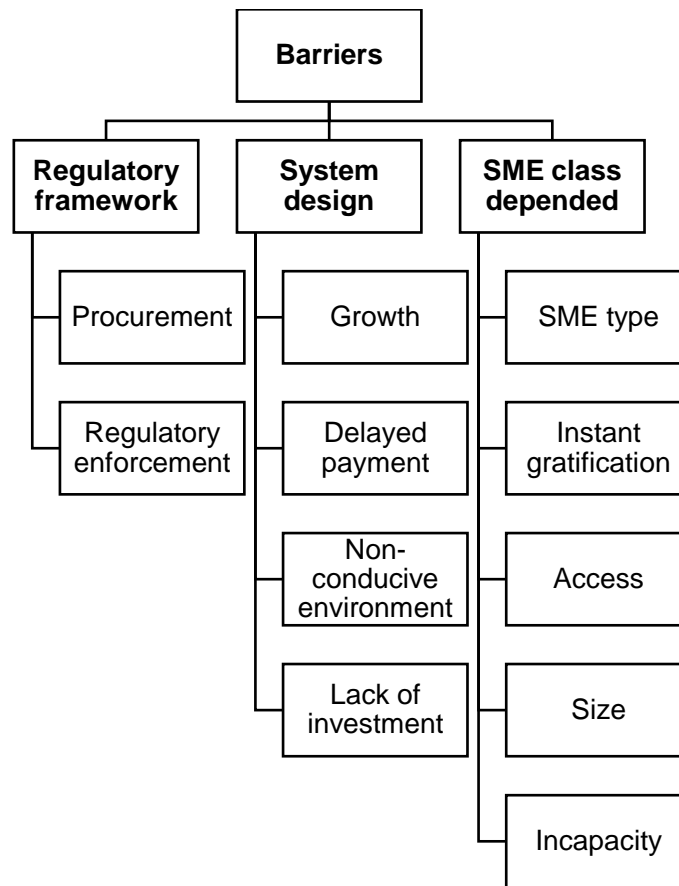


Figure 4: Overview of the results for barrier theme categories

5.4.1.1. Regulatory framework

What emerged on the regulatory enforcement category from the participants was two-fold, namely, the manner in which the regulation was crafted and the lack of monitoring by government departments. Participant 15 stated that “I think also the confusion in the procurement regime there's so many legislations and as it as our clients are extremely confused in terms of how they put out stuff.” Additionally, participant 12 indicated that “the big barriers, I must say is both legally the framework in the country, it's not really conducive for SMEs, there is there is a lot of compliance issues...” Similarly, participant 13 had an experience where a tender was advertised and was specifically targeting women-owned businesses, however, she did not submit her bid due to the compliance documentation that was required where she felt that “for me it was just it was too bureaucratic and too cumbersome in this way”. Furthermore, participant 12 believes that “I think the public procurement system is just not designed for SMMs”. Additionally, participant 8 and 11 were concerned about compliance monitoring and report that is was not being conducted correctly.

With regards to the procurement processes within the sector, participants were not happy with the way things were being done and had this to say. Participant 2 stated that “another challenge in the procurement space, where opportunities are available, you find that the criteria that is used is very stringent to the point where these smaller SMEs are unable to make it through those stages or make it through the requirements that are in those procurement processes, therefore not enabling them to be able to get those contacts”. Participant 7 outlined his experiences as follows: “the tender minimum qualification criteria, is set in such a way that SMEs cannot reach in, especially when they will say prove you have the financial capacity for a R10 million contract. Where are you going to get the R1 million upfront?” Likewise, participant 9 conceded that “for functionality, for some of these projects government is stating requirements that will be difficult for SMEs to meet that functionality”

Correspondingly participant 6 also shared his experience and mentioned that “in terms of barriers, on the consulting side, would be the high requirements that the state sets as functionality scores, they will say for you to upgrade plant x, show us that you've done it five other times.” On the other hand, participant 12 called for standardisation of the procurement specifications when he said “for example, in terms of functionality, there is no standardized way in terms of how one will deal with functionality within the built industry each and every organization has its own way that somehow becomes cumbersome for SMEs”.

5.4.1.2. System design

According to participant 15, the water infrastructure sector is cyclical in nature, resulting in SMEs being unable to retain skilled employees when the market is at its lowest. What also emerged as of concern was the persistence of corruption within the system, where participant 14 stated that “the biggest challenge that we see is that the procurement process is merely a formality. The successful bidder is already chosen, before the bid even comes out by various corrupt municipalities and that is serious” Additionally participant added that “and then another big barrier, again, I think it's very relevant for the South African context is corruption”

Although participant 11 admitted that the country was on the right track she was still concerned about the manner of execution and felt that this question was not yet answered “how do you create an SMME environment conducive for economic development? I think nobody has really sat down and answered that question.” Whereas, participant 13 felt that

the expectation that SMEs can compete for the same jobs as established companies was just not realistic.

Lastly, the issue of delayed payments was indicated as a barrier by participant 4, 6, 14 and 15. Participant 15 stated that the lack of timely payment was detrimental to SMEs, whereas participant 6 stated that “one of the biggest issue around is that a chapter nine or section 21 institutions is that they do not pay SMEs on time. The average period of payment at the moment is 120 days from date of statement.”

5.4.1.3 SME class depended

The last group of barriers that emerged were based on the unique characteristic of the SMEs including their background, capabilities, skills and connections. Participant 12 stated that “I think the biggest barrier is that people don't read with understanding, especially business owners, to be honest, they, sort of like find themselves in the business, but there are some who do read”. The issue of access emerged from multiple participants. Participants 4, 7, 8, 11, 14 and 15, who made the following contributions:

- Participant 4 stated that another barrier as “lack of access to credit”
- Participant 7 indicated that “the challenge is that banks cannot give SMEs guarantees, funding for SMEs is a problem”
- Participant 8 pointed to “SMEs not having the right people with the skill in them”
- Participant 11 specified that “they don't have equipment and access to labour”
- Participant 14 pointed out that another “barrier is infrastructure, you need premises to operate your business from, commercial space and industrial space”
- Participant 15 argued that “finance is the biggest single most issue” furthermore she emphasised that “there's limited skilled resources out there particularly in the environment that we playing in.”

The company size and the ultimate goals of the SMEs were also identified as barriers. On this note, participant 15 stated that at times the size of the company is a barrier in that “I think it's access to markets because the thing is, when you're a small organization, you don't necessarily follow certain large scale project rollout because you don't have the time and you don't have a dedicated marketing division or dedicated strategist internally that you can assign to actually follow something.” Additionally, participant 3 mentioned that SMEs “are in it for a short span, and they're in it for instant gratification, they want to make money and want to make money now.”

Lastly, the SMEs abilities were also stated as a barrier by participant 11 where she indicated that “in wearing a cap of a contractor, and having had an opportunity to work with contractors that are smaller than me, maybe in scale in some way or the other. I've also picked up that you, you tend to work with a workforce that is not able to comprehend certain things.”

5.4.2. Enablers

Although not all participants acknowledged the role of SMEs within the South African economy, 80% conceded that SMEs had a significant role in job creation, wealth creation as well as poverty and inequality alleviation, which were key socio-economic problems facing the country. The other 30% felt that this was a mere theory, which was yet to be realised in practice in the South African context once execution of the current regulatory framework was improved to prioritise SMEs.

The categories making up the enabler theme emerged as private sector and public sector from the 7 codes, these are further presented in figure 6.

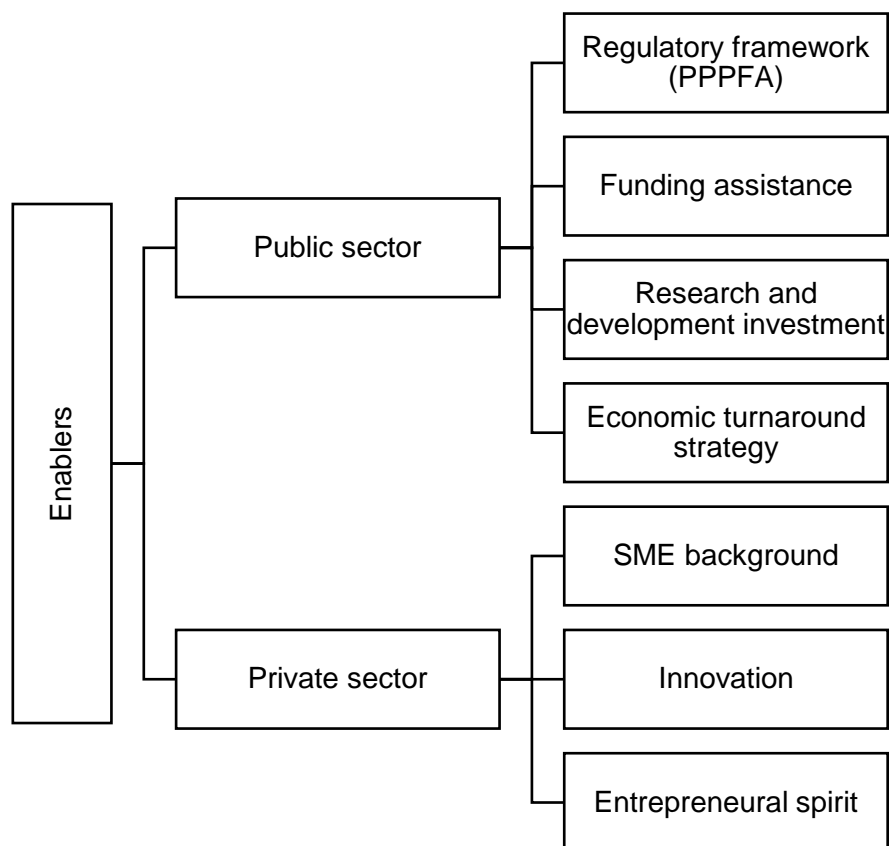


Figure 5: Enabler theme categories

5.4.2.1 Public sector

The participants identified enablers that were due to the public sector. Participant 11 identified the following enablers brought about by different spheres of government:

- “So then you've got entities like SEFA (small enterprise financing agency), and you've got other entities so funding is not a barrier anymore, but the barrier becomes how it's made easier for SMEs to tap into that funding...”
- “...so there's also a lot of work in the research and development space that I feel, has brought a little bit of innovation, particularly to enable SMEs to develop to grow and to receive some of the expertise that is required”
- “...you will appreciate that government right now is worried about economic recovery, economic turnaround, and they will pump money into infrastructure that's given, and we have seen it with the recent efforts from the presidency that it will happen”.

The regulatory framework, specifically the PPPFA was identified by six participants as an enabler. Participant 6 stated that “for me the biggest is the one where they legislated that 30% because now by law, you are forced to bring in someone that you wouldn't have been able to compete on fair basis”. Participant 14 illuminated the fact that due to the PPPFA explicitly stating the beneficiaries of the policy, citizens cannot neglect allowing access to previously disadvantaged groups, he indicated that “when coming to the enablers, I think the PPPFA really did some magic because what people used to do in the past is that they would find a way to get around policy prescriptions.” Participant 2 explained how the PPPFA was being executed by stating that “a contractor would then do a bill of quantities of those works, that he feels that obviously, is the ones that he is identifying as the 30% that you can give to local participation to a bill of quantities” Participant 9 and 1 just indicated that it was an enabler and did not go into details. Participant 9 stated that “I think the enabler would be the 30% that main contractors must give”. Participant 1 specified that “in terms of enablers is I think I've mentioned it previously, to say that one needs to look at procuring SMEs within the biggest project and prioritizing the ring fencing of the so called 30% minimum for local contractors.”

Although Participant 11 agreed that the PPPFA was an enabler, she further raised concern on the lack of understanding with regards to execution, she indicated that “the big thing that came out a few years ago that 30% assigned to SMMEs, although it created more

problems than the solutions, because nobody understands how to implement that particular policy position.”

Conversely, participant 8 could not identify any enabler, he stated that “at the moment, I'm yet to see things that I can see they are enabling for us to freely trade or boost us to actually come up to speed to the point where we can see ourselves with five, six employees now running full time as an organization and pulling and pushing resources as you need them.”

5.4.2.2 Private sector

The enablers that emerged and were attributed to the private sector had to do with SME capabilities, the sector's ability to innovate and the passion and drive from SMEs. Participant 7 who is a grade 6EP mechanical contractor credited his growth and success to his skills, stating that “I studied mechanical engineering, so I had the advantage of understanding the background of it. So whenever there is a technical issue, I'm able to analyse and bring solutions. So those are things that enabled me to tap into the industry. Basically, I have just relied on my skills.”

Participant 1 indicated innovation as an enabler by stating that “the other enablers for SME access to public procurement systems, we'll be applying innovative design principles to our infrastructure projects. For example, where a project would require a steel pipeline of a 20 bar pressure. Currently, there is new technology out there that can achieve the above pressure with plastic pipes.”

Participant 15 pointed to the following, “I think that entrepreneurial spirit is what I spoke about that most definitely is the driver”

5.4.3. Summary of the findings of research question 2

In answering research question 2, interview questions 4 and 5 were used to respond to research question 2. The categories for the barriers that emerged were: regulatory framework, system design and SME class depended. Whereas the ones for the enablers were: public sector and private sector, as summarised in Figure 6.

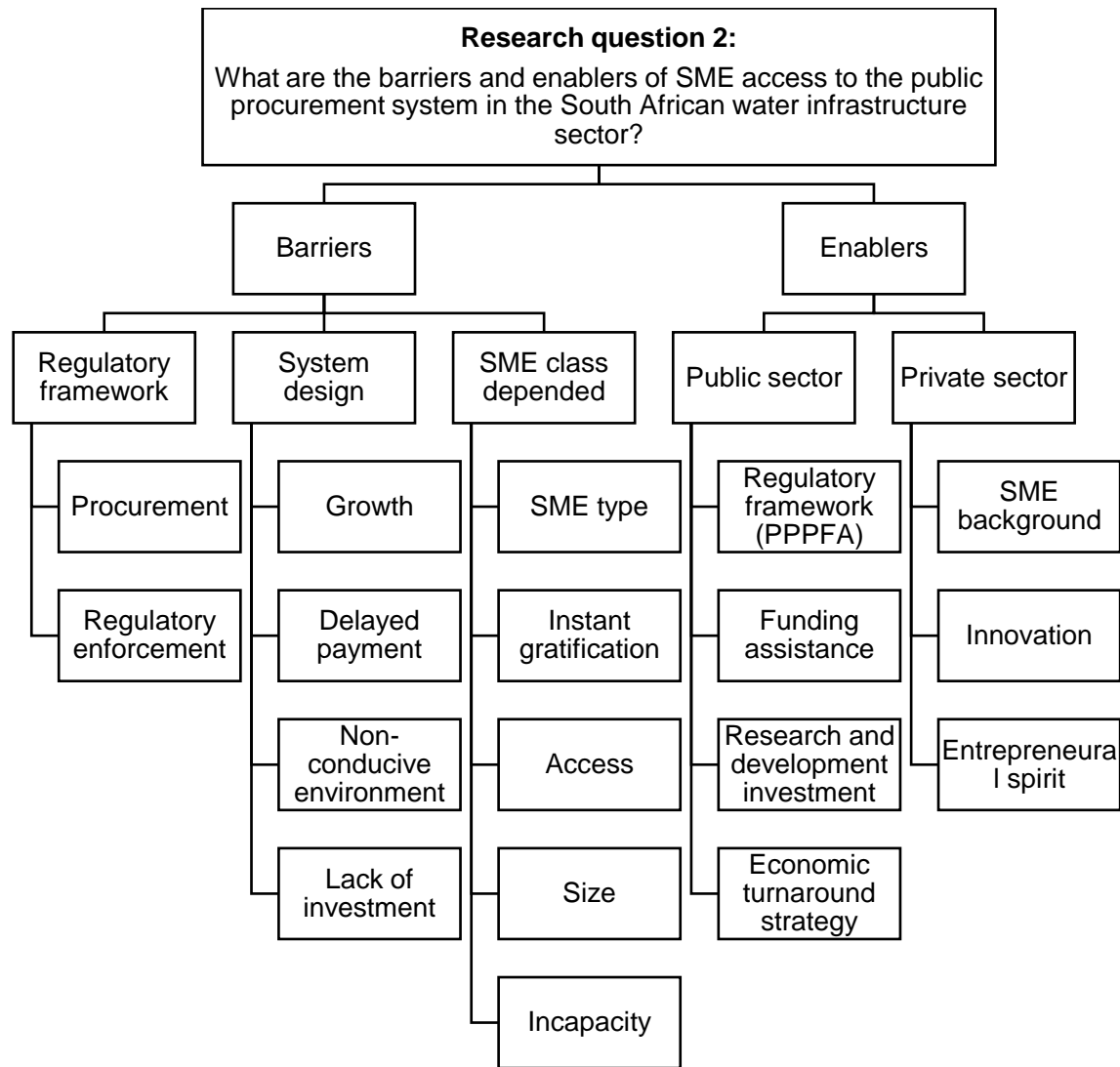


Figure 6: Overview of results for research question 2

Regulatory framework, system design and SME class depended are the three categories that emerged from the 14 codes created as barriers of SME access to the public procurement system in the South African water infrastructure sector. Comparatively, the categories making up the enabler theme emerged as private sector and public sector from the 7 codes.

5.5. Research question 3

Research question 3: What collaborative efforts are required by all stakeholders to improve the access of SMEs in public procurement?

The aim of this research question was to determine how all stakeholders namely, government departments, public entities, engineering consultants, contractors and community beneficiaries can work together to improve access of SMEs in public procurement from a South African perspective. Insights from interview question 7, 8 and 9 were used to answer this research question.

The participants were able to point out areas of improvement for all stakeholders within the value chain. What also emerged is a need for the stakeholders to work together, to find ways to improve the current situation. A total of 30 codes emerged which resulted in five main themes emerging from the interview data gathered, namely, community's role, engineering consultants' role, contractor's role, SME's role and public sector role. These results are depicted in Figure 7.

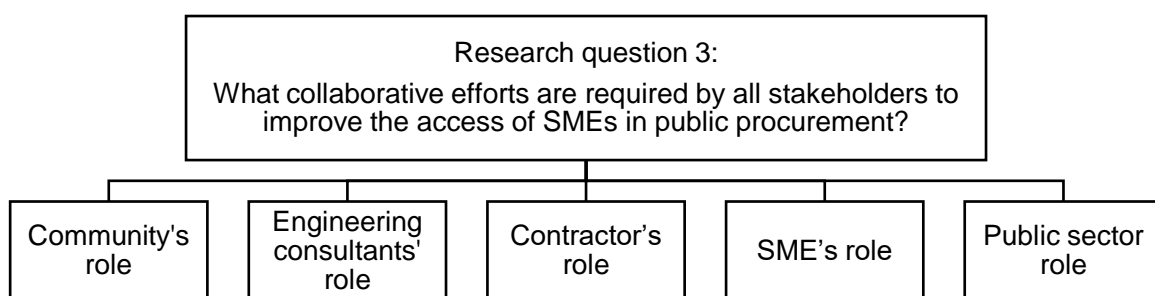


Figure 7: Collaborative efforts to improve the access of SMEs in public procurement

The results of the main themes for research question 3 are presented in Table 5 according to the number of features related to the particular theme as identified by the participants. Moreover, the results for each theme identified are discussed.

Table 5: Overview of the results for collaborative efforts required by all stakeholders to improve access of SMEs in public procurement from a South African perspective

Rank	Collaborators	Frequency
1	Public sector role	21
2	Contractor’s role	12
3	Engineering consultant’s role	12
4	Community’s role	5
5	SME’s role	4

5.5.1. Public sector role

Public sector refers to government departments, municipalities and public entities. The categories that emerged making up this theme were: refine current role, back up SMEs, collaborate, pipeline of projects, and skills pipeline, as depicted in Figure 8 and further discussed.

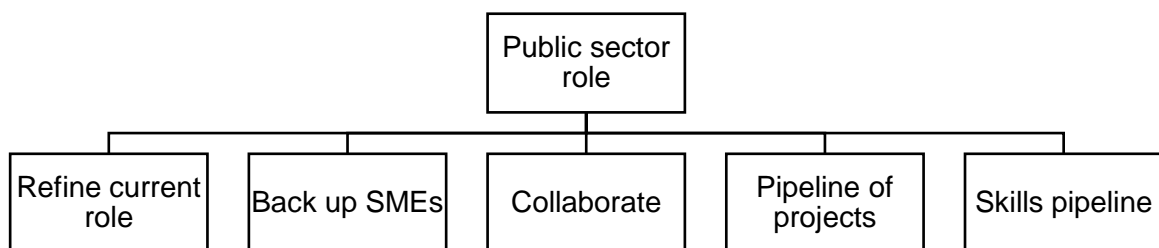


Figure 8: Overview of the categories for public sector role theme

5.5.1.1. Refine current role

There was a general feeling amongst the participants that there was an improvement in terms of government initiatives to improve access to public procurement for SMEs within the water sector through policy development throughout the years. However, there were still some challenges as noted by participant 15 and 8 with regards to policy implementation.

Participant 8 indicated that “the big thing that came out a few years ago that 30% assigned to a SMMEs, although it created more problems than the solutions, because nobody

understands how to implement that particular policy position". Where it even led to confusion in some instances as stated by participant 15 "I think also the confusion in the procurement regime there's so many legislations..." Participant 1 stated that "procurement guidelines that support SME participation must be developed. These guidelines must be able to support SMEs until they are able to stand on their own."

Moreover, the participants generally stated that the issue of corruption within the sector had to be addressed as it was crippling industry growth and competitiveness. Participant 6 stated that one way to combat corruption would be to "eliminate the use of cash, corruption becomes very difficult if people can't use cash, because with bank statements or bank transactions, it's very easy to follow the money...". Another suggestion that could alleviate corruption is transparency in SME procurement by local government as outlined by participant 2 "have every municipality to have a database of all these local SMEs within that the whole municipality. And that database would not be confidential or be hidden, it would be open and transparent to each and every one who wants to have access to that database."

Practices within the procurement space were also identified as an area for improvement. Participant 2 stated that "if we're not going to relax the criteria, to allow these small SMEs to come into the market, then we need to fund them so that they can participate within the set criteria". Participant 1 pointed government to "revaluate how projects are planned for and executed, this must be done with the SMEs in mind".

Lack of monitoring and improper reporting by government was highlighted by participant 11 "the entity that I'm serving on as a board member has been given that mandate, but they're also failing to turn it around quicker. It's my view. I feel the program's potentially that they take on and not practical in nature. And I have voiced my concern many times that the way we provide development for these SMMEs, the way we even report on development is flawed..." Additionally, participant 10 stated that "I think we should have some sort of monitoring being conducted by the Department of small business development. I think from their side, they should be more on the ground, making sure that things are implemented correctly in terms of supporting the other regulations and policies from other departments as well."

Centralization of compliance requirements were also pointed to by participant 6 "there are a lot of compliance issues meant that one need to make sure he is that has to. So, one of

the solutions that through the mall business department can do is to advocate for centralization sort of, sort of unit that can deal with these issues”.

5.5.1.2. Back up SMEs

The actions by government specifically, payment delays to SMEs were indicated as detrimental to SMEs. Additionally, these were also seen as government contribution to closing SMEs down. Participant 1 indicated that “SMEs borrow money from the banks to buy the materials because they can only receive their payments once the work is done on site. If they are delayed, government is actually contributing in closing their businesses down.”

Participant 8 who had recently started his company after being retrenched had experienced difficulties as a start-up and stated that “at the moment, there's literally nothing I can point to and say it is a program assisting small companies to actually grow from step A to step B.” It is therefore not surprising that participant 15 strongly indicated that “I think government needs to really back SMEs”

The current practice of allocating SMEs insignificant projects that are not able to sustain their businesses as explained by participant 8, was further raised by participant 12 by stating that SMEs are “doing a lot of small projects that are scattered all over the country, and they cannot be able to pay attention to a specific client”. Participant 10 called on the government to increase the reach of current initiatives such as the NYDA to more people.

Participant 11 stated that “I think it's it hasn't really been proven particularly in the South African context, that SME contribution to the economy is potentially more positive than your cooperates. I still believe there's room to fuel the role of SMEs so that they actually make an impact.”. Participant 7 indicated that “SMEs should be provided with mentorship to teach them business skills so they can be able to run their companies correctly.”

5.5.1.3. Collaborate

Keeping in mind the limitations that SMEs are inherently faced with, the participants called for all stakeholders to create a conducive environment for SMEs to grow and thrive, through working together, establishing clearly defined growth plans and proving the necessary support.

Participant 5 stated that “If we work hand in hand, the government to avail the capital and SMEs to deliver quality, it's a collaborative effort...” Participant 9 stated that “my suggestion would be I think, about 15 years ago, it used to happen, where there's a training budgets on a project, and before we even start working, the SMEs that are supposed to work on the project, they go for training” meaning that government has to factor the cost of training in their project budget.

The importance of proper planning when it comes to building SME capacity was emphasised by participant 1 where he indicated that whilst developing SMEs to be able to stand on their own “an exit strategy must be developed and clearly communicated to the SMEs”

Participant 9 gave an example of a skills transfer project “there was project which I think was great and enabled access where the tender requested established contractors to only bid for supervision of SMEs and had no share on the actual works. So our profit was based on site attendance and supervision. We also did a lot of mentoring and training of SMEs” This was further echoed by participant 15 when she indicated that “the challenge, though, is that some of the programmes that government run, they need to start looking at entities like ourselves to run them because there's a track record. There's a proven track record of having done this successfully before,”

Participant 12 pointed to a practice by government “as employers we are forcing subcontractors to the main contractor and the main contractor ends up sabotaging the performance of the subcontractors” Similarly, participant 9 stated that “government must be involved in identifying the 30% that must be subcontracted, this should not be left to the main contractor to deal with alone” Additionally, participant 1 indicated that “we encourage our clients to do is to consider that the 30% of the scope of works that they tend to give to the smaller contractors for empowerment programs. They must first secure the prices and put those prices as a piece some in the main contract BOQ. So, the main contractor will then only place mark-up to manage the small contractor, allowing him to take overall responsibility of the job”.

Another collaboration option was identified by Participant 9 when he outlined that “I think what can work is that when an appointment is made, the client must actually have an Indaba or whatever meeting with this major suppliers to find common ground to see how they can assist the SMEs to be able to, get materials from them because this is a big setback for SMEs.”

5.5.1.4. Pipeline of projects

The impact of an insolvent government, stagnant economy and lack of invest by the private sector has resulted in a backlog in infrastructure development. Participant 15 states that “we need to have a spectrum of projects that are rolled out, and it needs to be at mass because we've got a major backlog”.

5.5.1.5. Skills pipeline

Another shortcoming identified as outlined on the findings for research question 3 was a shortage of skills within the sector. Participant 5 indicated that “investing in human resource tends to be taken for granted, and then we compromise on the deliverables and on the on the quality.”

The built environment sector requires a lot of specialized skills due to the technical complexity of the works. Participant 11 stated that government can “pump money into TVET educational institutions, so that they can turn citizens into a competent workforce that's required for certain level of work within the construction space as an example.”

5.5.2. Contractor's role

The participants pointed to a need for contractors to enhance their current role and also collaborate with other stakeholders to improve the access of SMEs in public procurement.

Contractors are called upon to avoid unethical behaviour such what participant 6 mentioned as giving “SMEs all the non-profitable rates, they'll say the SME will supply us with concrete and then to win the job, they don't put any profit on concrete. So, it becomes difficult for SMEs to execute the work” Furthermore, participant 6 indicated that contractors should “not be colluding amongst themselves to exclude everyone”

Participant 9 and 14 spoke to the issue of proving bond guarantees and sureties on behalf of SMEs where they are the main contractor. Participant 9 stated that “as the main contractor must provide performance guarantee for the entire works.” Participant 14 indicated that “we have also seen that one of the biggest limitations to the small companies is collateral, we also take out insurances on their behalf.”

Existing supplier contract benefits between contractors and suppliers should be extended to SMEs where the they are subcontracted as indicated by participant 6 that contractors “have all these old standing relationships where they need to be introducing their SMMEs,

especially those that are they are mentoring for the long run, to buy at special rates, so, that allows them to be more competitive in the market”.

Real empowerment needs to be actioned and achieved as indicated by participant 14 “...we would actually provide bridge funding to close the funding gap”, moreover “we also let them get involved with critical work” and lastly “we allow them to you know, to get involved with intelligent work, which is complex engineering works. Another way to combat SME payment delays as outlined by participants 10 is to find a way to “force the main contractors to actually pay SMEs before they even get the payment”.

5.5.3. Engineering consultants’ role

The findings from the interview data indicate that engineering consultants need to enhance their role and also collaborate with other stakeholders to improve the access of SMEs in public procurement.

Engineering consultants are called upon according to participant 1 and 10 to be innovative. Participant 1 indicated to using alternative material for pipe specification as a factor that increases access to SMEs. Moreover, participant 10 stated that engineering consultants need “to look at the local suppliers, not only to design systems that are not in the country, but you know, to also give the small, emerging suppliers, manufacturers an opportunity for them to also bring in their new products into their market into the construction market into the water sector.”

An issue of sabotage was raised by participant 12 where he stated that “in some projects, you’ll see that employer’s agent will also make it difficult for SMEs to perform their work”

The more seasoned engineering consultants need to contribute to skills development as mentioned by participant 6 that “I could play more on the advisory role, and also, we could also play a role in the mentorship”. In addition, adherence to the ethical conduct as indicated by participant 6 engineering consultants can “enhance society through advising our clients correctly”.

5.5.4. Community’s role

The apartheid regime denied many of the marginalised groups access to opportunities for improving their lives. Recently, project disruptions are at times as the result of community stoppages as stated by participant 14 “my major problem, for instance, my biggest

problem for now has been dealing with communities. That's what's keeping me awake right now".

Furthermore, participant 9 stated that "a colleague of mine reported that the local SMEs came and requested that the 30% subcontracting value to be given to them 30% whether we give them work or not, they wanted the 30% contract value in cash".

Additionally, participant 10 indicated that "I think from the community's perspective, if they can have a little bit of understanding of where we're trying to move into in terms of construction sector, opening up our borders, for lack of a better word to allow other SMEs in from other communities".

Participant 14 stated that "the biggest thing out of the lessons, I would say, is South Africans are not necessarily proud of being South Africans. We do not put the country first. If we had to look at other countries, you know, they don't have a good track record in terms of labour relations".

5.5.5. SME's role

In as much as SMEs have limitations, there are things that they can do to improve their business prospects when it comes to access to public procurement.

Participant 9 pointed to "a lot of the SMEs do not have proper documentation such as TAX compliance, workman 'ship compensation, VAT registration etc." which then results in SMEs not being able to claim VAT for all material bought, which is in essence a loss.

Some things are within the SMEs' control such as what participant 10 indicated "I think the biggest barrier is that people don't read with understanding, especially business owners, to be honest, they, sort of like find themselves in the business".

When it comes to thriving within the water infrastructure sector, SMEs need to follow the advice of participant 7 "I always advise other SMEs that they should start businesses in industries that they understand."

5.5.6. Summary of the findings of research question 3

In answering research question 3, interview questions 7, 8 and 9 were used to respond to research question 3. The five main themes that emerged from the interview data were: community's role, engineering consult's role, contractor's role, SME's role and public sector's role, as summarised in Figure 9.

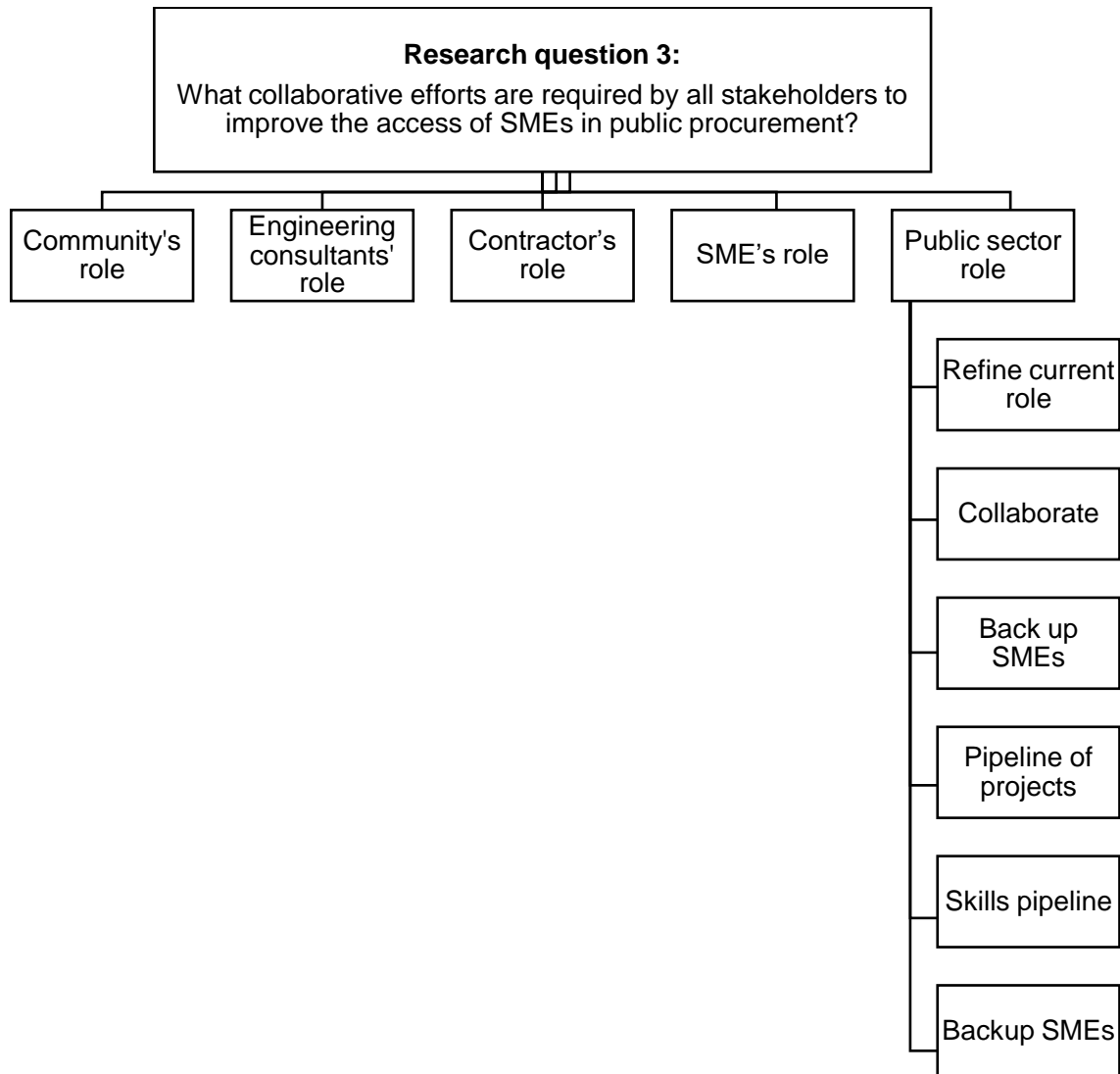


Figure 9: overview of results for research question

The public sector, followed by contractors and engineering consultants were the top three stakeholders identified by the participants as having the biggest impact with regards to collaborative efforts that are required to improve the access of SMEs in public procurement.

5.6. Additional findings

This section focusses on secondary data that was used to validate the findings from the interview data collected. This process of validation is referred to as triangulation (Saunders & Lewis, 2018). The findings raised by the participants resulted in the following reports being selected to validate the results: construction monitor: contractor development, support programs by the Department of Small Business Development, sustainable infrastructure development symposium South Africa and lastly Implementation guide: pertaining to the preferential procurement policy framework act, act no 5 of 2000.

5.6.1. Construction monitor: contractor development

The construction monitor: contractor development report is a report that is generated by the CIDB on a quarterly basis, to report on the state of contractor development (CIDB, 2020). The participants under research question 3, stated that the needs to be proper monitoring of SME development, participant 11 even further elaborated that the current manner of reporting by government departments was flawed. According to the CIDB, (2020) there is a programme for supporting contractor development and transformation which was established in September 2011, namely, National Contractor Development Programme (NCDP). However, the report could not give progress to date as stated “An assessment of contractor development within the NCDP is not included here. The CIDB is however establishing mechanisms to monitor such contractor development, and aims to report on the NCDP in future editions of the CIDB Construction Monitor – Contractor Development.” Thus the report confirms the participants’ findings.

Moreover, the participants raised the issue of SME incapacity under challenging factors facing the sector specifically, low levels of education, access to funding, access to credible labour, inability to compete in the market, lack of understanding the business environment and reinvesting in their businesses for growth.

The CIDB (2020) found the following to be issues impacting on contractor growth:

- “• Good individual and collective experience;
- Attracting and retaining the right people and maintaining a strong workforce;
- The maintenance of high standards;
- Investment in fixed assets; and
- Working closely with the supply chain.”

Therefore, the CIDB report corroborates the findings by the participants.

5.6.2. Support programmes by Department of Small Business Development

The Department of Small Business Development (DSBD) website did not have a consolidated report on the support programs offered to SMEs. However, the programs were listed on their website (Department of Small Business Development (2020)). The participants raised the issue access to funding and SME incapacity as a barrier to public procurement access. Furthermore, participant 8 could not identify any enabler to public procurement. Conversely, participant 11 stated different initiatives by government to capacitate SMEs including the access to funding through the Small Enterprise Funded Agency (SEFA). According to the DSBD website, the department offered support programmes that were a response to the Covid-19 pandemic, namely, debt relief finance scheme, business growth/resilience facilities, restructuring of SEFA-funded loan and spaza support scheme (Department of Small Business Development, 2020). The support program that is relevant to the study relates to the SEFA funded loan, which then confirms the point raised by participant 11.

5.6.3. Sustainable infrastructure development symposium South Africa

The sustainable infrastructure development symposium South Africa (SIDSSA) is an initiative from the office of investment office in the office of the presidency. The aim of the symposium was to show case implementation ready projects to investors, in order to seek funding. The way of preparing projects was institutionalised to follow a blended finance approach (The Presidency: Investment and Infrastructure Office, 2020).

The participants raised issue of economic stagnation due to a lack of investment on large projects resulting from the government’s inability to stimulate the economy. Furthermore,

the participants identified that government needed to establish a pipeline of projects in order to enhance SME growth within the sector.

The president, President Cyril Ramaphosa, in his address indicated that “The Minister of Finance has put forward a package of reforms to address macroeconomic imbalances and boost long-run growth as the crisis eases. In so doing we can lower borrowing costs and provide additional space for infrastructure investment to occur. The recovery package is intended to contribute to the speed at which South Africa can emerge from the crisis and improve the capacity of the economy to deliver sustainable inclusive growth and job creation.” (The Presidency: Investment and Infrastructure Office, 2020).

According to Dr Kgosientso Ramokgopa, head of the investment and infrastructure office in the presidency stated that “On the 28th and 29th of May 2020, the infrastructure investment office in the presidency, hosted its first pitching session, presenting 93 projects to investors nationally and globally with 48 projects being in the post feasibility stage. The total investment value of the projects is estimated to be around R650 billion.” Furthermore he indicated that “...the SIDS process will trigger an evaluation of the legislative environment to usher in a new dispensation for the development and funding of a robust and reliable project pipeline.” (The Presidency: Investment and Infrastructure Office, 2020).

According to The Honourable Patricia de Lille, Minister of Public Works and Infrastructure, the SIDSSA launched the infrastructure project pipeline, that has “used a new comprehensive methodology that moves away from a transactional approach and ensures the realisation of the country’s development goals for the benefit of our people” (The Presidency: Investment and Infrastructure Office, 2020).

Government has initiated the process to attracting investment into the country’s infrastructure, therefore the SIDSSA report validates the findings by the participants.

5.6.4. Implementation guide: pertaining to the preferential procurement policy framework act, act no 5 of 2000

The regulatory framework, specifically the PPPFA was identified by six participants as an enabler, although participant 11 the PPPFA as an enabler, she further raised concern on the lack of understanding with regards to execution.

In 2011, the national treasury develop implementation guidelines for the PPPFA implementation (National Treasury, 2011). These guidelines indicate the applicability, the

compliance requirements during execution through the tender process and also how verification can be done (National Treasury, 2011)

These guidelines, provide a road map for implementation. However, it could be that procurement practitioners within public entities are not aware of these guidelines or have a different interpretation of meaning hence the inconsistencies in implementation as noted by participant 11.

5.7. Conclusion of findings

This chapter presented results from six interview questions. These interview questions were based on three research questions as outlined in chapter three. In answering research question 1, eight main themes emerged as the challenging issues facing the built environment sector, namely, government systematic failures, corruption, economic stagnation, apartheid legacy, financial challenges, SME incapacity, technical skills shortage and community disruptions.

For research question 2, the categories for the barriers that emerged were: regulatory framework, system design and SME class depended, while the ones for the enablers were: public sector and private sector.

Research question 3 findings pointed to five main themes that emerged from the interview data were: community's role, engineering consult's role, contractor's role, SME's role and public sector's role.

The next chapter discusses these findings against available literature as discussed in chapter 2.

6. CHAPTER 6: DISCUSSION OF RESULTS

6.1. Introduction

This section discusses the findings from the semi-structured interviews conducted in Chapter 4, and analysed and outlined in chapter 5. The aim of this chapter is to compare the findings to the literature and to highlight the extent to which the findings confirm, extend or contradict the literature reviewed in chapter 2.

6.2 Discussion of research question 1

Research question 1: *What are the most challenging issues facing the built environment sector?*

The aim of research question 1 was to determine what the participants viewed as challenges facing the built environment sector, taking into consideration its importance with regards to service delivery and also the downward budget revision the sector has experienced to date.

Eight main themes emerged from the data collected, namely, government systematic failures, corruption, economic stagnation, apartheid legacy, financial challenges, SME incapacity, technical skills shortage, and community disruptions. Of these results, government systematic failures was ranked the highest by the participants. The research question is discussed according to the themes that arose in chapter 5.

6.2.1.1. Government systematic failures

There were four categories that made up the first theme, namely, government insolvency, lack of funds to implement projects, procurement regulation, local government and public entities' institutional memory. These are discussed below.

6.2.1.1.1. Government insolvency

The participants stated that government was unable to stimulate the economy through capital invest, as evidenced from the lack of big projects running simultaneously in the country. The findings confirm what the CIDB (2019) and Mnisi (2020) reported that the construction sector was in need of projects, the highest growth was last seen in 2017.

6.2.1.1.2. Lack of funds to implement projects

The participants indicated that there was plenty of projects that have been conceptualized, but lacked funds for implementation. This confirms the findings by Watermeyer & Phillips (2020), Mnisi (2020) and the CIDB (2019) stating that the sector was in need of investment to avoid its demise.

6.2.1.1.3 Procurement regulation

The main issue that arose with regards to procurement regulation was that the manner in which the bid specifications were drafted, resulted in SMEs not qualifying for the tenders. Furthermore, the participants were concerned about the evaluation criteria, stating that it focussed mainly on price and disregarded the technical part of the proposal.

The findings confirm and also extend the literature in the following manner. Uyarra et al (2014) raised the issue of over stipulating specifications as a barrier for SMEs to access public procurement. Furthermore, overstating specification may result in an administrative burden (OECD, 1996; McEvoy 2016). However, none of the literature points to the bid price as being a determining factor of success in procurement.

6.2.1.1.4 Local government and public entities' institutional memory

The findings indicate that the 5-year performance based contract given to executives in local government and public entities results in institutional memory being lost. The reviewed literature questioned some of the decisions made by government agencies, such as their project planning and execution abilities (Watermeyer & Phillips, 2020), as well as the skills of procurement practitioners (Schapper, et al., 2006). Therefore, this finding on how local government and public entities' conduct their roles and responsibilities is confirmation of existing literature.

6.2.1.2 SME Incapacity

The incapacity of SMEs was raised by the participants as an issue facing the sector, specifically, technical, financial or business abilities that limit their participation in the sector. This finding confirms existing literature, according to Akenroye & Aju (2013), SMEs have issues with regards to funding inflexibility, incapacity and lack of experience. This is the reason why (McKevitt & Davis, 2015) stated the need for government support through

training and mentorship to enhance SMEs access to public procurement. Thus, the finding confirms existing theory.

6.2.1.3 Financial challenges

Financial management emerged as an issue facing the built environment sector, where participants stated that municipalities lacked good corporate governance and financial management. This finding was raised by Watermeyer & Phillips (2020), where it was reported that the inability of most municipalities to spend their allocated capital expenditure budgets in 2017 hampered service delivery. Therefore, the finding of financial mismanagement is a confirmation of existing literature.

6.2.1.4 Corruption

Participants raised the issue of corruption in the sector and stated that it was extremely high, and has resulted in SME lack of growth. This serves as confirmation of existing literature as the issue of corruption in public procurement was raised by several authors, Harland, Telgen & Callender (2012), Schapper, et al. (2006) and McEvoy (2016).

6.2.1.5 Economic stagnation

Lack of investment by both private and public sector in the built environment was raised as a concern that was attributed to economic stagnation. Mnisi (2020) raised a serious concern with regards to lack of funding in infrastructure. If the economy was growing, lots of investment would be coming into the country. Whilst noted the issue of the project backlog, he further discussed the maintenance backlog of existing infrastructure (Meissner, 2015). This finding on economic stagnation confirms existing literature.

6.2.1.6. Apartheid legacy

The participants raised the issue of SMEs not allowed access due to lack of recognition as agents by the OEMs. This matter of apartheid is unique to the South African context. However, Harland, Telgen & Callender (2012) found that larger enterprises dominate the public procurement space. Moreover, (Knight, Harland, Telgen, Thai, Callender & McKen, 2007) found that the preservation and development of SMEs was the only way they would be able to compete with large entities currently dominating the public procurement. This

finding is an extension to the existing literature, as it is specific to the South African context.

6.2.1.7. Technical skills shortage

Technical skills shortages were raised by participants in both the public and private sector, where they stated the existence of a skills gap between senior and junior engineers, in government departments and as well as a shortage of artisans and capable SMEs.

The skills gap between senior and junior engineers can be attributed to apartheid, since the majority of South Africans were not allowed access to certain opportunities, including studying engineering (Migiro, 2012). Furthermore, the skills gap within government departments was raised by Watermeyer & Phillips (2020) and Schapper, et al., (2006). Lastly, SME incapacity was covered in the literature by Akenroye & Aju (2013) and McKevitt & Davis (2015). This finding on technical skills shortage is a confirmation of existing literature.

6.2.1.8. Community disruptions

The last issue elevated by the participants was community disruptions and other stoppages during the project execution phase. According to Sohail & Cavill (2008), construction project stoppages are a global issue that are often attributable to corruption. In South Africa, this is further exacerbated by the construction mafias, which is regarded as grand corruption against the state (Van Dijk, 2007). Moreover, project stoppages may arise from lack of payment (Alinaitwe, Apolot & Tindiwensi, 2013). Thus, the finding on community disruption and other stoppages confirms existing theory.

6.2.3. Summary of discussions for research question 1

Research question 1 identified the most challenging issues facing the built environment sector and compared the issues with existing literature. Out of the eight themes identified, two were found to have extended the existing literature as summarised in Table 6.

Table 6: Discussion overview for research question1

Theme	Extension to theory
Procurement regulation	Procurement practitioners disregard the technical soundness of the proposal and only focus on the lowest price received.
Apartheid legacy	South African SMEs are not allowed access due to historical legacy of racial, class and physical segregation

6.3 Discussion of research question 2

Research question 2: *What are the barriers and enablers of SME access to the public procurement system in the South African water infrastructure sector?*

The aim of research question 2 was to determine hindrances to public procurement from a South African perspective. The role of SMEs to the economy was also determined under this research question through interview questions 4 and 5.

Two main themes emerged from the interview data, namely, barriers and enablers. The research question is discussed according to the themes that emerged in chapter 5.

6.3.1. The role of SMEs in the South African economy

Although the theory is explicit on the role of SMEs in an economy, namely, contribution to economy, society, innovation, politics as well as assisting governments to meet their national economic goals in employment creation and reducing poverty rates (Akenroye & Aju, 2013; Telgen & Callender, 2012), 30% of the participants stated that the role of SMEs in South Africa was yet to be determined. This is underpinned by the improvement in the execution of current regulatory framework to prioritise SMEs.

6.3.1.1 Barriers

Three categories emerged from the interview data as regulatory framework, system design, and SME class depended.

6.3.1.1.2. Regulatory framework

The two barriers identified here pertained to the manner in which the regulation was formulated, as well as the lack of monitoring by government departments. Kajimoshakantu (2007) noted that some enterprises viewed the PPPFA in bad light in reference

to it offering unreasonable incentives. The lack of creditable and dependable data in public procurement is an issue that was raised by OECD (1996). These findings confirm existing literature.

6.3.1.1.3. System design

Growth within the sector, delayed payment for work done, the non-conductive environment and lack of investment were raised as categories under system design. Delayed payment are prevalent in the sector, 72% of subcontractors have dealt with delayed payments, and furthermore this was a contributing factor to construction delays (Propeller Aero, 2020; Alinaitwe, Apolot & Tindiwensi, 2013). Therefore, the issue of a non-conductive environment within the sector confirms existing literature.

6.3.1.1.4 SME class depended

The participants stated that the type of SME, size, access, incapacity and instant gratification define this category. The calibre of SMEs found in South Africa are two-fold: those that are skilled and have connections, and those that are not skilled and lacking education. This finding is addressed in the literature by Migiro (2012) by elevating the historical segregation in South Africa. Furthermore, the issue of lack of skills by SMEs has been highlighted by McKeivitt & Davis (2015). This finding confirms existing literature.

6.3.1.2 Enablers

Categories identified as enablers emanated from the private and public sector. Findings under the public sector related to the regulatory framework (PPPFA), funding assistance, research development and economic turnaround. Whilst the findings under the private sector were SME background, innovation and entrepreneurial spirit.

The regulatory framework, specifically the PPPFA was noted as a hindrance by Kajimo-shakantu (2007), which is a contradiction of what this study found. However, (McEvoy, 2016) found that enforced subcontracting was an enabler, which is in agreement with the findings of this study. Therefore, the impact of the PPPFA regulatory framework enabling SME access is inconclusive.

Providing funding for SMEs is another means of providing support for SME development, which has been noted as an enabler (McKeivitt & Davis, 2015). Thus, the finding on providing funding for SMEs as an enabler confirms existing literature. The much needed

investment into the built environment will allow and stimulate the construction sector and address the issue of project backlog as stated by Karabulut, Haririan, & Huseyin Bilgin (2010). The finding on economic turnaround as an enabler confirms existing literature.

When coming to the findings under the private sector, SME abilities were noted by Tammi, Saastamoinen, & Reijonen (2014) as enablers, including issues of entrepreneurial spirit and innovation (Flynn et al. 2015). However, the study found that when consulting engineers are innovative in drafting specifications and using new technology they are able to enable SMEs access to public procurement. The innovation finding is an extension of the literature.

6.3.2 Summary of discussions for question 2

Research question 2 established the barriers and enablers of SME access to the public procurement system in the South African water infrastructure sector. The role of SMEs contributing positively to the economy was contradicted by some participants. Additionally, the PPPFA regulatory framework as an SME enabler was inconclusive due to contradictions in the literature. Furthermore, one extension to theory was identified as stipulated in Table 7.

Table 7: Discussion overview for research question 2

Category	Comparison to theory
Role of SMEs in an economy	Contradictions to the existing literature were noted by 30% of the participants, stating that the role of SMEs in South Africa was yet to be determined, as long as they are prioritised.
Public sector enabler: Regulatory framework (PPPFA)	Kajimo-shakantu (2007) found that the PPPFA was viewed as a hindrance whilst, (McEvoy, 2016) found that enforced subcontracting was an enabler. The impact of the PPPFA regulatory framework enabling SME access is inconclusive.
Private sector enabler: Innovation	Innovation in drafting specifications and using new current technology enable SMEs access to public procurement

The findings pertaining to the remaining categories were confirmation of existing literature.

6.4. Discussion of research question 3

Research question 3: *What collaborative efforts are required by all stakeholders to improve the access of SMEs in public procurement?*

The collaborative efforts that emerged from the interview data revealed five themes, namely, community's role, engineering consultant's role, contractor's role, SME's role and public sectors role. These are discussed below.

6.4.1. Public sector's role

The categories that emerged from this theme are: refine current role, back up SMEs, collaborate, pipeline of projects, and skills pipeline.

The refinement of government's current role pertains to the enhancement of its current role in developing guidelines to support SMEs, eliminating confusion in policy implementation, as well as addressing corruption. This finding has been addressed in the literature by various authors who identified training and development as a need for SMEs and procurement practitioners (Akenroye & Aju, 2013; McKeivitt & Davis, 2015; Schapper, et al., 2006). Corruption within public procurement was identified in the literature by several authors, namely, Harland, Telgen & Callender (2012), Schapper, et al. (2006) and McEvoy (2016). These findings are a confirmation of existing literature.

Backing up SMEs was highlighted with regards to the issue of payment delays to SMEs as a financial management issue, and also enabling SMEs to have a larger share in public procurement. Financial mismanagement in the public sector was raised before (Watermeyer & Phillips, 2020). Public procurement is still largely dominated by large enterprises (Harland, Telgen & Callender, 2012). This finding confirms existing literature.

In terms of collaborating, it was found that all stakeholders have to work together to provide access to SMEs through the provision of training, mentorship, and accountability on policy execution for subcontracting. The existing literature is clear as each stakeholder has a role to play in enabling access to SMEs, and not government alone, hence the formation of the IRSPP (Harland, Telgen & Callender, 2012). These findings on collaboration confirms existing literature.

On developing a pipeline, participant 15 stated that the sector was in need of a spectrum of projects to be rolled out at mass. This was addressed in literature by Mnisi (2020) and CIDB (2019) where the indicated that the sector was in need of investment that aimed at

addressing the backlog in critical projects rollout. Thus, this finding confirms existing literature. On the other hand, the skills pipeline is outlined by the participants to relate to the shortage of skills within the sector. This finding was discussed by Watermeyer & Phillips (2020) when they questioned the planning ability of the public sector on large projects. This finding confirms existing literature.

6.4.2. Contractor's role

On the role of contractors, the participants called up on contractors within the built environment sector towards avoiding corruption. Furthermore, they were drawn towards providing real support to SMEs to enhance their access to public procurement. Contractors have a role to play in creating support and mentorship to SMEs as noted by McKevitt & Davis (2015). Moreover, much has been found on the issue of corruption in public procurement (Sohail & Cavill, 2008). This finding confirms the existing literature

6.4.3. Engineering consultant's role

The findings with regards to the role of engineering consultants from the participants' view in enabling access to SMEs dwelt upon innovation, ethical behaviour and supporting SMEs. Like contractors, engineering consultants have a role to play in creating support and mentorship to SMEs as noted by McKevitt & Davis (2015). Moreover, temptations for acting unethically need to be avoided (Sohail & Cavill, 2008). Additionally, innovation by engineering consultants is an extension to existing literature as was outlined under research question 2.

6.4.4. Community's role

According to the participants, the finding pertaining to the role of communities within providing access to SMEs to public procurement, hampered on the disruptions experienced on demands of the 30% stake. Communities are the beneficiaries of the infrastructure being constructed. Therefore sabotaging projects for kickbacks and stealing (Sohail & Cavill, 2008) is in essence self-sabotage. This finding confirms the existing literature.

6.4.5 Summary of discussions for research question 3

Research question 3 outlined the collaborative efforts required by all stakeholders to improve the access of SMEs to public procurement. Only one category, namely, innovation by engineering consultants was found to have extended the existing literature, as summarised in Table 7. The findings pertaining to the other four themes were confirmation of existing literature.

6.5. Conclusion

The results for research questions 1, 2 and 3 as outlined in chapter 3 were discussed in this chapter. The aim of this chapter was to compare the findings in chapter 5 to the literature reviewed in chapter 2. The discussions for research question 1 found that two of the themes identified, namely, procurement regulation and apartheid legacy, extended the existing literature. Interestingly, under research question 2, the role of SMEs contributing positively to the economy and PPPFA was contradicted by some participants. Furthermore, one extension to theory was identified under innovation as an enabler category under the private sector.

7. CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

This study set out to discover the challenging issues facing the built environment sector, in particular, the barriers and enablers of SME access to public procurement in South African water infrastructure projects, and ultimately determine what collaborative efforts are required by all stakeholders to improve the access of SMEs in public procurement. Historically, academic literature on public procurement had been neglected, as research studies on were largely contributed by North American and European regions (OECD, 1996). Although there has been a shift from this perspective, the study aimed to contribute to building theory in management science from a perspective of South African water infrastructure projects.

This study was divided into seven chapters as follows: chapter 1 focussed on the need of the research and the objective of the study. Thereafter, chapter 2 the need for the study was argued from an academic point of view. Followed by chapter 3 which presented the purpose of the study through three research questions. Subsequently, chapter 4 outlined the research methodology as well as the reasons why it was selected. Afterwards, chapter 5 outlined the sample and the results of the study. Followed by chapter 6 where the results were discussed.

Chapter 7 will focus on recommendations and conclusion, pulling all findings into a proposed framework to answer the research questions raised in chapter 3.

7.2. Principal findings

The principal findings of this study relate to the challenges currently facing the built environment sector, in particular, the barriers and enablers of SME access to public procurement in South African water infrastructure projects. In addition, these include collaborative efforts required by all stakeholders to improve the access of SMEs in public procurement. These findings are based on the research questions, the themes that emerged and the associated findings contrasted against literature. The key findings are presented in Figure 10, as a proposed framework illustrating the collaborative efforts required to provide access to SMEs to public procurement, as well as the responsibility for each stakeholder in enhancing that access.

7.2.1 Challenges facing the built environment sector

These findings emanated from research question 1: What are the most challenging issues facing the built environment sector?

The study uncovered what the participants perceived as the challenges facing the built environment sector. Government systematic failures, corruption, economic stagnation, apartheid legacy, financial challenges, SME incapacity, technical skills shortage and community disruptions, were the main themes that emerged. Moreover, four subthemes emerged for the government systematic failures, as presented in chapter 6, Figure 2. The challenges identified involves aspects from both the public and private sector, thus indicating the importance of both stakeholders in enabling the success of the built environment sector.

When contrasted against literature, two findings were found to be an extension of theory under the following themes, procurement regulation and apartheid legacy.

7.2.2. Barriers and enablers of SME access to public procurement in South African water infrastructure projects

These findings emanated from research question 2: What are the barriers and enablers of SME access to the public procurement system in the South African water infrastructure sector?

The two main themes that emerged for this research question were barriers and enablers. Furthermore, the categories for the barrier theme that emerged were: regulatory framework, system design and SME class dependent. On the other hand, the ones for the enabler theme were: public sector and private sector. The unique South African history played a role in making some extension to existing literature as discussed in chapter 6, Figure 6. The comparison with existing theory was inconclusive for the Regulatory framework, specifically the PPPFA aspect. Moreover, contradictions to existing theory were noted with regard to the role of SMEs in an economy. Additionally an extension to theory was identified in the usage of innovation as an enabler by the private sector.

7.2.3. Collaborative efforts to improve the access of SMEs in public procurement

These findings emanated from research question 3: What collaborative efforts are required by all stakeholders to improve the access of SMEs in public procurement?

The five main themes that emerged from the interview data on this aspect were: community's role, engineering consult's role, contractor's role, SME's role and public sector's role. The public sector role had six categories that emerged as illustrated in chapter 6, Figure 9. The comparison against theory revealed the same extension in theory as indicated above, namely innovation by engineering consultants.

Figure 10 below presents a proposed framework for providing access of SME access to public procurement in South African water infrastructure projects as well as the stakeholders responsible. The framework is made up of three elements, namely, sectorial challenges, public procurement barriers and finally public procurement enablers. The framework outlines what should be eliminated as well as by whom, likewise the same is indicated for what needs to be enforced. The three elements should be implemented holistically, as they are depended on each other. Furthermore, the framework proposed continuous monitoring, tracking and reporting to develop credible data. This proposed framework emanated from the interview data gathered with the sample of experienced stakeholders within the sector, thus the framework only focussed on the findings from the participants' viewpoint.

Creating public procurement access to SMEs in South African water infrastructure projects

Elimanate (sectorial challenges)		Elimanate (public procurement barriers)		Enforce (public procurement enablers)	
Action	Stakeholder responsible	Action	Stakeholder responsible	Action	Stakeholder responsible
Government systematic failures: <ul style="list-style-type: none"> · Government insolvency · Lack of funding for project implement · Procurement regulation fragmentatio · Local government and SoE's institutional memory 	A1, & A2	Regulatory framework <ul style="list-style-type: none"> · Fragmented policy documents · Lack of compliance monitoring 	A1, & A2	Public sector <ul style="list-style-type: none"> · Regulatory framework (PPPFA) · Funding assistance · Research & developement investment · Economic turnaround strategy 	A1, & A2
SME incapacity	A1, A2, A3, A4 & A5	System design <ul style="list-style-type: none"> · Lack of enterprise growth · Delayed payments · Non-conductive environment · Lack of investment 	A1, & A2	Private sector <ul style="list-style-type: none"> · SME background (skills and knowledge) · Innovation · Entrepreneurial spirit 	A3, A4 & A5
Financial challenges	A1, & A2	SME class depended <ul style="list-style-type: none"> · SME type & size · Instant gratification · Lack of access · Incapacity 	A1, A2 & A6		
Corruption	A1, A2, A3, A4, A5 & A6				
Economic stagnation	A1, & A2				
Apartheid legacy	A1, A2, A3, A4, A5 & A6				
Technical skills shortage	A1, & A2				
Community disruptions	A6				

Monitoring, tracking and reporting by A1 & A2

Legend: A1 - Government departments; A2 - Public entities; A3 - Engineering consultants; A4 - Contractors; A5 - SMEs; A6 - Community beneficiaries

Figure 10: SME access to public procurement framework

7.3. Implications for all stakeholders

The study demonstrated the role that each stakeholder, namely, government departments, public entities, engineering consultants, contractors, community beneficiaries and SMEs has in enhancing the access of SMEs to public procurement. Whilst the participants requested all stakeholders to act ethically in their public procurement dealings within the water infrastructure space, some findings were specific to certain stakeholders such as:

- **Government departments and public entities** need to review their current procurement strategies, ensure that there is no ambiguity between policy statements, be supportive to SMEs (provide funding, mentorship and SME development), ensure investment inflows into the sector for project execution, and also invest in the much required skills for the sector which are contractors, engineers and artisans.
- **Contractors** need to provide support to SMEs through the provision of guarantees and sureties, implement skills transfer programmes, and also involve SMEs in their standing supplier agreements.
- **Consulting engineers** need to implement skills transfer programmes, to develop innovative designs using modern technology as an enabler to SME access to public procurement.
- **Communities** need to be made aware of, and stop sabotaging projects within their own localities results in cost overruns that are detrimental to the successful completion of the projects for their own benefit.
- **SMEs** need to ensure that they are compliant with the laws and regulations of doing business in South Africa. In addition, to be passionate about what they do, and to learn the governance practices within the public procurement system.

7.4. Limitations of research

Due to the nature of the study, the following limitations were inherent:

- The study cannot be replicated in another setting, and therefore cannot be easily corroborated by other studies, as it does not statistically represent the population;

- The researcher's perspective of the phenomenon may be limited and therefore the heterogeneous sampling technique might have omitted some important role players. (Laerd, 2012);
- The improvement in the legislation, regulations and policy that may be recommended by the study will not be assessed due to the selected time horizon namely, cross-sectional (Chen, 2013);
- The researcher's values, which play a part even on the selection of the topic and the methodology to be followed (Saunders & Lewis, 2018); and
- Inability to conduct face to face interviews due to the safety regulations around the COVID-19 pandemic.

7.5. Suggestions for future research

Based on the findings that emerged from the study, the following issues are suggested for future research:

- To determine the level of fragmentation within public procurement policy documents;
- To evaluate infrastructure investment for the past 10 years, and determine the impact of the investment made;
- To analyse SME participation in public procurement in terms of actual expenditure attributed to SMEs, and how such target can be improved;
- To analyse the impact of SME development by various government structures;
- To analyse possible partnerships between tertiary institutions and government departments in bridging the skills gap for the built environment.

7.6. Conclusion

This research has provided the following insights: the challenges facing the built environment sector; as well as the barriers and enablers of SME access to public procurement in South African water infrastructure projects. In addition, the study has determined the collaborative efforts required by all stakeholders to improve the access of SMEs in public procurement.

Semi-structured interviews with 15 participants were used to gather data. Out of the 15 interviews, two were face-face interviews while remainder were held online due to the Covid-19 pandemic. An application named Otter was used to generate interview

transcripts for text qualitative analysis. A specialist qualitative data analysis software, Atlas.ti was used to conduct data analysis.

The findings were compared to existing literature to highlight the extent to which the findings confirm, extend or contradict the literature reviewed in chapter 2. The findings were consolidated and a framework was formulated that proposes how SME access to public procurement in South African water infrastructure projects can be enhanced. The framework may be useful to government departments, public enterprises, engineering consultants, contractors and community beneficiaries in understanding their role within the built environment value chain. Moreover, the framework may be useful for citizens interested in understanding the issues facing the built environment sector, specifically water infrastructure projects and the impact of service delivery. The study also contributes to literature in SME access to public procurement from a South African perspective.

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APPENDICES

Appendix A: Interview guide



SME access to public procurement in South African water infrastructure projects

Introduction:

Opening remarks will cover the follow:

Researcher's background

Purpose of the study:

The **global unemployment rate and employment security remain a challenge for most countries** in the world with 2.2 billion people reported to be unemployed, **despite being eligible for employment** (ILO, 2019). One of the levers to address this problem is through **SME access to public procurement**. Public procurement accounts for **15-20% of global Gross Domestic Product (GDP)** (Stoffel & Müngersdorff, 2020). **Small and Medium-sized Enterprises (SMEs) have a role in assisting governments** to realise their goals of employment generation, creating innovation in economies and eradicating poverty (Akenroye & Aju, 2013).

Consent letter confidentiality contract

Request for **permission** to recording of interview,

Estimated completion period 1 hour

Benefits of the study model for SME Access to public procurement

Exploratory Questions

Question 1:

How are you involved in the construction of water infrastructure projects, and how long have you been in the industry?

Question 2:

Currently, what are the most challenging issues facing the sector?

Question 3:

What is your view on our current water security strategies?

Question 4:

What do you think is the role of SMEs in the economy?

Question 5:

What are the barriers enablers of SME access to the public procurement system in the South African water infrastructure sector?

Question 6:

Is the current procurement regulation in the sector appropriate in facilitating SME access and participation?

Question 7:

What are the risks you have observed on SME participation in major projects?

Question 8:

What do you believe your role is within the value chain in creating SME access to public procurement, and how have you discharged that responsibility?

Question 9:

What collaborative efforts are required by all stakeholders to improve the access of SMEs in public procurement?

Question 10:

What support has your organisation provided to SMEs within the water sector?

Appendix B: Ethical clearance approval

**Gordon Institute
of Business Science**
University of Pretoria

Ethical Clearance Approved

Dear Tsakane Zwane (Radebe),

Please be advised that your application for Ethical Clearance has been approved. You are therefore allowed to continue collecting your data. We wish you everything of the best for the rest of the project.

[Ethical Clearance Form](#)

Kind Regards

This email has been sent from an unmonitored email account. If you have any comments or concerns, please contact the GIBS Research Admin team.

Appendix C: Interview consent form



SME access to public procurement in South African water infrastructure projects

Dear Participant,

I am currently a student at the University of Pretoria's Gordon Institute of Business Science and completing my research in partial fulfilment of an MBA.

I am conducting research on SME access to public procurement in South African water infrastructure projects. The objective of the study is to understand the phenomenon from a multi stakeholder perspective through developing theory from the data that will be collected. Our interview is expected to last about an hour and will help us understand how SME access to public procurement can be enhanced. Your participation is voluntary, and you can withdraw at any time without penalty. All data will be reported without identifiers. If you have any concerns, please contact my supervisor or me. Our details are provided below.

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Research Supervisor: Dr Ngwako Sefoko

Email: nsefoko@gmail.com

Phone: 072 368 4415

Signature of participant: _____ Date: _____

Signature of researcher: _____ Date: _____

Appendix D: Consistency matrix

Questions	Literature	Tools	Analysis
What are the most challenging issues facing the built environment sector?	CIDB (2019); Mnisi (2020); Uyarra et al (2014); OECD (1996); McEvoy (2016); Watermeyer & Phillips (2020); Schapper, et al., (2006)	Interview guide question 1 Interview responses and Secondary Data	Frequency of challenges mentioned to produce a comprehensive list
What are the barriers and enablers of SME access to the public procurement system in the South African water infrastructure sector?	Akenroye & Aju, 2013; Harland, Telgen & Callender 2012; Flynn et al., 2015; González & Sánchez, 2016; McEvoy, 2016; Tammi, Saastamoinen, & Reijonen, 2014; Patil, 2017; McKevitt & Davis, 2015	Interview guide question 4 and 5; Interview responses and Secondary Data	Frequency analysis of barriers and enablers mentioned to produce a comprehensive list
What collaborative efforts are required by all stakeholders to improve the access of SMEs in public procurement?	Watermeyer & Phillips, 2020	Interview guide question 7, 8 and 9; Interview responses and Secondary Data	Content analysis to uncover joint stakeholder contribution identified by participants

Appendix E: Atlas.ti Codebook

Individual Codes

- Q1: Access to funding
- Q1: Apartheid contribution
- Q1: Banks classifying construction as high risk
- Q1: Black professionals shortage
- Q1: Bribing for tenders
- Q1: Bribing for tenders
- Q1: Collapsing works/structures
- Q1: Compromised ethics and morals
- Q1: Compromised quality
- Q1: Contractual obligations neglect
- Q1: Corruption
- Q1: Crowding out
- Q1: Cyclical nature of the sector
- Q1: Economic stagnation
- Q1: Enabler: Enabler government policy
- Q1: Ethical conduct
- Q1: Executive 5 year contracts
- Q1: Exposure to government initiatives
- Q1: Financial management
- Q1: Funding backlog
- Q1: Government incapacity
- Q1: Government is broke
- Q1: Government lacking funds
- Q1: Government reliance of private sector for technical guidance
- Q1: Government stagnation
- Q1: Government structural collapse
- Q1: Government closing SMEs down

Q1: High level of corruption

Q1: High risk environment

Q1: Hiring wrong people

Q1: Improper payment framework

Q1: Improper use of funds

Q1: Lack of adequate experience

Q1: Lack of capital injection

Q1: Lack of funds to implement projects

Q1: Lack of incentive for SMEs

Q1: Lack of interest

Q1: Lack of legislation enforcement and auditing

Q1: Lack of payment by Government

Q1: Lack of regulatory compliance auditing

Q1: Lack of service delivery

Q1: Lack of skills in rural communities

Q1: Lack of SME empowerment/skills transfer

Q1: Local government collapse

Q1: Local government incapacity

Q1: Loss of jobs

Q1: Managing community expectations

Q1: Minimum support for SME

Q1: Monopoly market - The big 5

Q1: Municipalities not being credit worthy

Q1: Non adherence to regulation

Q1: Nonconductive environment for business growth

Q1: OEMs not recognizing SMEs to register as agents

Q1: Old infrastructure and technology replacement

Q1: Pandemic outbreak

Q1: Payment cycle adherence

Q1: People stopping projects

Q1: Personal gain

Q1: Political interference

Q1: Poor project planning

Q1: Poor regulation of the sector

Q1: Private sector not willing to invest in the sector

Q1: Procurement corruption

Q1: Procurement process killing SMEs

Q1: Procurement regulation

Q1: Procurement specification not suitable for SMEs

Q1: Project disruptions

Q1: Project interrupted by communities

Q1: Projects drying up

Q1: Prolonged tender procurement processes

Q1: Regulatory gaps

Q1: Regulatory guidelines not being adhered to

Q1: Sector infiltration

Q1: Skilled professionals leaving the country

Q1: Skills gap

Q1: SME access to credible labour

Q1: SME access to funding

Q1: SME access to skills challenge

Q1: SME lack of payment

Q1: SME lack of skills to compete

Q1: SME market penetration

Q1: SME neglect

Q1: SME not understanding the business environment

Q1: SMEs not investing in their businesses for growth

Q1: SMEs wanting instant gratification

Q1: Public entities and local government loss of institutional memory

Q1: Spatial inequality- affecting job preferences

Q1: Staffing challenge

Q1: Substandard work

Q1: System challenges

Q1: Technical ability to run companies

Q1: Technical skills

Q1: Transformation flaw

Q1: White Elephants

Q2: Local job creation

Q2: A role in correcting inequality

Q2: Barrier access to equipment, finance, information and skills

Q2: Barrier Company size

Q2: Barrier corruption

Q2: Barrier instant gratification

Q2: Barrier investment is capital investment

Q2: Barrier non conducive environment

Q2: Barrier payment delays

Q2: Barrier procurement

Q2: Barrier regulatory framework

Q2: Barrier SME incapacity

Q2: Building infrastructure

Q2: Contribution to job creation

Q2: Contribution to society

Q2: Decision making

Q2: Deliver quality work

Q2: Double ability to create jobs

Q2: drive market price down

Q2: Economic rescue

Q2: Enabler Entrepreneurial spirit

Q2: Enabler funding assistance

Q2: Enabler Government economic turnaround strategy

Q2: Enabler innovation

Q2: Enabler R&D investment

Q2: Enabler regulation PPPFA

Q2: Huge role

Q2: Innovation

Q2: Job creation for graduates

Q2: Job creation for unskilled labour

Q2: No enabler identified

Q2: No job in the economy

Q2: Non-conducive environment

Q2: Regulation enforcement

Q2: Skills transfer

Q2: SME huge role

Q2: SME Inability to compete

Q2: SME lack of growth

Q2: SME self-sustainable

Q2: SME type

Q2: SME value add not proven in SA

Q2: Wealth Creation

Q3: Back up SMEs

Q3 Community responsibility

Q3: Collaborative effort

Q3: consultant's responsibility

Q3: Contractor's role

Q3: Consultant's role

Q3: Develop a data base

Q3: Enabler SME background and knowledge

Q3: Enhance government role

Q3: Fuel SME Role

Q3: Government monitoring

Q3: Guard against sector infiltration

Q3: Guided approach

Q3: Innovation

Q3: Mentorship

Q3: Procure SMEs first

Q3: project pipeline

Q3: Public private collaboration

Q3: Raise awareness

Q3: Regulation

Q3: Skills pipeline

Q3: SME Challenges

Q3: SME defined growth paths

Q3: SME partnership

Q3: SME set asides

Q3: SME supplier guarantees

Q3: Stakeholder's role

Q3: Supplier development

Q3: Sureties

Q3: Training

Q3: Unsolicited bid

Code Groups

Q1: Apartheid legacy

Q1: Community disruptions

Q1: Corruption

Q1: Economic stagnation
Q1: Financial challenges
Q1: Government systematic failures
Q1: SME incapacity
Q1: Technical skills shortage
Q2: Barriers
Q2: Enablers
Q2: Gaps in SME contribution
Q2: Impact of SME contribution
Q3: Community role
Q3: Contractor's role
Q3: Engineering consultant's role
Q3: Public sector role
Q3: SME's role