

The effects of preferential procurement on supply chain performance in Gauteng government departments

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Abstract

The aim of this study was to determine the effect of preferential procurement on supply chain performance in Gauteng government departments. The topic public procurement has gained a lot of attention in the previous two decades in both academia and government spheres. This emanates from the introduction of the Preferential Procurement Policy Framework Act No. 5 of 2000 (PPPFA), which was introduced with the intention of promoting the previously disadvantaged groups in the economy; however, the system has proved not to be as effective as was intended. The objective of the study was to identify the effects of preferential procurement on supply chain performance and to determine the influence of management levels on the implementation process. The findings of the study revealed that supply chain performance was indeed affected by the implementation approach across the various government departments, and that a gap still existed between policies and implementation and that most SCM officials had not fully grasped the implementation requirements of the PPPFA. Although challenges were noted in the implementation process, it can be concluded that preferential procurement was generally functioning well across the selected departments. It is recommended that the implementation criteria of the PPPFA are revisited to ensure that they are understood across all levels of management.

Keywords: Preferential procurement, Supply chain performance, public procurement, BBBEE, PFMA.

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Chapter 1: Introduction

This chapter provides background to the study, which includes the research aims and objectives and a problem statement. The last part of the chapter will focus on the study's research methodology, design, and ethical considerations.

1.1 Background to the study

The study's purpose was to determine the effect of preferential procurement on supply chain performance in Gauteng government departments. Preferential procurement is a practice derived from the Preferential Procurement Policy Framework Act No 5 of 2000 (PPPFA), which was introduced by the South African government with the intention of promoting previously disadvantaged groups in the economy (Selomo & Govender, 2016). The aim was to provide opportunities to historically disadvantaged individuals who did not have equal opportunities in the procurement system because of the apartheid regime (Hlakudi, 2015).

The supply chain management (SCM) function operates within a regulatory framework set by the national government and passed over to local and provincial bodies (Public sector supply management review, 2015). Prior to 1994, opportunities were given to established contractors, a designated minority of the population, and this discriminated against the disadvantaged majority who could not match those requirements (Ambe & Badenhorst-Weiss, 2012).

The PPPFA was then introduced to ameliorate the inequalities that were inherited from the apartheid regime and to provide equal opportunities to the previously disadvantaged black owned South African businesses in the procurement process (Hlakudi, 2015). This principle was adopted from affirmative action, a system that consists of special efforts by employers to increase employment and promotion opportunities for groups that have suffered past discrimination and continued to suffer in that manner. This is reinforced in the Constitution of the Republic of South Africa, (1996), which encourages the local government to promote the advancement of individuals who were previously disadvantaged when issuing procurement contracts.

The source of legislation that regulates public procurement in South Africa is the Public Finance Management Act No 1 of 1999 (PFMA), which sets out the procedures for efficient and effective management of finances in the public sector (Munzhedzi, 2016). Government departments are compelled to comply with the PFMA as non-compliance could lead to expenditure being reported as unauthorised, fruitless and wasteful, or irregular by the Auditor-General.

According to Ambe and Ngcamphalala (2016), procurement was an independent function across all provinces. However, there were inconsistencies identified by the National Treasury, which is the custodian of the supply chain regulations and issues all instructions pertaining to SCM in the application of the PFMA and PPPFA in turn. This led to the introduction of the SCM framework aimed at reinforcing uniformity in the procurement divisions. In light of the above regulations, the procurement process follows set processes.

The study highlighted the effects of one of these regulations, the preferential procurement policy in particular, as prescribed by the PPPFA. This study also highlights the effects thereof on supply chain performance.

Until March 2020, government contracts were a big source of income for black-owned businesses under the Broad-Based Black Economic Empowerment (BBBEE) regime (Media Statements, 2020). However, this took a knock when the globe was hit by the Covid-19 pandemic, which saw almost all businesses closed for at least three months. The South African government had worked hard, attempting to build black-owned businesses in an effort to reverse the effects of the apartheid regime on the economy. The strides that had been covered in the last twenty years towards growing the economy were strongly affected by the impact of the Covid-19 pandemic. Considering the fragile nature of black-owned businesses, it would take time for black-owned firms to recover due to unstable financial reserves (The DTIC, media statements, 2020).

The Covid -19 pandemic had a financial impact on the suppliers, and as such puts the government departments at risk as they were dependent on suppliers to deliver. An inability to deliver for contracted services would have an impact on supply chain performance.

- No performance bonuses due to projects not being regarded as essential services.
- Yearly targets are not met due to projects being put on hold.
- Bids were not advertised as per the supply chain regulation requirements.
- Services were not contracted because of Covid-19. Failure to procure goods and services delays service delivery leading to departments failing to meet their targets.
- Budgets were redirected from other projects to personal protective equipment to combat the spread of Covid-19.

The impact of the Covid-19 pandemic contributed to the challenges faced by government departments in attaining their supply chain performance objectives. Although the Covid-19 pandemic was not the focus of the study, it was important to highlight its effects briefly to indicate how unforeseen events could negatively affect supply chain performance. With that being said, the study, through an extensive literature review and quantitative research, looked at the effects of preferential procurement to determine how it affected supply chain performance.

To achieve the objectives of the study, the focus was placed on previous PPPFA studies to identify implementation challenges faced by government departments and how they affected supply chain performance. The chapter introduced the research methodology on how the researcher intended to collect and analyse the data and concluded with a summary of the effect of preferential procurement on supply chain performance in Gauteng government departments.

1.2 Problem statement

Government departments have seen negative results in supply chain performance over the years, some of which can be traced to preferential procurement (Selomo & Govender, 2016). Although preferential procurement was a corrective measure for a system that previously favoured a few minorities, the system has been abused and manipulated by officials who seek self-interest (Hlakudi, 2015). As per the findings of the Auditor-General South Africa (AGSA) for the 2018 financial year-end, irregular

expenditure increased from 72 percent to 81 percent due to the abuse of the supply chain management systems (Auditor-General South Africa Consolidated General Report, 2018).

Ambe and Maleka (2016) indicated that poor implementation of supply chain policies was the root cause of service delivery problems, which translated to supply chain performance in South Africa. This links to ineffective procurement processes associated with the implementation of the Preferential Procurement Act. According to Agyepong and Nhamo (2015), there is still a gap between policies and implementation, which implies that policies are either incorrectly applied or misunderstood altogether. The study, therefore, intends to highlight how the implementation of the Preferential Procurement Act can affect supply chain performance in government departments. The questions below will guide the study:

- What are the levels of preferential procurement and supply chain performance within the organisation?
- How does preferential procurement affect supply chain performance in government departments?
- How do management levels impact preferential procurement and supply chain performance?

1.3 Research aim and objectives

1.3.1 Research aim

The aim of the study was to determine the effects of preferential procurement on supply chain performance within Gauteng government departments.

1.3.2 Research objectives

The following were the objectives of the study:

- To obtain management views on preferential procurement and supply chain performance in the implementation of the Preferential Procurement Act in order to make recommendations on how to effectively apply the Act.
- To determine the effect of management views on preferential procurement and supply chain performance

- To determine how levels of management influence preferential procurement and supply chain performance.

The theory obtained in the literature review was used to aid the answering of the research questions and the formulation of the hypothesis that was tested in the study.

1.3.3 Research Hypotheses

The following hypotheses were formulated for the study:

H1: Management at different levels understand preferential procurement differently.

H2: Management levels have an influence on the perception of employees on preferential procurement and supply chain performance.

1.4 Study design

A research design provides the structure that guides the use of a research method and the analysis of the subsequent data (Bryman *et al.*, 2014). It also provides a framework for the collection and analysis of data. The study followed a cross-sectional design approach where information was collected at a single point in time using questionnaires. The data was analysed using descriptive statistics and inferential statistics. Creswell (2014) referred to descriptive statistics as a method of describing data using statistical analysis such as standard deviation and a range of scores, while inferential statistics are when you use sample data to make conclusions or inferences about the underlying population (Sharma, 2017).

1.5 Research methodology

1.5.1 Study context

The study followed a quantitative approach using a cross-sectional approach, where data is collected at a single point in time.

1.5.2 Population and sampling

1.5.2.1 Population

The population, in this case, referred to the various government departments in Gauteng, as the study sought to analyse the effects of preferential procurement on supply chain performance in government departments. However, not all departments were used for the study. Departments were selected from the entire population based on their accessibility.

1.5.2.2.1 Sampling technique

The study followed a probability sampling approach, using a stratified random sampling method. According to Quinlan *et al.* (2019), probability sampling is a sampling procedure where all members of the population have a known, non-zero chance of being selected. Sharma (2017) refers to stratified random sampling as when the population is put into mutually exclusive strata. A random sample is taken from each stratum using simple random sampling.

Considering the time constraints of the study and the complex duties involved in the supply chain process, such as tender evaluations, and the impact of the Covid -19 pandemic, where people are taking turns going to work, a stratified random sampling approach was appropriate since it ensured that all levels of management were included. One of the advantages of the stratified random sampling method is that besides acquiring information for the whole population, one can make inferences within each stratum or compare the strata (Leedy & Ormrod ,2016).

1.5.2.2.2 Sampling size

There were approximately 180 people involved in the procurement process in the relevant departments. According to Krejcie and Morgan (1970), a population of 180 needs a sample size of 123. Questionnaires were sent to the departments with the expectation of a minimum of 123 responses.

The sample consisted of employees who worked in the supply chain department in Gauteng government departments. The sample further included government officials that were part of the bid evaluation committees, encompassing mainly senior

personnel who were expected to have extensive knowledge on how the supply chain processes worked. The sample further included procurement officials at all levels, from entry-level positions to senior management, to ensure that the study was not limited to a certain group.

Since the study was conducted in Gauteng and due to time constraints, four Departments were chosen for the study, as follows:

- Gauteng Department of Agriculture and Rural Development
- Gauteng Department of Education
- Gauteng Department of Economic Development
- Gauteng Department of Sports, Art, and Culture

These four departments were chosen as they were in the same vicinity. Therefore, it was easy for the researcher to contact them to request permission to conduct the study.

1.6 Inclusion criteria

The sample included anyone who had supply chain experience at a lower, medium, or managerial position so that that sample was not biased towards a certain group only.

1.7 Exclusion criteria

The sample excluded those employees who do not have knowledge of the supply chain processes.

1.8 Recruitment of participants

Participants were selected based on their involvement in the supply chain process. The researcher had to enquire from each department how their structures were like as far as the involvement in procurement. After obtaining this knowledge, the participants were divided into groups based on their management level and selected from there. A request was sent to the departments for supply chain officials to partake in the study,

and participants were selected randomly in each stratum. The selected participants were required to sign a consent form as proof that they consented to partaking in the study.

1.8.1 Process of obtaining informed consent

A request was made to the heads of department at the chosen departments to conduct the study. All the participants who took part in the study signed a consent form confirming that they were not forced to partake in the study but did so out of their own will.

1.9 Data collection

Data were collected using questionnaires, which were accessed by the respondents on Google Forms, an electronic platform for administering surveys.

1.9.1 Data collection tool

Self-administered questionnaires were used to collect data, namely Google Forms. Questionnaires were created on Google Forms, and a link was sent to the respondents' email requiring them to complete the questionnaire. Respondents had to click on the link to access the questionnaire. The completed questionnaires were stored on Google Forms, and the researcher was able to access the responses from the platform. Self-administered questionnaires were considered quicker and cheaper to use. This is because they did not require the presence of the researcher, and respondents were able to complete them at a convenient time. The other advantage was that they eliminated the researcher's influence since she was not present when the respondents completed the questionnaires.

The questionnaire was made up of two sections, as follows: Section A focused on preferential procurement, and Section B focused on supply chain performance.

Responses in the questionnaire were in the form of a 5-point Likert scale (1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree), and respondents were required to indicate to what extent they agreed or disagreed with the questions

provided. This enabled the researcher to code the data easily by grouping similar responses. The questionnaire was tested in the form of a pilot study. The questionnaire was first tried on respondents who were not part of the study to determine if the information obtained answered the researcher's questions. Once a level of satisfaction was reached, the questionnaire was distributed to respondents for data collection.

1.9.2 Development of a data collection tool

Data was collected using questionnaires. The questionnaire was tested using a pilot study to highlight aspects that required improvement in the questionnaire. It was useful in determining if the respondents understood and were able to interpret the questions. Where issues were noted, the questionnaire was amended accordingly.

1.10 Rigour / Validity & reliability

To assess the rigour of the research design, the researcher conducted a pilot study. A pilot study is a trial stage of the proposed research design with the aim of perfecting the chosen methodology, according to Bryman *et al.*, (2014). This entailed distributing the trial questionnaire to assess if the responses received answered the research question as intended by the researcher. It was desirable to conduct a pilot study where self-administered questionnaires are used to ensure that the questionnaire functioned as intended. The researcher also tested the reliability of the questionnaire by using Cronbach's alpha test. This is a test that measures internal reliability by aggregating all similar responses to ensure that the responses obtained in the questionnaires are the intended responses. According to Chandak, Chandak and Delpati (2019), a Cronbach's alpha of more than .7 would indicate that data is consistent and reliable.

1.11 Ethical considerations

1.11.1 Permission and informed consent

Before the commencement of the study, the researcher obtained ethical clearance from the Ethics in Commerce Research committee at the North West University Business School. The researcher ensured that all participants were informed that their

participation was voluntary, and that they were allowed to withdraw at any time. Further, all participants would receive and sign an informed consent form.

Any perceived risk was managed to ensure that it was kept to a minimum, and confidentiality and anonymity were to be adhered to and respected. The researcher did not deviate from the approved proposal and would ensure that permission and approval were obtained should there be a need to deviate. The information would be kept safely by the researcher by ensuring that electrical gadgets are password-protected and always secured. Any matters that needed to be reported to the Ethics committee would be reported timeously. The researcher had a responsibility to respect the University's intellectual property and inform the Ethics committee in the event that the study was terminated.

1.11.2 Anonymity

Participants were not required to identify themselves on the questionnaires in any way.

1.11.3 Confidentiality

Information obtained was used solely for the purpose of this study. The researcher signed a confidentiality agreement with the selected government departments as a way of assuring that information obtained was not shared with third parties.

1.12 Conclusion

The purpose of the study was to determine the effects of preferential procurement on supply chain performance, with the objective of determining the challenges faced by government departments in the implementation of the Preferential Procurement Act. The study followed a quantitative approach using a cross-sectional design. Data were collected using self-administered questionnaires. Participants were selected using a probability sampling approach, particularly the stratified random sampling method. Data were analysed using the SPSS software version 26, using descriptive and inferential statistics. Ethical clearance was sought before conducting the study, and all information was obtained anonymously and kept confidential.

Chapter 2: Literature Review

2.1 Introduction

The objective of this chapter was to provide a literature review on preferential procurement and supply chain performance. It looked at the history of preferential procurement and how it linked to supply chain performance. The chapter was guided by a theoretical framework, which when combined with the literature review, led to the development of a hypothesis. It begins by explaining the background of preferential procurement, its implementation, and the challenges associated with the implementation of the PPPFA. It concludes by highlighting how preferential procurement affects supply chain performance in government departments.

2.2 Procurement modalities

A modality is defined as the way or mode in which something exists or is done (Vocabulary.com Dictionary, 2020). In this regard, procurement modalities will discuss how procurement is done at a global and domestic level.

2.2.1. Global procurement perspectives

Public procurement constitutes a major component of public spending and has a significant impact on demand for any economy. According to the Secretary-General of the Organisation for Economic Co-operation and Development (OECD), public procurement is regarded as a major part of the economy and public spending and a key indicator of government efficiency (Fourie & Malan, 2020).

In research conducted by Cernat and Kutlina-Dimitrova (2015) on international procurement, it was noted that procurement spending accounted for one-third of government expenditure in OECD countries. The study further revealed that in 2013, government spending measured by the Gross Domestic Product (GDP) amounted to about 14% in the European Union and just above 10% in the United States. However, these national accounts' actual spending would be higher when public utility providers (municipalities) were also taken into account.

Although public procurement is seen as a tool that benefits the domestic market, Cernat and Kutlina-Dimitrova (2015) further indicate that the preference for domestic producers

creates inefficiencies in the procurement process which can significantly distort trade flows and international specialisation, predominantly in sectors categorised by a large share of public spending. Furthermore, domestic preferences in public procurement may limit the outsourcing capabilities of international procurement, affecting production decisions along global value chains.

Fourie and Malan (2020) indicated that public procurement is coupled with the government's responsibility to provide goods and services for public use at a local, regional, and national level. This is further reinforced by the World Bank's view of procurement, which regards it as a strategic development instrument aimed at promoting good governance and effective and efficient use of public resources.

A follow-up study conducted by Cernat and Kutlina-Dimitrova (2016) indicated the importance of considering the awarding of public procurement contracts to international companies and summarises these modalities into three aspects, as shown below.

- Modality 1 - Direct cross-border international procurement refers to the bidding of a local tender by a foreign company. This company will submit a bid to compete with local firms. If the bid is successful, the tender will be awarded to the international company.
- Modality 2 - Commercial presence procurement: This entails the bidding for a tender by a locally-based company which is a subsidiary of a foreign company.
- Modality 3 - Value-added indirect international procurement: In this category, the foreign company does not bid directly but supplies the winning local company with goods and components that are needed by the winning company.

From these three modalities, Messerlin (2016) considered Modality 2 and 3 as the most important, while Modality 1 was considered less important in terms of economic significance. Cernat and Kutlina-Dimitrova (2016) concluded that the absence of procurement comparison data on the international dimension hindered a comprehensive global comparison.

2.2.2 South African perspective

Public procurement plays a significant role in the economy and public expenditure of any country and can be viewed as an important indicator of the efficiency of

government spending, as it forms a key part of public service delivery. The procurement function in the public sector works as a business function of the economic activity that operates within a political system (Fourie & Malan, 2020). Despite all the efforts that have been made by the South African government in its procurement reforms, the South African public procurement process is still faced with major procurement challenges and has been criticised for its weaknesses in the procurement function (Fourie & Malan, 2020).

As per Anthony (2019), public procurement in the past two decades has been a topic that has received a lot of attention in both academia and government spheres. This follows the introduction of the Public Finance Management Act (PFMA) No. 1 of 1999, and the adoption of the Preferential Procurement Policy Framework Act (PPPFA) No. 5 of 2000 (Hlakudi, 2015). The objective of these acts was to support procurement reforms directed at the promotion of good governance and to address socio-economic objectives by giving preference to black suppliers in the allocation of government contracts and preventing the unfair discrimination which was associated with the previous apartheid regime (Selomo & Govender, 2016).

The previous apartheid system imposed discriminatory practices on a greater majority of the population and prevented access to fair opportunities due to government contracts being awarded to only established contractors who comprised a minority of the South African population (Shai, Molefinyana & Quinot; 2019). This led to procurement reforms, which are also enforced in the Constitution of the Republic of South Africa, Act 108 of 1996, that encourage organs of state to promote the advancement of individuals who were previously disadvantaged by the apartheid system in the issuing of government contracts (Constitution of the Republic of South Africa, 1996). The Constitution of the Republic, published in 1996, acts as the primary source for legislation and policies that govern the country's black economic empowerment (Shai *et al.*, 2019).

In addition to redressing the socio-economic gap, the Department of Public Enterprises, through public procurement, aims to advance the re-industrialisation of the South African economy by evaluating the current procurement legislation framework and its impact on localisation (Fourie & Malan, 2020).

This is further aligned to the National Development Plan (NDP) 2030, which aims to eradicate poverty, amongst other objectives. Below is an extract of one of the goals from the National Development Plan 2030 that relates to procurement.

The National Development Plan 2030 (National Planning Commission). The National Development Plan (NDP) is the underpinning South African public strategic framework for growth and development, as developed in 2012 by the National Planning Commission. The NDP encapsulates the long-term vision of the South African government towards establishing and sustaining an equitable society.

Although preferential procurement was introduced as a strategic tool to address inequalities of the past, Munzhedzi (2016) revealed that there were quandaries in the public procurement practices, which included non-compliance to the PPPFA, tender irregularities, as well as negligence on the part of public servants in applying the PPPFA within the public sector. Hlakudi (2015) alluded to this by stating that the challenges in the implementation of the preferential policy included, amongst other things, non-compliance to the procurement system, limited knowledge of the preferential procurement targets, as well as fraud and corruption.

This was further revealed in the report of the Auditor-General published in 2018, which stated that there was a lot of non-compliance in supply chain management, “uncompetitive and unfair procurement processes and inadequate contract management were common.” Serious weaknesses were identified in projects that were delayed, of poor quality, and presented waste and mismanagement of resources (Auditor-General Media release, 2018).

An in-depth understanding was obtained through a literature review of how preferential procurement in government departments was conducted in order to answer the research questions. Ambe and Maleka (2016) indicated that poor implementation of supply chain policies is the root cause of service delivery problems, which translate to supply chain performance. According to Agyepong and Nhamo (2015), a gap still

existed between policies and implementation, implying that policies were either incorrectly applied or misunderstood altogether.

In March 2020, the South African president declared a full lockdown for a period of 21 days in response to the global COVID-19 pandemic (Eyewitness News, 2020). Alongside the lockdown, the public sectors regarded as essential services continued with normal operations, including procurement activities that were targeted at combatting the pandemic, amongst other things through the procurement of essential personal protective equipment (Fourie & Malan, 2020).

Prior to the commencement of the COVID-19 pandemic, the South African government was already facing numerous development challenges, including a strain on public procurement.

2.3 Theoretical Framework

A theoretical framework is a combination of concepts, definitions, and existing theories that support a particular study. The role of a theoretical framework is to demonstrate an understanding of the underlying theories and concepts relevant to a specific subject and relate to broader fields of knowledge in that subject (Trochim, 2010). The purpose of the theoretical framework is to strengthen the study in any of the following ways:

- By allowing the reader to explicitly evaluate and critique statements.
- The availability of a relevant theory connects the researcher to existing knowledge and guides the formulation of a hypothesis.
- The articulation of theoretical assumptions guides the answering of the “why and how” questions.
- A theory assists in identifying the limits to generalisations by specifying key variables that influence a phenomenon of interest.

Grant and Osanloo (2014) describe a theoretical framework as a blueprint that serves as a guide on which to build or support the study. According to Shai *et al.* (2019), one of the theories that provide justification for the PPPFA is the organisational theory. Organisational theory is deemed to provide explanations and predictability of the social phenomenon occurring within organisations and focuses on the need for the creation

of diverse organisational theories in order to respond to the diverse changes within organisations (Christensen, Lægreid & Rovik, 2020).

Andrews (2008) indicated that the organisational theory contends that structures and networks that are established within organisations decide who gets to participate in the economy, as is the case with preferential procurement, which benefits some groups over others. Therefore, this theory supports the socio-economic objectives of the PPPFA, which aims to provide opportunities to previously disadvantaged groups. Grant and Osanloo (2014) further indicated that a theoretical framework could be used as a guide to determine if the research questions have been addressed and could serve as a map to the literature review.

2. 4 Public Procurement

Procurement, as defined by Hlakudi (2015), is a process that generates, manages, and accomplishes contracts concerning the provision of supplies, services, or engineering and construction works. Public procurement is the purchasing of goods and services that the government needs from the private sector (Mantzaris, 2014).

The role of public sector procurement as prescribed by Section 38(1) (a) (iii) of the Public Finance Management Act (PFMA), is to acquire goods and services for public use in accordance with a system which is fair, equitable, transparent, competitive and cost-effective (Shai *et al.* 2019). Public procurement is identified as key in enhancing economic activities as it plays a role in bridging the gap created by the apartheid dispensation (Fourie & Mazibuko, 2019) by ensuring that service delivery is done in a timely manner and that the correct goods and services are procured for public use.

Ambe and Maleka (2016) regard the procurement function in government departments as a critical socio-economic function, which is viewed by the National Treasury as the government's commitment to the well-being of South Africans and also as contributing towards the economic growth of the country.

Furthermore, the procurement function contributes a greater portion to any organisation's expenses, and it is therefore regarded as a crucial activity in government as it is a means of efficiently meeting the needs of the public, as it is

financed by the taxpayers' money. Therefore, proper functioning and regulation of this system are essential (Ambe & Maleka, 2016).

Mantzaris (2014) refers to the different categories of procurement. The first category is the procurement of goods through quotations, where departments do not need to invite tenders for purchases below a stipulated amount as prescribed in the regulation; usually applicable to day-to-day purchases. The other category is competitive bidding, also known as the tender process, which refers to a process where government departments invite offers for the supply of goods and services, and the best offer (according to the predetermined criteria) will be accepted.

In South Africa, procurement was an independent function across all provinces until National Treasury intervened due to the inconsistencies in practices that were adopted by the various provinces. It was against this background that the SCM framework, which is guided by the Public Finance Management Act - aimed at reinforcing uniformity in the procurement divisions - was introduced, setting regulations and processes to be followed in the procurement process (Ambe & Ngcamphalala, 2016). Meyer and Auriacombe (2020) also criticised a centralised governance system, regarding it as a system characterised by inherent negative effects which could hinder service delivery.

2.5 The Public Finance Management Act

This Act governs all public financial management practices in South Africa by providing a regulatory framework for national and provincial supply chain management, as well as for state-owned enterprises. The PFMA rests on five Constitutional pillars outlined in the Constitution of the Republic, which defines the features of an effective procurement system as "fair, equitable, transparent, competitive and cost-effective" (Hlakudi, 2015).

Fourie and Malan (2020) indicate how the collapse of any of the following five pillars would compromise the entire procurement process. These Five Pillars, as per the National Procurement guidelines (2014), are the following:

- **Value for Money.** This discourages the use of price as the only indicator to determine value for money, as value for money could be best determined by

incorporating all the applicable costs and benefits over the procurement cycle and taking them into consideration.

- **Open and Effective Competition.** This entails the availability of transparent information to all parties that tender so that they can compete openly and fairly.
- **Ethics and Fair Dealing.** This fosters ethical standards for all parties, based on mutual respect and trust. Business should be conducted in a reasonable and rational manner with integrity.
- **Accountability and Reporting.** This holds individuals and organisations accountable for their actions and outcomes, through openness and transparency in administration, which is achieved through external scrutiny of public reporting.
- **Equity.** This is important in public sector procurement to guarantee commitment to economic growth by implementing specific industry support measures with an emphasis on the accelerated growth of small and medium businesses and historically disadvantaged individuals, which is the focus of this study.

2.6 Preferential Procurement Policy Framework Act

The PPPFA establishes the manner in which preferential procurement policies are to be implemented (Munzhedzi, 2016). According to Shai *et al.* (2019), this was the first Act that was introduced under the custodianship of the National Treasury as a legislative response to the constitutional mandate for a procurement intervention. Each organ of the state was required to determine its preferential procurement point system. Under this system, government entities conducting a tender process are required to evaluate tender submission documents according to specific prescribed criteria as prescribed by the Act.

The preferential procurement uses a point system in awarding government contracts or tenders, with points being awarded for the price as well as Broad-Based Black Economic Empowerment (BBBEE) (Hlakudi, 2015). This is based on the bidders' BBBEE status level, which is determined in terms of a code of good practice issued in terms of Section 9 (1) of the Broad-Based Black Economic Empowerment Act 53 of 2003 (Quinot, 2018). Hlakudi (2015) identified some challenges in the implementation

of preferential procurement, together with inconsistencies between the PPPFA and the BBBBE Act.

2.7 Framework for implementation of preferential procurement policy

The Framework below provides for the implementation of the Act as extracted from the PPPF Act (National Treasury 2011).

(1) An organ of state must determine its preferential procurement policy and implement it within the following framework:

(a) A preference point system must be followed;

(b) (i) for contracts with a Rand value above a prescribed amount, a maximum of 10 points may be allocated for specific goals as contemplated in paragraph (d) provided that the lowest acceptable tender scores 90 points for the price;

(ii) for contracts with a Rand value equal to or below a prescribed amount, a maximum of 20 points may be allocated for specific goals as contemplated in paragraph (d) provided that the lowest acceptable tender scores 80 points for the price;

(c) any other acceptable tenders which are higher in price must score fewer points, on a pro-rata basis, calculated on their tender prices in relation to the lowest acceptable tender, in accordance with a prescribed formula;

(d) the specific goals may include (i) Contracting with persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of race, gender, or disability;

(ii) Implementing the programmes of the Reconstruction and Development Programme as published in Government Gazette No. 16085 dated 23 November 1994;

(e) Any specific goal for which a point may be awarded must be clearly specified in the invitation to submit a tender;

(f) The contract must be awarded to the tenderer who scores the highest points unless objective criteria in addition to those contemplated in paragraphs (d) and (e) justify the award to another tenderer; and

(g) Any contract awarded on account of false information furnished by the tenderer in order to secure preference in terms of this Act may be cancelled at the sole discretion of the organ of state without prejudice to any other remedies the organ of state may have.

(2) Any goals contemplated in subsection (1) (e) must be measurable, quantifiable, and monitored for compliance.

2.8 Challenges associated with the PPPFA

Although the Act exists as a guide for supply chain officials, organs of the state are still facing a huge challenge in the implementation of the PPPFA. Selomo and Govender (2016) found that supply chain management in various government departments experiences obstacles during the implementation of supply chain management processes. Fourie and Mazibuko (2019) noted unfair procurement practices in cases where preferential points were not applied, or incorrect preferential point systems and thresholds were applied.

Although there is legislation that guides the ethical conduct with regard to procurement, corruption is one of the major threats affecting public procurement (Fourie, 2015). Munzhedzi (2016) identified negligence by public servants as having created loopholes in the implementation of the policy. Hlakudi (2015) indicated that most companies engaging with the government do so fraudulently by claiming preferential points they do not deserve. In addition to this, it was evident that the majority of the government officials within the government departments were not familiar with the preferential procurement targets. Shai *et al.* (2019) noted that, although processes of public procurement have improved over time, there was still a gap with respect to monitoring and evaluation of BBBEE.

Adediran and Windapo (2016), in their study, referred to the adoption of preferential procurement policies as a vehicle for contractor development, as targeted procurement. Their study further revealed that the application of targeted procurement

practices increased the participation of Small and Medium Enterprises (SMEs) in government contracts and improved their chances of winning government tenders and promoting the previously disadvantaged groups. However, in their follow-up study, they noted how target procurement strategies, such as preferential procurement, are implemented by government clients to the detriment of suppliers, (Adediran & Windapo, 2017). Further, opportunities are not equally distributed, as some groups are favoured over others, as mentioned by Van Rensburg, McConnell and Brue (2015) and that preferential treatment and discrimination are two sides of the same coin, as favouring one party discriminates against the other.

A study conducted by Selomo and Govender (2016) in the Limpopo province revealed that SCM performance in government departments was effective, although departments experienced challenges in the implementation of processes and procedures. Bolton (2016) noted the weaknesses in the wording of the PPPFA; particular reference was given to Section 2(1) (d), which makes use of the word “may” as opposed to “must”, leaving the final decision at the discretion of those who implement the policy.

The PPPFA was revised in 2011 and 2017, with the 2017 regulations being the latest. Section 2 of the PPPFA prescribes for the use of an 80/20 or 90/10 rule, where a fixed percentage of the adjudication criteria is allocated either 10 or 20%, depending on the value of the contract, with higher value contracts being awarded 20%, and lower value contracts being awarded 10%. The other 80% or 90% would be awarded for the price (Quinot, 2018).

The figure and table below, as adapted from the DTI (2017) Framework for PPPFA, show how the points should be allocated for price using the 80/20 preference point system. This is applicable for all tenders with a value ranging between R30 000 and R50 million.

Preferential procurement 80/20 equation

$$P_s = 80(1 - (P_t - P_{min}) / P_{min})$$

Where,

P_s = Points scored for the price of tender under consideration

P_t = Price of tender under consideration; and

P_{min} = Price for the lowest acceptable tender

The preferential procurement points awarded for BBBEE are awarded as shown in the table below:

Table 1: Preferential procurement points awarded on BEE level

BBBEE Level	Number of points
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-Compliant	0

Quinot (2018) further states that, in terms of the regulations, the departments rely on the information that is provided by the bidders and contained in the National Central Database (a database where all suppliers wishing to do business with the government should be registered.) All documents submitted by bidders should be accepted as correct, and as long as all the required information is provided, this should be viewed as sufficient to make a decision based on the selection criteria.

The 2017 regulations introduced two further mechanisms, which are the prequalification and subcontracting criteria. As noted by Anthony (2019), regulation 9 of the 2017 regulations requires suppliers to subcontract a minimum of 30% for

tenders with a value above R30 million if it is feasible to do so; however, the regulations do not define “feasibility,” making it difficult for those implementing the Act.

Quinot (2018) also noted another weakness in that the 2017 regulations require the price of the bidder scoring the highest price to be market-related; however, the regulations do not define “market-related price.” Further, the market price requirement is not in line with Section 2 (1) (f) of the Act, which requires the contract to be awarded to the bidder scoring the highest points, causing confusion for those who have to implement the Act. Quinot (2018) concludes by suggesting that the 2017 regulations are still a work in progress as they provide no clarity on the market-related price as well as the feasibility of subcontracting.

2.9 Supply chain performance

Supply chain performance has become a critical issue in today’s competitive business environment across many industries as it is regarded as a key element for the measurement of effective supply chain management, and this has led to the development of several systems and frameworks as monitoring tools (Balfaqih *et al.*, 2016). It is imperative for businesses to assess their supply chain management performance in order to determine the effectiveness and efficiency of their operations (Chandak *et al.*, 2019).

As defined by Mhelembe and Mafini (2019), supply chain performance refers to a monitoring process undertaken by an organisation to determine whether the prescribed processes of a supply chain have been followed and whether the desired objectives have been achieved. It measures the effectiveness of the supply chain system, and it is essential that an organisation has metrics in place to measure this performance (Rana & Sharma, 2019).

As organisations seek to achieve strategic competitiveness over their rivals through proper implementation of supply chain practices (Chandak *et al.*, 2019), it is crucial that organisations measure their supply chain performance, as the success of the organisations largely depends on the supply chain performance, and improvements in overall supply chain performance could lead to better overall organisational performance (Hove-Sibanda & Pooe, 2018).

Rana and Sharma (2019), in their study, found that performance measurement in the supply chain was still an open area for research. Although there are measures in place, the focus is largely on financial measures, neglecting non-financial measures such as quality and delivery of service.

Supply chain management in the public sector is one of the most topical issues due to its role in the public sector of fulfilling the socio-economic objectives of the government (Mhelembe & Mafini 2019). Further, it was projected by the National Treasury in 2016 that the government spending on procurement would be estimated at R1.5 trillion between 2016 and 2019. Munzhedzi (2016) highlighted the volatile and unstable environment in which South African government departments operate and how they limit supply chain performance.

Fourie and Mazibuko (2019) were of the opinion that unethical conduct in the public sector was the cause of declining performance and the rise in fruitless and wasteful expenditure. Mhelembe and Mafini (2019) further noted that the public sector was faced with ineffective monitoring and evaluation and a lack of compliance with procurement policies, resulting in a loss of trust in the systems by the public.

It is crucial to align procurement plans with the objectives of an institution. Fourie and Malan (2020) indicated that most government institutions had poor strategic and annual performance plans that were not aligned to the mandate of the public sector, resulting in compromised procurement planning and implementation. This poor planning ultimately results in poor service delivery as supply chains fail to meet their performance objectives.

The public sector spends a lot of money on payments to suppliers who provide numerous goods and services (Scott, 2016). Since public procurement is governed by PFMA and PPPFA, preference should be given to black contractors in the allocation of contracts. In that regard, the law permits service providers who do not qualify for preferential points to partner with qualifying providers (Smit, 2015). Although this is aimed at providing fairness and balance in the selection of service providers, it raises many risks in the SCM processes, which include, amongst other things, inconsistencies in the application of the SCM policies (Mhelembe & Mafini, 2019).

According to the National Treasury public sector review (2015), procurement in the public sector was not always conducted in line with legislation as required by the Constitution of the Republic, which emphasises transparency, openness, and fairness in public procurement.

Fourie and Malan (2020) identified that the evaluation process of tenders was not open to scrutiny and that there were weaknesses in the reporting of progress and implementation reports to the general public. The severe dilemma faced by the public sector is the inability to complete a project by its scheduled date, despite all the initiatives by the government to improve performance. Out of the performance objectives, only a few positive outcomes are achieved due to inappropriate implementation plans and poor contemporary approaches (Riazi & Nawi, 2018).

2.10. Conclusion

This chapter highlighted the effect of preferential procurement on supply chain performance by indicating the challenges associated with the implementation of preferential procurement in the public sector. It is evident from the above discussion that a gap still exists between policies and implementation and that most SCM officials have not fully grasped the implementation requirements of the PPPFA. The clarity of the regulations is still questionable, resulting in challenges for those assigned with implementation roles. This was seen in the updates of the PPPFA that came with the 2017 regulations, which contained terms that are not fully explained. It further highlighted the need for supply chain performance to be measured in the public sector as the sector consists of a large portion of government spending. It was evident that there are still challenges in the implementation of the PPPFA, which impact supply chain performance. The following chapter will discuss the research methodology adopted by the study.

Chapter 3: Research Methodology

3.1 Chapter overview

The purpose of this chapter is to discuss the methodology used in the study. The chapter takes an extensive look at the population, sampling methods, data collection, and analysis involved in this study. The research design will be evaluated against the research questions to ensure that the design is appropriate to answer the questions pertaining to the study. The chapter will further provide justifications on the selection of the methodology as well as consideration of ethical issues pertaining to the study.

3.2 Introduction

A detailed literature review was provided in Chapter 2, which indicated that there is still a gap in the implementation of the PPPFA, which in turn affects supply chain performance. This chapter will look at the research methods and design in detail, as well as analysing the process that was followed in the collection and analysis of data to ensure that the design chosen was appropriate for answering the research questions. The study followed a quantitative research design using a cross-sectional approach and descriptive statistical techniques for analysing the data.

The following research questions guided the study:

- What are the levels of preferential procurement and supply chain performance within the organisation?
- How does preferential procurement affect supply chain performance in government departments?
- How does management level impact preferential procurement and supply chain performance?

3.3 Research methodology

A research methodology is defined as a general approach taken by a researcher in carrying out a particular research project, and this approach dictates the tool selected by the researcher (Leedy & Ormrod, 2015). Choosing a suitable research methodology is a crucial decision in performing effective research and is based primarily on linking the particular research objectives to the characteristics of the available research

methodologies (Basias & Pollalis, 2018). The purpose of the study was to understand the implementation challenges of preferential procurement in selected government departments, and this was achieved by collecting data that answered the research questions. The research methodology will be broken down further into a research design, which will be discussed below.

3.3.1 Research design

Research designs are types of inquiry within qualitative, quantitative, and mixed methods approaches that provide a specific direction for procedures in a research study (Creswell, 2014:295). The overall research design and specific research methods are planned in a purposeful way so that the researcher can acquire data relevant to their particular research problem (Leedy & Ormrod, 2015:23).

According to Bryman *et al.* (2014:100), the choice of a research design reflects decisions about the various dimensions of the research process, including the causal connections between variables. This follows a positivist philosophy, which Bryman *et al.* (2014:106) describe as “an approach that advocates applying natural science methods to study and understand social methods.” This means that the variables involved should be measurable in order to apply statistical analysis in determining the relationships between these variables.

In this case, the research design showed how the PPPFA procurement, which is one variable, affects supply chain performance, which is the other variable. The diagram below depicts how supply chain performance is affected by preferential procurement through supplier selection, as the PPPFA prescribes the requirements to be considered in the selection of the supplier. In turn, supply chain performance is a direct result of the supplier selection process as well as the performance of the selected supplier.

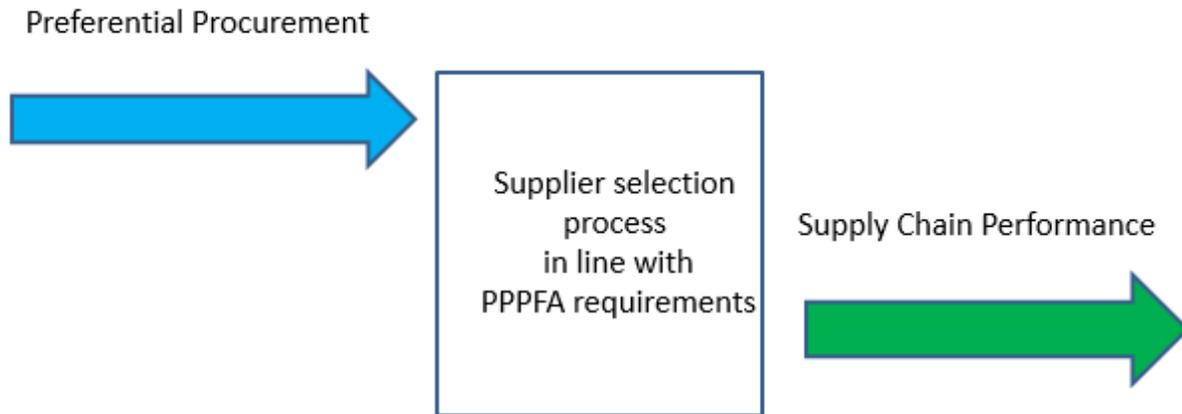


Figure 3.1: The relationship between preferential procurement and supply chain performance

The research questions guide the choice of the research approach. In doing that, the researcher has to differentiate between quantitative and qualitative approaches in order to answer the research questions. This study followed a cross-sectional quantitative approach, which describes a quantitative approach as one used for testing objective theories through examining relationships among variables (Creswell 2014:210). Bryman *et al.* (2014:105) define a cross-sectional design as an approach that involves the collection of data at a single point in time. This was the case with the study as the data was collected on a single occasion using questionnaires.

3.4 Population and Sampling

3.4.1 Population

The first stage in the sampling process is to clearly define the target population (Taherdoost, 2016:19). Population refers to the universe of units from which the sample is selected (Bryman *et al.*, 2014:170). The population of this study comprised government departments in Gauteng which are directly or indirectly involved in the procurement process. As the PPPFA is applied in the selection of suppliers in response to requests for quotations or tenders, the population included all the employees that are involved in the implementation of the PPPFA, either as requesters of goods or services, or evaluators of tenders and quotations in the selection of suppliers.

3.4.2 Unit of analysis

The unit of analysis refers to the specific item being studied. Leedy and Ormrod (2016) describes the unit of analysis as the phenomenon or the “what” of the study. The unit of analysis selected for this study was procurement officials who were employed in Gauteng government departments. Procurement officials referred to the staff working in the supply chain process as well as other personnel who were indirectly involved in the procurement process.

It was expected that this unit of analysis would have exposure to and adequate knowledge on issues that they had encountered and dealt with in the implementation of supply chain regulations. It included procurement officials across all levels, from low clerk positions up to executive management, to ensure that the study was not limited to a certain group.

3.4.3 Sampling

This study followed a probability sampling approach, using the stratified random sampling method, which is a type of sampling method where members of the target population are put into strata and are then randomly selected from each stratum for inclusion (Etikan, Musa & Alkassim; 2016:2). A probability sampling approach implies that each member of the population has an equal chance of being selected (Sharma, 2017). Considering the time constraints of the study and the complex duties involved in the supply chain process such as tender evaluations, and the impact of the Covid - 19 pandemic, where people are taking turns going to work; a stratified random sampling approach was appropriate since it ensured that all levels of management were included.

This meant that the principle of representativeness of the sample was applied, as the researcher intended to generalise the findings of the study if applicable to these government departments. The population was divided into four strata based on their managerial level, as shown below, and from there, a random sample was selected. The reason for dividing the population into strata was to reduce bias by ensuring that employees at all levels of the supply chain are covered.

Table 3.1 Characteristics of the chosen sample

Stratum	Characteristics
Stratum 1	Entry-level or clerical position
Stratum 2	Junior management
Stratum 3	Middle Management
Stratum 4	Senior Management

One of the advantages of the stratified random sampling method is that besides acquiring information for the whole population, one can make inferences within each stratum or compare the strata (Keller, 2018).

3.4.4 Sample size

Across the four government departments chosen for the study, there were approximately 180 people involved in the procurement process. According to Krejcie and Morgan (1970), a population of 180 needs a sample size of 123. Questionnaires were sent to the departments with the expectation of a minimum of 123 responses. This number was also influenced by the time limitations of the study. Further, the researcher had to take into account data analysis costs considering that this was a self-funded academic project, and costs were a major constraint.

Since the study was conducted within selected government departments in Gauteng, four departments were selected for the study, based on the accessibility and associated limited time constraints. The following is a list of the departments that were chosen for the study:

Table 3.2 Participants of the study

Name of Department	Number of participants
Gauteng Department of Agriculture and Rural Development	30
Gauteng Department of Education	31

Gauteng Department of Economic Development	31
Gauteng Department of Sports, Art, and Culture	31

3.4.5 Inclusion criteria

The sample included employees in the selected government departments who worked in the supply chain unit at lower, middle, or managerial positions respectively, so that the sample was not biased towards a certain group. These employees were selected as they were considered to be directly involved in the implementation of the PPPFA in their daily jobs and thus would possess the required knowledge which the researcher needed to obtain for the study.

3.4.6 Exclusion criteria

The sample excluded employees who did not work in the supply chain department as the assumption was that they would not have hands-on experience in the implementation of the PPPFA. A lack of this experience would have been detrimental to the study since the study focused on individuals who were involved in the PPPFA implementation process.

3.5 Data collection

Self-administered questionnaires were used to collect data. An email list of the selected respondents was obtained from the chosen government departments, and emails were sent to the respondents with a link to Google Forms, an online platform for administering questionnaires. Self-administered questionnaires were chosen as they were considered quicker and cheaper to use. The other advantage of self-administered questionnaires is that they eliminated the researcher's influence since the researcher was not present when the respondents completed the questionnaires. The disadvantage of this method, however, is that it does not allow for probing and sometimes limits the respondents from expressing their views.

3.5.1 Data collection tool design

The questionnaire contained closed-ended questions, which Bryman *et al.* (2014:199) describe as questions containing a fixed set of responses for the respondents' selection. The questionnaire was made up of two sections, with Section A focusing on preferential procurement, while Section B focused on supply chain performance. Responses in the questionnaire were in the form of a 5-point Likert scale, interpreted as follows: 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree.

Respondents were required to indicate to what extent they agreed or disagreed with the questions provided. This would enable the researcher to code the data easily by grouping similar responses.

3.6 Data analysis

Data that describes the sample was generated first. This was done in the form of categorical variables, where the sample was categorised according to management levels. This was done in order to understand each group that was involved in the study.

The data were analysed using descriptive and inferential statistics, which Creswell (2014:281) refers to as a method of describing data using statistical analysis such as standard deviation and a range of scores. The tool used to analyse the data was the SPSS software, Version 26. A descriptive analysis was provided for the respondents who were sampled to take part in the study. This was done to know and understand the standing of the groups on the various variables.

The data was separated between data pertaining to preferential procurement and data pertaining to supply chain performance. Under descriptive statistics, the following were applied:

- Frequency tables - These counted data belonging to each category and provided a percentage count for each type of variable.
- Measures of central tendencies - These summarised the distribution of values and included the mean, mode, and median. The mean indicates the average of all values, while the mode is the number that appears most often, and the median is the midpoint value. The data, which was coded in the form of the numbers for each option chosen by the respondent, were grouped and analysed in this manner.

- Standard deviation – This measures variability and shows how each observation deviates from the mean. The smaller the standard deviation, the closer the observations are, and the larger the standard deviation, the more the values deviate from the mean.

For inferential statistics, the researcher used Pearson's correlation coefficient to analyse the relationship between preferential procurement and supply chain performance, independent t-tests, ANOVA, and regression.

Inferential statistics were enlisted, namely t-tests and one-way analysis of variance (ANOVA). The independent t-test is an inferential statistical test, also called the two-sample t-test, which is used to determine if the difference between two unrelated groups is significant. The test is useful in the comparison of average values between two data sets to identify if the data comes from the same population (Kenton, 2020). The t-test was performed to assess the homogeneity of mean scores between data collected from the different departments, and this was done to determine if data could be pooled together or if data differed fundamentally on the different levels of the phenomena.

The correlation between preferential procurement and supply chain performance was calculated. The Pearson correlation epitomises the rapport between two variables that are measured using the same interval or scale of ratio. It measures the strength of the association between two continuous variables. This was done to ascertain if the variables relate in a meaningful manner (Kenton, 2020). A linear regression analysis was used to assess how a combination of variables relate. Linear regression is a linear approach to modelling the relationship between dependent and independent variables (Bryman *et al.*, 2014). This was done to ascertain if combining variables could predict the dependent variable in a meaningful manner.

3.7 Assessing and demonstrating the quality and rigour of the proposed research design

To assess the rigour of the research design, the researcher conducted a pilot study as a trial stage of the proposed research design, with the aim of perfecting the chosen methodology. This entailed distributing the proposed questionnaire using Google

Forms to respondents who were not part of the sample in order to assess if the responses received would answer the research questions as intended by the researcher. The reliability of the questionnaire was tested using Cronbach's alpha test, which Bryman *et al.* (2014:38) describe as a test that measures internal reliability by aggregating all similar responses to ensure that the responses obtained in the questionnaire are the intended responses.

Cronbach's alpha is frequently interpreted in terms of internal consistency or the extent to which items grouped together are indicators of the same variable of interest (Leppink & Pérez-Fuster, 2017). An alpha value that is very close to 1 may suggest that some items are redundant as they are testing the same question but in a different guise; thus, the recommended alpha value is .90. According to Kiliç (2016), internal reliability is considered to be good if the alpha value is found to be equal to or greater than .70, without disregarding the fact that the value could be low due to a low number of questions in the scale. The table below shows the different ranges of the alpha value and their interpretation in observing the extent of reliability of the instrument (Sharma, 2017).

Table 3.3 Internal consistency

Cronbach's alpha	Internal consistency
$\alpha \geq .9$	Excellent- researcher can consider data as very reliable
$.9 > \alpha \geq .8$	Good- researcher can consider data as reliable
$.8 > \alpha \geq .7$	Acceptable- the researcher can consider data as reliable
$.7 > \alpha \geq .6$	Questionable- the researcher should consider revising the research instrument.
$.6 > \alpha \geq .5$	Poor- the researcher can consider the data to be unreliable

.5 > α	Unacceptable- the researcher should not accept the data
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Source: Sharma, 2017.

3.8 Research ethics

According to Biggam (2011:249), research ethics refer to the application of a moral code of conduct when human participants are the focus of empirical research. Ethical clearance was obtained from the Ethics in Commerce Research committee of the North-West University. Permission letters were received from the government departments selected for the study before the study was conducted.

The researcher ensured that all participants were informed that their participation was voluntary and that they would be allowed to withdraw from the study at any point, and informed consent forms were signed by all participants before the commencement of the study. Confidentiality and anonymity were adhered to as respondents were not required to provide any form of identification. The researcher had a responsibility to inform the Ethics committee in the event that the proposed study was terminated or any conditions of the study were changed.

3.9 Conclusion

This chapter discussed the research methodology that was adopted by the study. It described the research design used in the study, namely a quantitative approach using a cross-sectional design. Data was collected using a probability sampling approach, using the stratified random sampling method. The reliability of the data instrument was tested using the Cronbach alpha test, and data were analysed using descriptive statistical analysis, using the SPSS software version 26. The following chapter will discuss the results and the findings of the study in detail.

Chapter 4: Presentation of Results

4.1 Chapter Overview

The previous chapter described the research methodology that was used in obtaining the data for the study. The purpose of this chapter is to report on the findings of the study after the collection of the data. The collected data was analysed using the SPSS software version 26. The paragraphs that follow below will describe the findings in detail.

4.2 Introduction

The purpose of this chapter is to present the empirical findings of the cross-sectional survey design articulated in the methodology chapter. The main objective of the study was to determine the effects of preferential procurement on supply chain performance in Gauteng government departments.

The objectives to be met were to identify the levels of preferential procurement and supply chain performance within the government departments in the implementation of the preferential procurement Act in order to make recommendations on how to apply the Act effectively, to identify the effects of preferential procurement on supply chain performance and to determine how levels of management influence preferential procurement and supply chain performance. The data were analysed using descriptive and inferential statistics.

The chapter starts by determining the response rate of the study, which is then followed by descriptive statistics of the social demographic characteristics. Exploratory factor analysis is then presented, which was used to group items that were highly correlated into a group, and these groups were then named and used as constructs in the study. The reliability of the constructs was then measured using Cronbach's alpha coefficient, after which the descriptive statistics of the constructs were presented.

The inferential statistics of the study were done using the independent t-tests, univariate analysis of variance (ANOVA), correlation analysis, and regression analysis. The independent t-tests were used to compare whether the views of clerks and junior management were different from those of middle to top management.

ANOVA was then used to determine whether views differ according to various levels of management; namely clerks, junior management, middle management, senior management, and chief executive/ directorate. The extent or degree of the relationship between the variables was done using the Pearson correlation coefficient. Supply chain performance was then predicted using the other constructs by applying regression analysis. The chapter ends with a summary of the findings. The empirical findings are presented in the following sections.

4.3 Response rate

The population of the study comprised the employees of the government departments in Gauteng who are involved directly or indirectly in the procurement process. The targeted population had approximately 180 employees involved in the implementation of the PPPFA; either as requesters of goods or services, or involved in the evaluation process of tenders and quotations in the selection of suppliers. Using the sample size determination table by Krejcie and Morgan (1970), for a sample of 180, the recommended sample size target is 123. A total of 123 questionnaires were distributed to respondents, and the response rate obtained is shown in Table 4.1.

Table 4.1 Response rate of the sample

Item	Number
Total population of procurement officers in the department	N = 180
Questionnaires administered to officers (target sample)	n = 123
Initial total responses	105
Non-usable responses	0
Total usable responses	105
Usable responses rate	85.4%

A total of 105 employees participated in the study. The questionnaire was designed in such a way that if a respondent gave consent to participate, then they had to answer every question as it was administered online and designed in a way where all questions had to be answered. All the questionnaires were complete, and no missing data analysis was done.

Baruch and Holtom (2008) analysed 1607 studies in 17 peer reviewed academic journals and identified 490 different studies that utilised surveys. They found out that the average response rate for studies that utilised data collected from individuals was 52.7%, with a standard deviation of 20.4, while the average response rate for studies that utilised data collected from organisations was 35.7% with a standard deviation of 18.8. The response rate for this study was 85.4%, which is far above the average response rate collected from an organisation or individuals, and which therefore satisfies Baruch and Holtom’s (2008) guidelines; thus, the response rate was excellent.

4.4 Social demographic statistics of the sample

The employees involved in the procurement process were asked to indicate their post level, as shown in Table 4.2.

Table 4.1: Post level of the respondents

Variable	Category	Frequency	%
Post level	Entry or clerical level	17	16.2%
	Junior management	23	21.9%
	Middle management	33	31.4%
	Senior management	23	21.9%
	Chief executive/ directorate	9	8.6%
Total		105	100

The results showed that 16.2% were on entry or clerical level, 21.9% were junior management, 31.4% of the respondents were in middle management, 21.9% were in senior management, while 8.6% were part of the chief executive/directorate division. Looking at the proportions, it can be noted that 61.9% of the respondents were in the middle to top levels of management, while 38.1% were either clerks or junior management. It seems as if people with more senior positions tend to be involved in the implementation of the PPPFA.

4.5 Exploratory factor analysis of preferential procurement on supply chain performance

There were 29 questions on issues involved in the implementation of the PPPFA. Exploratory factor analysis was done to group the items into clusters of highly correlated items. The principal component analysis method was used with a varimax rotation. The item “*organisation uses the PPPFA in the evaluation of tenders*” was dropped from the analysis since it was loading on two factors. A Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy of .854 was obtained, which is greater than .5, indicating that the correlations were adequate for factor analysis.

The Bartlett’s Test of Sphericity was highly significant as supported by a chi-square value of 2049.741 with a p-value of less than .001 ($p < .001$), indicating that the null hypothesis of lack of sufficient correlation between variables was being rejected. The results from both tests looked good, and one could proceed with the analysis. The majority of the commonalities were above .6. The number of factors was determined by taking the eigenvalues that were more than one, and six factors were retained, as shown in Table 4.3. All the factors accounted for 70.4% of the total variance, indicating that the solution was robust since it accounted for at least 60% of the total variance (Hair *et al.*, 2019).

Table 4.3: Rotated factor solution of the constructs

Item	Component					
	1	2	3	4	5	6
Q5	.892					
Q2	.878					
Q4	.846					
Q6	.835					
Q1	.819					
Q7	.711					
Q8	.664					
Q24		.842				
Q22		.808				
Q23		.785				
Q21		.767				
Q25		.677				
Q18		.521				
Q19		.515				

Q14			.839			
Q15			.838			
Q16			.821			
Q17			.721			
Q9			.535			
Q26				.832		
Q29				.814		
Q28				.802		
Q11 (*R)					.808	
Q10 (*R)					.763	
Q20 (*R)					.748	
Q12						.698
Q13						.643
Q27 (*R)						.558
Eigenvalues	5.347	4.357	3.799	2.576	2.147	1.485
Percentage variance explained	19.10%	15.56%	13.57%	9.20%	7.67%	5.30%
Total variance	70.4%					
KMO measure of sampling adequacy	.854					
Bartlett's sphericity test level of significance:	p<.001					

The first factor had an eigenvalue of 5.347, and it accounted for 19.1% of the total variance. The items that were highly loaded on the factor were “*I understand how the PPPFA should be implemented*” and “*the PPPFA is straightforward and easy to understand*”, with factor loadings of .892 and .878, respectively. The factor was named “application of PPPFA” since it consisted of items that involved the PPPFA process.

The second factor had an eigenvalue of 4.357, and it accounted for 15.56% of the total variation. The items topmost in the factor solution were “*there is [sic] always suppliers for all goods/services required who meet the above criteria*” with a factor loading of .842 and “*the department always performs market research and Industry analysis to identify sectors that need advancement of designated groups*” with a factor loading of

.808. The items were about the supply chain of PPPFA, and this factor was named “*supply chain performance.*”

Factor 3 had the items “*PPPFA improves the tendering process*” and “*PPPFA improves the appointment of suppliers*” being topmost and with factor loadings of .839 and .838 respectively. The factor was named “*Benefits of PPPFA,*” and had an eigenvalue of 3.799 and accounted for 13.57% of the total variance.

Factor 4 was named “*negative consequences*” because the items topmost in the factor solution were “*sometimes the process for appointing a supplier is delayed by the above requirement*” with a factor loading of .832 and “*supply chain performance targets are not met when tenders are cancelled*” with a factor loading of .814. It had an eigenvalue of 2.576, and it accounted for 9.2% of the total variation.

The fifth factor had an eigenvalue of 2.147, and it explained about 7.67% of the total variation. The items were “*sometimes my organisation does not comply with the requirements of the PPPFA,*” “*sometimes I do not understand how the PPPFA is to be applied,*” and “*the implementation of the PPPFA is the cause of poor supply chain performance*” with factor loadings of .808, .763 and .748 respectively. All items were reverse-scored.

The last factor had an eigenvalue of 1.485, and it explained 5.3% of the total variation. It consisted of the items “*the department can always identify situations where it is feasible or not feasible to subcontract,*” “*the department understands whether the minimum 30% to be subcontracted relates to the scope of work or price,*” and “*when all suppliers who bid do not meet the prequalification process, the department can make an exception and promote all bidders to the next evaluation stage*” with factor loadings of .698, .643 and .558 respectively. The last statement was reverse-scored. The factor was named “*sub-contract.*”

The factor solution was robust since it explained 70.4% of the total variance. The factors were then made up of the constructs of the study, and the reliability of the constructs is presented in the next section.

4.6 Reliability of the instrument

Cronbach's alpha coefficient was used to examine the unidimensional nature of the instrument, that is, its reliability or internal consistency. The interpretation of the Cronbach alpha coefficient was made using the guidelines proposed by Jain and Angural (2017), which state that a Cronbach alpha of $\alpha \geq .9$ is excellent; $.9 > \alpha \geq .8$ is good; $.8 > \alpha \geq .7$ is acceptable; $.7 > \alpha \geq .6$ is questionable; $.6 > \alpha \geq .5$ is poor and $< .5$ is unacceptable. The results of the reliability analysis are presented in Table 4.4.

Table 4.4: Reliability of the instrument using Cronbach alpha

Construct	No. of items	Cronbach's alpha	Acceptable level
Application of PPPFA	7	.929	Excellent
Benefits of PPPFA	5	.865	Good
Failure to comply	3	.732	Acceptable
Sub-contract	2	.822	Good
Negative consequences	3	.815	Good
Supply chain performance	7	.888	Good
Total	27	.904	Excellent

The item “*when all suppliers who bid do not meet the prequalification process, the department can make an exception and promote all bidders to the next evaluation stage*” was giving the construct dubbed “sub-contract” a Cronbach alpha of .532, which is poor. Its removal raised the Cronbach alpha to .822. After the change, all six of the constructs resulted in reliabilities that were acceptable. The reliability of the whole instrument was excellent, as supported by a Cronbach alpha of .904, and the instrument was appropriate for further data analysis.

4.7 Descriptive statistics of the constructs

The items in the questionnaire were now divided into six constructs, namely the application of PPPFA, benefits of PPPFA, failure to comply, sub-contract, negative consequences, and supply chain performance; as per the findings from the factor analysis. The constructs were measured using a five-point Likert scale which ranged from 1 (strongly disagree) to 5 (strongly agree). In the interpretation of findings, “strongly agree” and “agree” were combined to give the level of agreement, while “strongly disagree” and “disagree” together gave the level of disagreement. A mean of at least 3.5 meant that the respondents were in agreement, while a mean below 2.5 meant that they disagreed. Those who were neutral gave a mean between 2.5 and 3.5. The issues in a construct were ranked using the mean, and the descriptive statistics of the constructs are discussed in the following subsections.

4.7.1 Application of PPPFA

The application of PPPFA was measured using seven items, and the proportions are presented in Table 4.5.

Table 4.5: Descriptive statistics on application of PPPFA

Statement	Level of agreement					Mean
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Q1. I am familiar with the Preferential Procurement Policy Framework Act (PPPFA).	32.7% (36)	53.6% (59)	- -	6.4% (7)	7.3% (8)	3.98
Q5. I understand how the PPPFA should be implemented.	26.4% (29)	50.9% (56)	5.5% (6)	10.9% (12)	6.4% (7)	3.80
Q2. The PPPFA is straightforward and easy to understand.	22.7% (25)	53.6% (59)	6.4% (7)	12.7% (14)	4.5% (5)	3.77
Q6. The calculation of points to be awarded	28.2%	47.3%	5.5%	10.9%	8.2%	3.76

Statement	Level of agreement					Mean
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
to bidders for the price quoted on the bid and allocation of points for BBBEE is straightforward.	(31)	(52)	(6)	(12)	(9)	
Q7. My organisation keeps up to date with changes in legislation, and all changes or updates are communicated timely.	20.0% (22)	52.7% (58)	7.3% (8)	15.5% (17)	4.5% (5)	3.68
Q8. The supply chain regulations are consistent with the PPPFA.	18.2% (20)	50.9% (56)	12.7% (14)	16.4% (18)	1.8% (2)	3.67
Q4. I have received adequate learning and training on how the PPPFA should be implemented.	23.6% (26)	43.6% (48)	4.5% (5)	15.5% (17)	12.7% (14)	3.50

All the items had levels of agreement of more than 50% and a mean of at least 3.5, indicating that the respondents agreed on issues of application of the PPPFA. About 86.3% agreed that they are familiar with the Preferential Procurement Policy Framework Act (PPPFA), with a mean of 3.98. When further asked if they understand how the PPPFA should be implemented, 77.3% agreed while 17.3% were in disagreement, and the mean on the issue was 3.80. In terms of whether the PPPFA is straightforward and easy to understand, 22.7% strongly agreed, and 53.6% agreed, giving an agreement level of 76.3%, with a mean which was 3.77.

Hlakudi (2015) identified some challenges in the implementation of preferential procurement, together with inconsistencies between the PPPFA and the BBBEE Act. From the survey, it was observed that the respondents were familiar with PPPFA implementation, understood how it was to be implemented, and found it straightforward and easy to understand. This, however, contradicts the findings of Selomo and Govender (2016) in the literature review, who found that SCM performance in government departments experienced challenges in the implementation of processes and procedures. The results of this survey proved that the respondents were comfortable with the implementation of the PPPFA.

As noted in Chapter 2, preferential procurement uses a points system in awarding government contracts or tenders, with points being awarded for price and BBBEE (Hlakudi, 2015). From the survey, about 75.5% of the respondents indicated that the calculation of points to be awarded to bidders for the price quoted on the bid and allocation of points for BBBEE is straightforward, with a mean of 3.76; while 72.7% said that their organisation keeps up to date with changes in legislation and all changes or updates are communicated timeously, with a mean of 3.68. This means that the respondents concurred that the preferential point system was easy to use and understand.

When the respondents were asked if the supply chain regulations are consistent with the PPPFA, the majority of the respondents, 69.1%, were in agreement, while 12.7% neither agreed nor disagreed and 18.2% disagreed, resulting in a mean of 3.67 for the responses. The respondents were asked if they had received adequate learning opportunities and training on how the PPPFA should be implemented. About 67.2% were in agreement, 4.5% were neutral, 28.2% were in disagreement, and the mean was 3.5.

The results show that the respondents receive communication of any changes in PPPFA, that they have been trained and are able to award points to the bidders.

Since the items were highly correlated, a composite variable was formed by averaging the seven items. An average mean of 3.74 was obtained, and the standard deviation was .96. The mean is close to four, indicating that most of the respondents were in agreement with issues on the application of PPPFA. Using the empirical rule, about

68.26% of the mean scores fall between 2.78 and 4.7 (\pm one standard deviation from the mean), and the frequency distribution is shown in Figure 4.1.

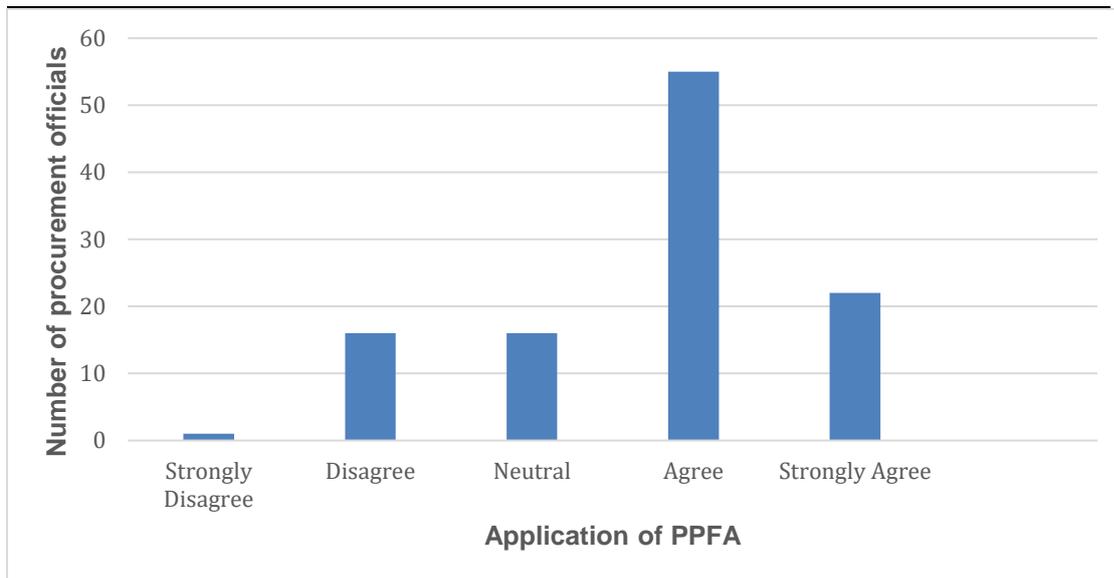


Figure 4.1: Application of PPPFA

Looking at Figure 4.1, about 70% of the respondents agreed on issues on the application of the PPPFA overall, while 14.6% were neutral and 15.5% disagreed.

4.7.2 Benefits of the PPPFA

Five items were used to assess the benefits of the PPPFA, and this information is presented in Table 4.6.

Table 4.6: Descriptive statistics on benefits of the PPPFA

Statement	Level of agreement					Mean
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Q14. PPPFA improves the tendering process.	8.2% (9)	28.2% (31)	10.0% (11)	40.9% (45)	12.7% (14)	2.78
Q15. PPPFA Improves the appointment of suppliers.	7.3% (8)	29.1% (32)	10.0% (11)	34.5% (38)	19.1% (21)	2.71
Q17. Suppliers awarded the contracts in terms of the highest points always perform to the desired expectations.	4.5% (5)	28.2% (31)	14.5% (16)	38.2% (42)	14.5% (16)	2.70
Q9. Suppliers always understand the PPPFA requirements.	6.4% (7)	21.8% (24)	10.0% (11)	36.4% (40)	25.5% (28)	2.47
Q16. Suppliers always meet the requirements of the PPPFA.	2.7% (3)	16.4% (18)	10.9% (12)	38.2% (42)	31.8% (35)	2.20

Most of the respondents are of the opinion that there are no benefits to the implementation of the PPPFA. Just over half, that is, 53.6% of the respondents disagreed that the PPPFA improves the tendering process, and the mean was 2.78. In addition, 53.6% of the respondents disagreed that the PPPFA improves the appointment of suppliers, with a mean of 2.71. When further asked if the suppliers who are awarded the contracts in terms of the highest points always perform to the desired

expectations, 52.7% disagreed while 14.5% were neutral and 32.7% agreed, and the mean was 2.70.

About 61.9% of the respondents disagreed with the statement that suppliers always understand the PPPFA requirements, 10% neither agreed nor disagreed, 28.2% were in agreement, and the mean was 2.47. In addition, about 70% of the respondents disagreed with the statement that suppliers always meet the requirements of the PPPFA, 10.9% were neutral, and only 19.1% agreed, giving a mean of 2.20. The results show that the majority of the respondents do not see PPPFA as a benefit.

An average of 2.57 with a standard deviation of .98 was obtained when the five items were averaged. Using the empirical rule, about 68.26% of the mean score was between 1.59 and 3.55. The levels of agreement on the benefits of PPPFA are presented in Figure 4.2.

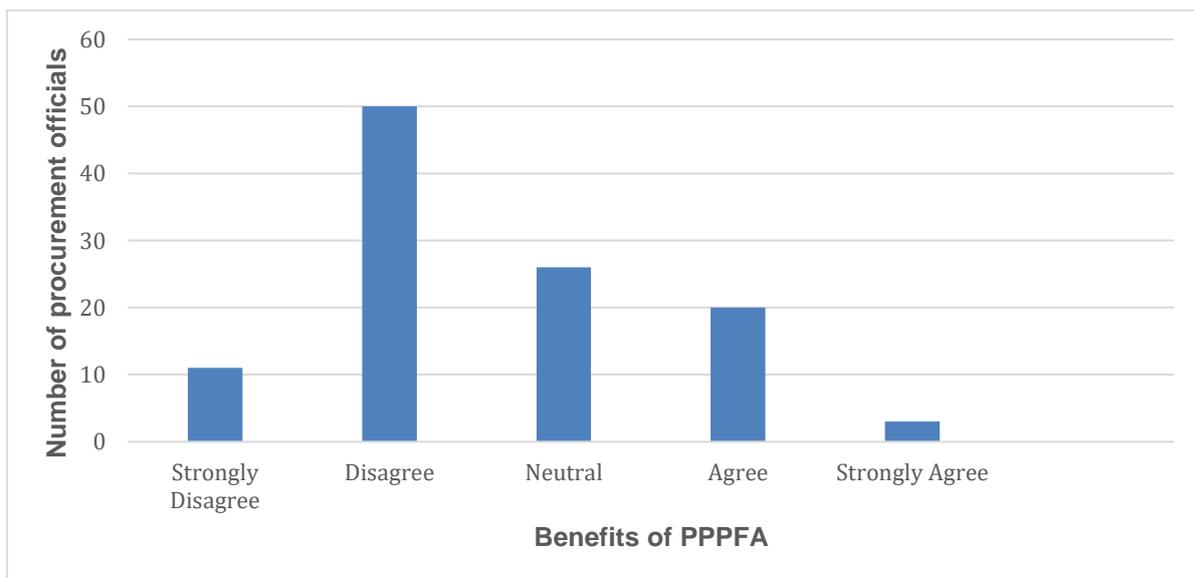


Figure 4.2: Benefits of PPPFA

Of the majority of the respondents, 55.5% disagreed that there are benefits in the PPPFA, while 23.6% were neutral and 20.9% agreed on the benefits in PPPFA. The majority of the respondent seems to have the opinion that there are no benefits of PPPFA realised.

4.7.3 Failure to comply

Failure to comply was assessed using three items, and the level of agreement of the items is shown in Table 4.7.

Table 4.7: Descriptive statistics on failure to comply

Statement	Level of agreement					Mean
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Q20. The implementation of the PPPFA is the cause of poor supply chain performance.	8.2% (9)	36.4% (40)	14.5% (16)	30.0% (33)	10.9% (12)	3.01
Q10. Sometimes I do not understand how the PPPFA is to be applied.	11.8% (13)	34.5% (38)	5.5% (6)	33.6% (37)	14.5% (16)	2.95
Q11. Sometimes my organisation does not comply with the requirements of the PPPFA.	9.1% (10)	35.5% (39)	6.4% (7)	34.5% (38)	14.5% (16)	2.90

About 44.6% agreed that the implementation of the PPPFA is the cause of poor supply chain performance, 14.5% were neutral while 40.9% disagreed on the issue, and the mean was 3.01. When further asked if they sometimes do not understand how the

PPPFA is to be applied, 46.3% agreed, 5.5% were neutral while 48.1% disagreed, and the mean was 2.95. Limitations to the supply chain performance were noted in Chapter 2 in the department’s weaknesses in reporting progress and implementation reports to the general public (Fourie & Malan, 2020). The severe dilemma faced by the public sector is the inability to complete a project on time, despite all the initiatives introduced by the government to improve performance.

This result shows that almost half of the respondents agree while the other half disagree on their understanding of the application of the PPPFA. In terms of the organisation sometimes not complying with the requirements of the PPPFA, close to 50%, that is, 49% disagreed, 6.4% were neutral, and 44.6% agreed. There seem to be mixed opinions on the issue of compliance of the organisation with the PPPFA.

A composite variable of failure to comply was computed by averaging the three items. An average mean of 3.05 was obtained, and the standard deviation was 1.03. Using the empirical rule, about 68.26% of the respondents gave mean scores that ranged between 2.02 and 4.08. This information is presented in Figure 4.3.

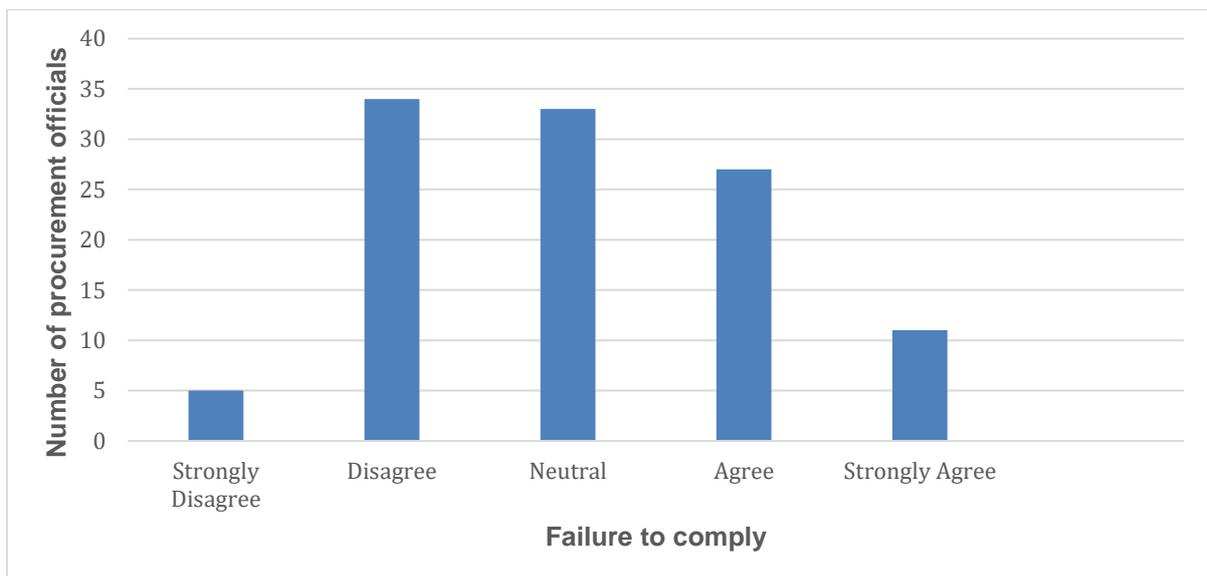


Figure 4.3: Subcontracting

About 35.5% agreed on issues regarding failure to comply, 30% neither agreed nor disagreed, and 34.6% disagreed. The proportions indicate that the respondents had mixed reactions to the issues of failure to comply.

4.7.4 Sub-contracting

Two items were used to measure the issues on sub-contracting since the other was dropped due to low reliability. This information is presented in Table 4.8.

Table 4.8: Descriptive statistics on sub-contracting

Statement	Level of agreement					Mean
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Q13. The department understands whether the minimum 30% to be sub-contracted relates to the scope of work or price	10.9% (12)	53.6% (59)	7.3% (8)	21.8% (24)	6.4% (7)	3.41
Q12. The department can always identify situations where it is feasible or not feasible to sub-contract.	10.0% (11)	50.9% (56)	7.3% (8)	25.5% (28)	6.4% (7)	3.33

64.5% agreed that the department understands whether the minimum 30% to be sub-contracted relates to the scope of work or price, while 7.3% were neutral and 28.2% disagreed, and the mean was 3.41. About 60.9% agreed that the department can always identify situations where it is feasible or not feasible to subcontract, 7.3% were neutral, and 31.9% disagreed, with the mean being 3.33. It can be noted that the majority of the respondents agree on issues of sub-contracting.

The composite variable for sub-contracting was calculated by averaging the two items. The average score was 3.37, and the standard deviation was 1.05. This information is presented in Figure 4.4.

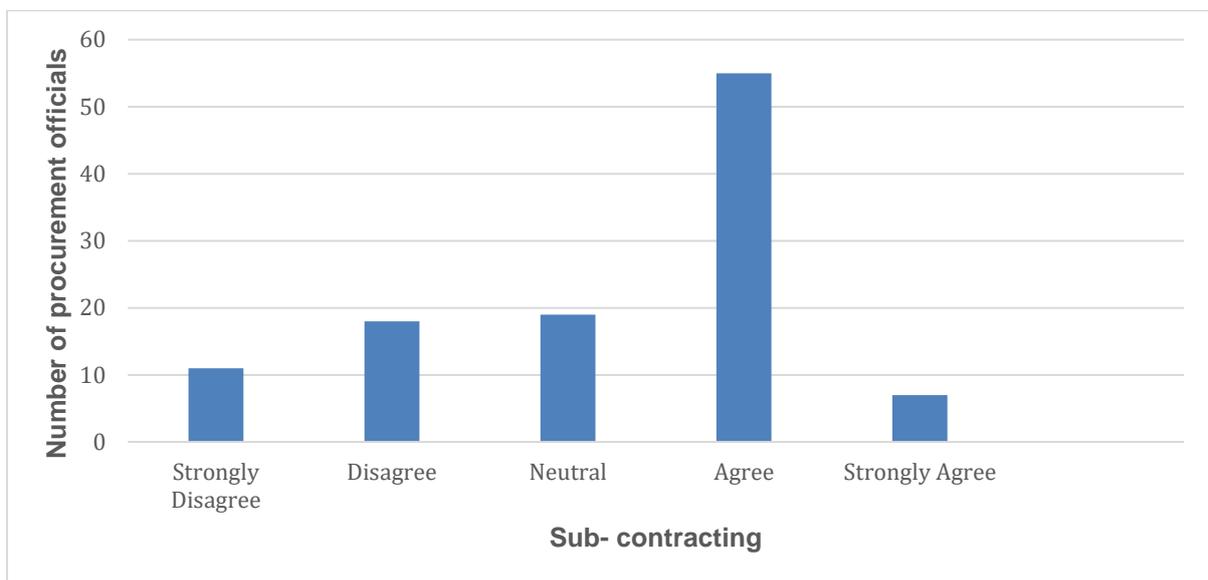


Figure 4.4: Sub-contract

66.4% of the respondents agreed, 17.3% were neutral, and 26.4% disagreed on issues of sub-contracting. The results revealed that the majority of the respondents were in agreement on issues relating to sub-contracting. As noted earlier by Anthony (2019), regulation 9 of the 2017 regulations requires suppliers to sub-contract a minimum of 30% for tenders with a value above R30 million if it is feasible to do so; however, the regulations do not define “feasibility,” making it difficult for those implementing the Act. This created mixed responses from the respondents indicating that it was indeed unclear what this requirement means. It can be concluded that the regulations should be revised in this regard to provide clarity on the sub-contracting requirements.

4.7.5 Negative consequences

Negative consequences were measured using three items, and the items are presented in Table 4.9.

Table 4.9: Descriptive statistics on negative consequences

Statement	Level of agreement					Mean
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Q29. Supply chain performance targets are not met when tenders are cancelled.	51.8% (57)	39.1% (43)	.9% (1)	4.5% (5)	3.6% (4)	4.31
Q28. When tenders are cancelled because a suitable supplier was not found, service delivery is delayed.	36.4% (40)	49.1% (54)	3.6% (4)	5.5% (6)	5.5% (6)	4.05
Q26. Sometimes the process for appointing a supplier is delayed by the above requirement.	13.6% (15)	56.4% (62)	4.5% (5)	18.2% (20)	7.3% (8)	3.51

All the items had levels of agreement of more than 60%, and the mean was at least 3.5, indicating that the majority of the respondents agreed about the negative consequences. A large proportion, that is, 90.9%, agreed that supply chain performance targets are not met when tenders are cancelled, and the mean was 4.31. About 85.5% agreed that when tenders are cancelled because a suitable supplier was

not found, service delivery is delayed, 3.6% were neutral while 11% disagreed, and the mean was 4.05. When further asked if the process for appointing a supplier is sometimes delayed by the above requirement, 70% agreed, 4.5% were neutral, 25.5% disagreed, and the mean was 3.51. The majority of the respondents agreed on the issues of negative consequences.

The findings of the study were in agreement with the findings of Anthony (2019), regarding the 2017 amendments to the PPPFA regulation, where it was noted that departments did not always understand the sub-contracting requirements in terms of the price and the feasibility of sub-contracting. Over 70% of the respondents indicated their disagreement with the understanding of the sub-contracting requirements. From this, it can be concluded that the 2017 regulations were still a work in progress as they provided no clarity on the market-related price as well as the feasibility of sub-contracting.

In further assessing the negative consequences of the sub-contracting requirements, three items used to assess negative consequences were averaged into one variable. An average score of 3.96 was obtained, and the standard deviation was .91. Using the empirical rule, about 68.26% of the mean scores ranged from 3.05 to 4.87. The levels of agreement are presented in Figure 4.6.

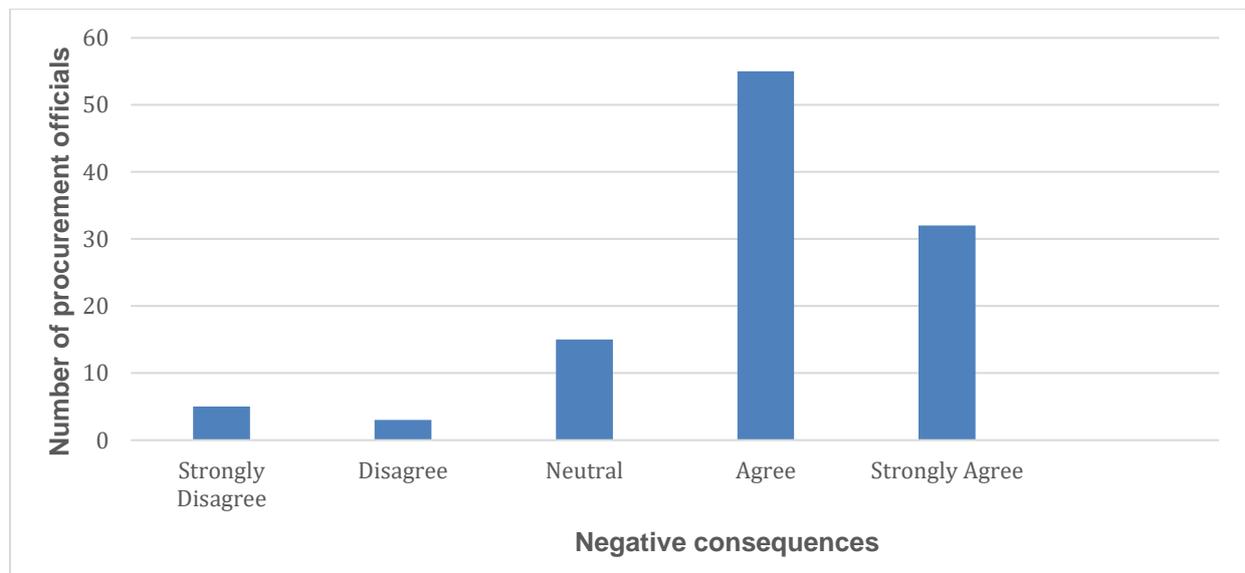


Figure 4.6: Negative consequences

About 79.1% agreed with issues of negative consequences, 13.6% were neutral, and 7.3% disagreed. The results therefore reveal that the majority of the respondents were in agreement on issues of negative consequences.

4.7.6 Supply chain performance

Supply chain performance was assessed using seven items. The respondents' levels of agreement are depicted in Table 4.10.

Table 4.10: Descriptive statistics on supply chain performance

Statement	Level of agreement					Mean
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Q25. Suppliers in those categories are able to do the work and deliver on time.	2.7% (3)	40.9% (45)	26.4% (29)	24.5% (27)	5.5% (6)	3.11
Q21. The process of identifying suppliers in these categories is always easy.	4.5% (5)	49.1% (54)	4.5% (5)	29.1% (32)	12.7% (14)	3.04
Q23. In selecting the designated group to be advanced, it is always possible to verify the number of enterprises in the industry to determine if there will be sufficient competition.	3.6% (4)	47.3% (52)	6.4% (7)	31.8% (35)	10.9% (12)	3.01
Q19. The tender processes to be followed by the department are	9.1% (10)	40.9% (45)	7.3% (8)	26.4% (29)	16.4% (18)	3.00

Statement	Level of agreement					Mean
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
straightforward and always done on a timely basis.						
Q22. The department always performs market research and Industry analysis to identify sectors that need the advancement of designated groups.	2.7% (3)	42.7% (47)	7.3% (8)	34.5% (38)	12.7% (14)	2.88
Q24. There are always suppliers for all goods/services required who meet the above criteria.	3.6% (4)	43.6% (48)	5.5% (6)	30.0% (33)	17.3% (19)	2.86
Q18. The department always conducts market analysis to obtain a market-related price before advertising a tender.	9.1% (10)	32.7% (36)	4.5% (5)	35.5% (39)	18.2% (20)	2.79

About 43.6% indicated that suppliers in these categories are able to do the work and deliver on time, 26.4% were neutral, while 30% disagreed, and the mean was 3.11. 53.6% agreed that the process of identifying suppliers in these categories was always easy, 4.5% were neutral, while 41.8% disagreed, with a mean of 3.04. When asked whether, in selecting the designated group to be advanced, it is always possible to verify the number of enterprises in the industry to determine if there will be sufficient

competition, 50.9% agreed; 6.4% were neutral while 42.7% disagreed, with a mean of 3.01.

Half of the respondents (50%) agreed that the tender processes to be followed by the department are straightforward and always done on a timely basis, 7.3% were neutral while 42.8% disagreed, and the mean was 3. Looking at the issues, it can be noted that the respondents could identify suppliers, and the tender process could be carried out in a timely manner.

47.2% agreed that there were always suppliers for all the goods/services required who meet the above criteria, while 5.5% were neutral, and 47.3% disagreed, and the mean was 2.86. However, 53.7% of the respondents disagreed with the statement that the department always conducts market analysis to obtain a market-related price before advertising a tender, while 4.5% were neutral, 41.8% agreed, and the mean was 2.79. As was noted in the literature review by Quinot (2018), the 2017 regulations require the bid to be awarded to the bidder scoring the highest market-related price, although the regulations do not define what a market-related price is. By respondents indicating that departments did not always conduct a market analysis, the findings of the study confirmed that bids could be awarded at a price that is not market-related.

The composite variable for supply chain performance resulted in an average of 2.96 and a standard deviation of .94. Using the empirical rule, about 68.26% were average scores that ranged from 2.02 to 3.90. The agreement levels are presented in Figure 4.6.

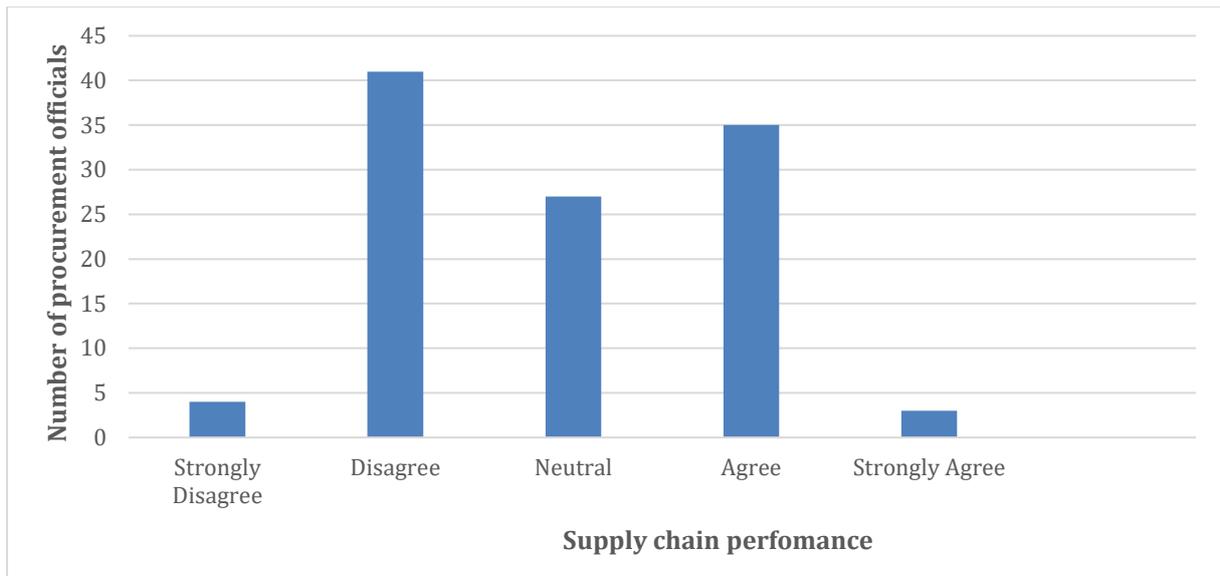


Figure 4.6: Supply chain performance

It can be noted that 34.6% agreed on issues on supply chain performance, 24.6% were neutral, and 40.9% disagreed. It does not seem as though there is a majority of respondents agreeing that the supply chain seems to be performing above average.

4.8 Comparing groups using independent t-tests and ANOVA

Comparative analysis was done to determine whether the levels of management impact the issues associated with the PPPFA. In this case, the levels of management were divided into two categories; one comprising clerks and junior management and the other from middle management to top management. An independent t-test was done to determine the difference in perception between the two groups. The other comparative analysis looked at all the levels of management separately to determine whether their views differ by post level, and a one-way analysis of variance was used.

The assumptions of the independent t-test and ANOVA are that the observations should be independent, data should be drawn from a normally distributed population, and that the variances across groups should be equal. A probability sample was used to randomly select the participants, and thus independence was achieved. The central limit theorem was used to achieve normality since the sample size was large. Levene's test of equality of variances was used to test for equal variances across groups. For the independent t-tests, if the test was violated, statistics under equal

variances not assumed were presented. If the variances across groups were equal, then statistics under equal variances assumed were presented. For the univariate analysis of variance, if the variances were not equal, then the Welch robust test of equality of means was used to test for equality of mean, and if differences exist, then the Games-Howell test was used as a post-hoc test. If the variances across the group were equal, then the traditional ANOVA F test was used and Tukey HSD as a post-hoc test.

The factors obtained from factor analysis were averaged into composite variables, which are:

- Application of the PPPFA;
- Benefits of the PPPFA;
- Failure to comply;
- Sub-contract;
- Negative consequences and
- Supply chain performance.

The tests were done at the 5% level of significance, and a p-value of less than .05 indicated that at least one pair of mean was different, and if it was less than .01, it was highly significant. The comparative analysis is presented in the next subsections.

4.8.1 Independent t-test for determining difference in mean scores for two group levels of management

The levels of management were divided into two groups, which were clerk or junior management and middle management to top management. Levene's test for equality of variance resulted in the construct application of the PPPFA having unequal variances with a p-value of .002. The statistics under equal variances not assumed were discussed in that case. The independent t-test for equality of means results is shown in Table 4.11.

Table 4.11: Independent t-test to determine the difference in mean ratings by the level of management

Construct	Group Statistics				Levene's Test for Equality of Variances			T-test for Equality of Means		
	Management Level	N	Mean	SD	Equal variances	F	Sig	t-value	df	Sig (2-tailed p-score)
Application of PPPFA	Clerks and junior management	40	3.164	1.019	Assumed	10.292	.002	-5.131	103	$p < .001$
	Middle to top management	65	4.066	.773	Not			-4.809	66.482	$p < .001$
Benefits of PPPFA	Clerks and junior management	40	2.465	.934	Assumed	1.309	.255	-.758	103	.450

	Middle to top management	65	2.615	1.019	Not			-	88.194	.441
Failure to comply	Clerks and junior management	40	2.850	1.038	Assumed	.042	.838	-	103	.156
	Middle to top management	65	3.149	1.043	Not			-	82.991	.156
Sub-contract	Clerks and junior management	40	3.338	.977	Assumed	2.824	.096	-	103	.911
	Middle to top management	40	3.164	1.019	Not			-	91.609	.908
Negative consequences	Clerks and junior management	40	4.117	.885	Assumed	.150	.700	1.485	103	.141
	Middle to top management	65	3.841	.947	Not			1.509	86.959	.135
Supply chain performance	Clerks and junior management	40	2.911	.858	Assumed	2.594	.110	-	103	.722
								.357		

	Middle to top management	6 5	2.9 78	.98 6	Not			- .36 9	91. 400	.713
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The independent t-tests showed that there was no statistical difference between clerks or junior management and middle to top management on issues relating to the benefits of the PPPFA, failure to comply, sub-contracting, negative consequences, and supply chain performance. The views of the levels of management had no influence on the issues. However, there was a significant statistical difference in the application of the PPPFA between clerks and junior management and middle to top management. The level of management had an influence on the ratings of the issues on the application of the PPPFA. It is crucial to align procurement plans with the objectives of an institution.

The independent t-test results revealed that there was a significant difference between clerks and junior management and middle to top management on issues on the application of the PPPFA, $t(66.482) = -4.809, p < .001$. The mean for clerks and junior management ($M = 3.16, SD = 1.01$), was significantly lower than the mean for middle to top management ($M = 4.07, SD = .77$). The 95% confidence interval for the application of the PPPFA ranged from -1.28 to -.53. The magnitude of the difference in the means was of significant, as evidenced by an eta-squared = .18 ($\eta^2 = .18$). Approximately 18% of the variation in the application of the PPPFA is attributable to differences in levels of management. The confidence interval error bars are shown in Figure 4.7 below.

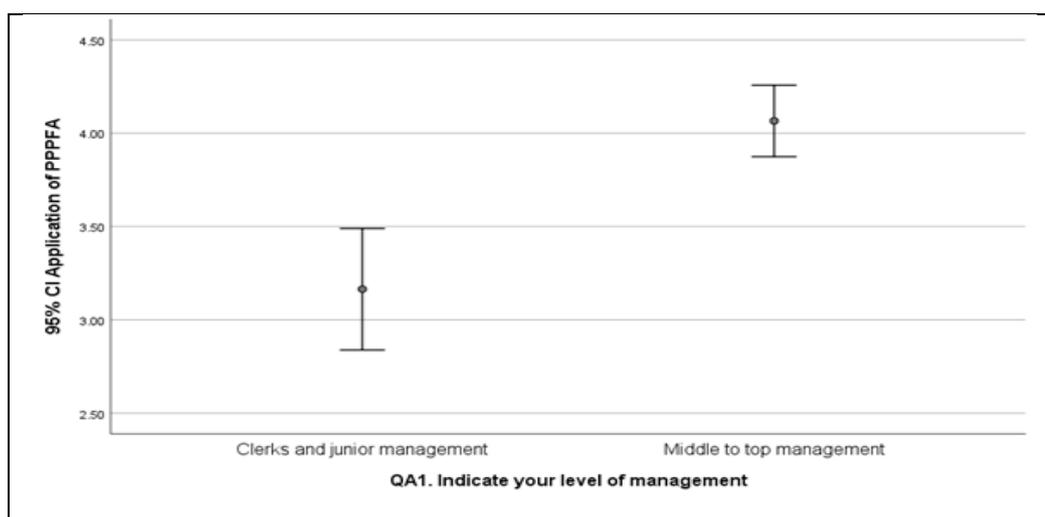


Figure 4.7: Confidence interval error bars for application of PPPFA by the level of management

The middle to top management had a mean close to 4, indicating that there was agreement relating to issues of the application of the PPPFA, while the clerks and junior management had a mean close to 3, indicating that they were neutral. Those in middle and top management had less variability in their ratings (as supported by a shorter bar) compared to clerks and junior management.

There was no significant difference in the mean scores for the benefits of the PPPFA for clerks and junior management ($M = 2.47, SD = .93$) and middle to top management ($M = 2.62, SD = 1.02$) as supported by a t-value of $t(103) = -.758, p = .450$. The means for both groups were close to three, showing that both groups neither agreed nor disagreed on issues of benefits of the PPPFA.

Similarly, no significant difference in mean scores was obtained for failure to comply among clerks and junior management ($M = 2.85, SD = 1.04$) and middle to top management ($M = 3.15, SD = 1.04$) as supported by a t-value of $t(103) = -1.428, p = .156$. Both means were close to 3, suggesting that both groups neither agreed nor disagreed on issues of failure to comply.

There was also no significant difference in mean scores for sub-contracting for clerks and junior management ($M = 3.34, SD = .98$) and middle to top management ($M = 3.16, SD = 1.02$) as supported by a t-value of $t(103) = -.112, p = .911$. The mean was close to 3, suggesting that both groups neither agreed nor disagreed on issues relating to sub-contracting.

The independent t-tests resulted in no statistically significant difference in mean scores for negative consequences for clerks and junior management ($M = 4.12, SD = .89$) and middle to top management ($M = 3.84, SD = .95$), as seen by a t-value of $t(103) = 1.485, p = .141$. The mean scores for both groups were close to 4, indicating that both groups agreed on the issues of negative consequences.

The independent t-tests for the construct on supply chain performance showed no statistical difference for clerks and junior management ($M = 2.91, SD = .86$) and those in middle to top management ($M = 2.98, SD = .97$), as seen by a t-value of $t(103) =$

–.357, $p = .722$. Both means were close to 3, indicating that both groups neither agreed nor disagreed on issues relating to supply chain performance.

4.8.2 ANOVA test to determine difference in mean scores by levels of management

The levels of management were categorised into an entry or clerical level, junior management, middle management, senior management, and chief executive/directorate. Levene's test of homogeneity of variance showed that there were unequal variances across categories linked to sub-contracting, as supported by a p -value of .035. The Welch robust test for equality of means was used to test for the difference between means for the construct sub-contract, and if differences exist, the Games-Howell test was used as the post-hoc test. The other constructs had equal variances across groups, and the traditional ANOVA F test was used for testing equality of means, and the Tukey HSD was used as a post-hoc test where differences exist. The results of the ANOVA tests are presented in Table 4.12.

Table 4.2: ANOVA test to determine the difference in mean ratings by the level of management

Constructs	Levene's test for equality of variance		Test for equality of means	
	<i>F</i>	<i>p-value</i>	<i>F</i>	<i>p-value</i>
Application of PPPFA	1.03 7	.392	19. 175	$p < .001$
Benefits of PPPFA	.404	.806	1.6 57	.166
Failure to comply	.499	.737	3.3 64	.013
Sub-contract	2.68 8	.035	1.6 82	.175
Negative consequences	.429	.787	.94 9	.439

Supply chain performance	1.70 6	.155	1.7 00	.156
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^b Welch F-statistic

The equality of means tests results showed that there was no significant difference in means across levels of management for the issues on benefits of the PPPFA, sub-contracting, negative consequences, and supply chain performance. The level of management did not influence the views of the respondents on these issues.

There was a significant difference in means across levels of management with respect to the application of the PPPFA and failure to comply. The level of management had an influence on the views of the respondents on these issues. Top and medium-level management were those most involved in the implementation process. Although implementation is carried out mainly at the top level, Fourie and Malan (2020) indicated that most government institutions had poor strategic and annual performance plans that were not aligned to the mandate of the public sector, resulting in compromised procurement planning and implementation processes leading to poor service delivery.

The univariate analysis of variance results showed that the effect of levels of management on the application of PPPFA was statistically significant ($F(4, 100) = 19.175, p < .001$). A large effect size, $\eta^2 = .43$ was obtained, and approximately 43% of the variation in application of the PPPFA is attributable to differences between the five levels of management. Post-hoc comparisons using Tukey procedures were used to determine which pairs of the five groups' mean differed, and the results are presented in Table 4.13.

Table 4.13: Tukey-HSD homogeneous group for application of the PPPFA by the level of management

Tukey HSD ^{a,b}				
QA1. Indicate your level of management	N	Subset for alpha = 0.05		
		1	2	3
Entry or clerical level	17	2.4286		
Junior management	23		3.7081	
Middle management	33		3.8615	
Senior management	23		4.0559	
Chief executive/ directorate	9			4.8413

The post hoc analysis revealed that the mean for junior management ($M = 3.71, SD = .79$), middle management ($M = 3.86, SD = .66$) and senior management ($M = 4.06, SD = .87$) were significantly higher than the mean for entry or clerical level ($M = 2.43, SD = .81$) and significantly lower than the mean for chief executive/directorate ($M = 4.84, SD = .33$). The confidence interval error bars are shown in Figure 4.8.

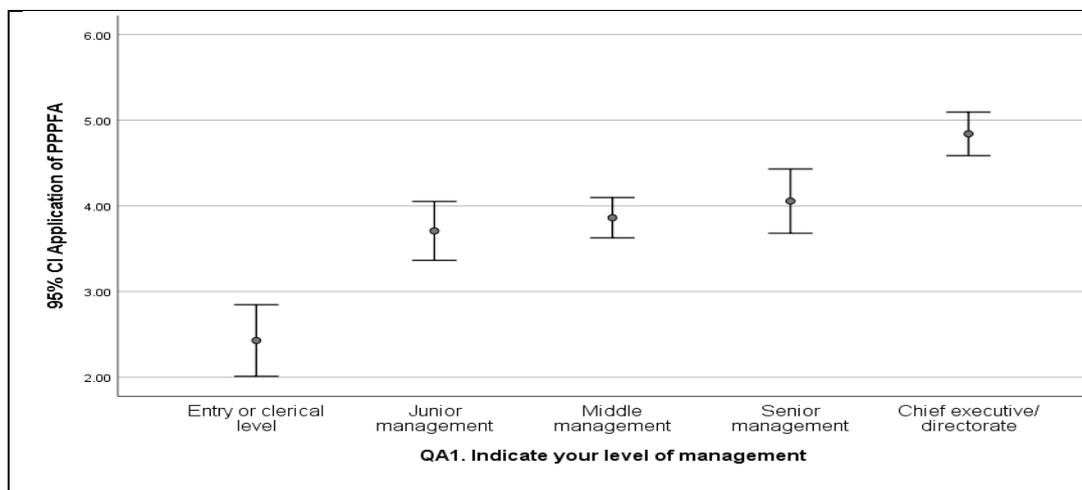


Figure 4.8: Confidence interval error bars for application of the PPPFA by the level of management

The entry or clerical level had a mean close to 2, indicating that there was disagreement on issues relating to the PPPFA. The junior management, middle management, and senior management had a mean close to 4, indicating that there was agreement on issues relating to the application of the PPPFA, while the Chief executive/directorate had means close to 5, indicating that they strongly agreed with

issues on the application of the PPPFA. Looking at Figure 4.8 the level of agreement tends to increase with the level of management. Those in lower ranks agree less, while those in higher ranks tend to agree more.

The one-way analysis of variance revealed that there was no statistical difference in mean scores across categories of levels of management on the issue of benefits of the PPPFA ($F(4,100) = 1.657, p = .166$). The level of management did not have an influence on the mean scores on the benefits of the PPPFA.

The one-way analysis of variance test results for failure to comply revealed a statistically significant difference across categories of levels of management ($F(4, 100) = 3.364, p = .013$). The effect size, $\eta^2 = .12$ was moderate. About 12% of the variation in failure to comply is attributable to differences between the five levels of management. The post-hoc comparisons using Tukey procedures were used to determine which pairs of the five groups' mean differed, and the results are presented in Table 4.14.

Table 4.14: Tukey-HSD homogeneous group for failure to comply by the level of management

Tukey HSD ^{a,b}			
QA1. Indicate your level of management	N	Subset for alpha = 0.05	
		1	2
Entry or clerical level	17	2.4706	
Middle management	33	2.9293	
Junior management	23	3.1304	3.1304
Senior management	23	3.1594	3.1594
Chief executive/ directorate	9		3.9259

The post-hoc analysis revealed that the mean for the chief executive/directorate ($M = 3.93, SD = 1.15$) was significantly higher than the mean for entry or clerical level ($M = 2.47, SD = .89$) and the mean for middle management ($M = 2.93, SD = .96$). The junior management and middle management were not different from any other group. The confidence interval error bars are presented in Figure 4.9.

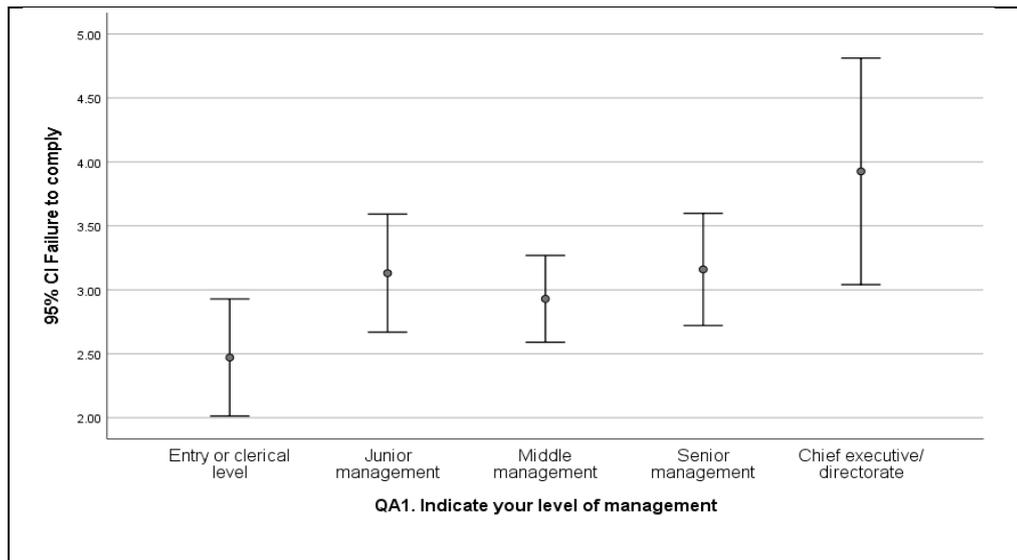


Figure 4.9: Confidence interval error bars for failure to comply by the level of management

The entry or clerical level had a mean close to 2, indicating that there was some disagreement on issues relating to the failure to comply. The middle management respondents had a mean close to 3, indicating that there were neutral on issues on failure to comply, while the chief executive/directorate had a mean close to 4, indicating that they agreed on issues on failure to comply. This could be an indication that senior management are more confident by virtue of being in their positions for a long time, thus having obtained adequate experience in preferential procurement, while junior and middle management are still in the learning process and thus present a lower confidence interval.

The Welch robust test of equality of means revealed that the effect of levels of management on mean scores for sub-contracting was not statistically significant ($Welch F(4, 36.826) = 1.682, p = .175$). The levels of management had no effect on the mean scores for sub-contracting.

The ANOVA results showed that levels of management had no effect on mean scores for negative consequences ($F(4, 100) = .949, p = .439$). There was no difference in mean scores for negative consequences for levels of management.

The one-way analysis of variance revealed that there was no statistical difference in mean scores across levels of management on supply chain performance ($F(4, 100) =$

.949, $p = .439$). The levels of management did not have an impact on the mean scores on supply chain performance.

4.9 Correlation analysis

Pearson correlation analysis was used to determine the extent of the relationship between the constructs at the 5% level of significance. The rule of thumb provided by Cohen (1988) states that if $r = .10 - .29$ then there is a low effect (low correlation); if $r = .30 - .49$ there is a medium effect (moderate correlation) and if $r = .50 - .99$ there is a large effect (strong correlation). This was used to interpret the extent of the relationships. The correlations between the constructs are presented in Table 4.15.

Table 4.15: Correlation between variables

Item	1	2	3	4	5	6
1. Application of PPPFA						
2. Benefits of PPPFA	.310 ^{a**}	-				
3. Failure to comply	.229 [*]	.09 7	-			
4. Sub-contract	.464 ^{a**}	.40 8 ^{a**}	.130	-		
5. Negative consequences	.120	- .06 5	- .304 a**	.283 ^{**}	-	
6. Supply chain performance	.425 ^{a**}	.55 6 ^{b**}	.168	.537 ^{b**}	.151	-

*p < .05 statistically significant; ** p < .01 statistically highly significant

^ar > .3 statistically significant (medium effect); ^br > 0.5 statistically significant (large effect)

Supply chain performance had a statistically significant positive correlation with application of the PPPFA ($r = .425$; $p < .001$), benefits of the PPPFA ($r = .556$; $p < .001$)

and sub-contracting ($r = .537$; $p < .001$). The correlations are of medium effect, large effect, and large effect respectively. High values in supply chain performance were associated with high values in application of the PPPFA, benefits to the PPPFA, and sub-contracting. Thus, application of the PPPFA, benefits of the PPPFA, and sub-contracting may be good predictors of supply chain performance.

Application of the PPPFA had a statistically significant positive correlation with benefits of PPPFA ($r = .310$; $p < .001$), failure to comply ($r = .229$; $p < .05$), and sub-contracting ($r = .464$; $p < .001$). The correlations were of a medium effect, low effect, and medium effect respectively. High values in the application of the PPPFA are associated with high values in the benefits of the PPPFA, failure to comply, and sub-contracting.

Benefits of the PPPFA had a significantly moderate positive correlation with sub-contracting ($r = .408$; $p < .001$). High scores in benefits of the PPPFA are associated with high scores in sub-contracting.

Failure to comply had a statistically significant negative correlation with negative consequences ($r = -.304$; $p < .001$). It was of a moderate effect. High values in failure to comply are associated with low values in negative consequences. Sub-contracting had a statistically significant positive correlation with negative consequences ($r = .283$; $p < .001$). It was of a low effect. High values in sub-contracting are associated with high values in negative consequences.

4.10 Multiple regression analysis with supply chain performance as the dependent variable

A regression analysis was used to determine how application of the PPPFA, benefits of the PPPFA, failure to comply, sub-contracting, and negative consequences predict supply chain job performance. The model summary statistics are shown in Table 4.16.

Table 4.16: Model summary results

Model	R	R Square	Adjusted Square	Std. error of the estimate	R square change	F change	Sig F Change
1	0.678	0.459	0.433	0.70428	0.459	17.658	$p < .001$

The regression resulted in $R = .678$. The R-squared and R-squared adjusted are .459 and .433, respectively. Using R-squared adjusted, about 43.3% of the variation in supply chain performance is explained by the model, while 56.7% remains unexplained. The model is not a good fit since the amount explained is below 50%. The multiple regression results are shown in Table 4.17.

Table 4.17: Multiple regression analysis with supply chain performance as the dependent variable

	Unstandardised	Standardised	T	P	F	R	R ²	Adjusted R ²	
	coefficients	coefficients							
	B	S Beta							
Model a:									
Constant	-.082	.	-	.863	17.	.	.4	.433	
		4	.17		658	6	5		
		7	3			7	9		
		4				8			
Application of PPPFA	.138	.	.142	1.6	.094				
		0		90					
		8							
		2							
Benefits of PPPFA	.387	.	.404	4.9	<i>p</i> < .001				
		0		40**					
		7							
		8							
Failure to comply	.089	.	.098	1.2	.221				
		0		31					
		7							
		3							
Sub-contract	.232	.	.261	2.8	.005				
		0		63**					

		8			
		1			
Negative consequences	.119	.	.116	1.4	.063
		0		05	
		8			
		5			

* $p < .05$; ** $p < .01$

The regression model was significant ($F(5, 104) = 17.658, p < .001$) with an adjusted coefficient of determination of $R^2 = .433$. Benefits of the PPPFA and sub-contracting are significant at the 5% level, while applications of the PPPFA are significant at the 10% level, all with a positive effect.

Respondents predicted that supply chain performance is

$$\begin{aligned} \text{Supply chain performance} = & -.082 + .138\text{Application of PPPFA} + \\ & .387\text{Benefits of PPPFA} + .089\text{Failure to comply} + .232\text{Sub - contract} + \\ & .119\text{Negative consequences} \end{aligned}$$

At the 10% level of significance, supply chain performance increased by .138 for each increase of one unit in the application of the PPPFA ($\beta_1 = .138, p = .094$). The application of the PPPFA contributes to the prediction of supply chain performance at the 10% level of significance.

Supply chain performance increased by .387 for each increase of one unit in the benefits of the PPPFA ($\beta_2 = .387, p < .001$) and increased by .232 for each increase of one unit in sub-contracting ($\beta_4 = .232, p < .001$). Benefits of the PPPFA and sub-contracting contribute to the prediction of supply chain performance. It can be concluded that the benefits of PPPFA and sub-contracting have a significant positive impact on supply chain performance.

Failure to comply and negative consequences do not contribute significantly to supply chain performance.

4.11 Conclusion

The purpose of this chapter was to report on the findings of the data. Data were analysed using descriptive and inferential statistics, using the SPSS software, Version 26. It was noted from the results that the level of management had an effect on the implementation of the PPPFA. This was observed in the fact that more senior personnel were involved in the implementation process. Generally, it appeared that the respondents were familiar with the PPPFA and understood how it should be implemented, as they found it simple and straightforward to understand.

The results indicated that, on average, respondents were adequately trained on the PPPFA, as only 28.2% of the respondents indicated that they had not received training. Most of the respondents were of the opinion that the PPPFA yielded no benefits in the procurement process, with 44.6% of the respondents consenting to PPPFA implementation being the cause of poor supply chain performance. With regard to the compliance issues, respondents presented mixed reactions to the issues of failure to comply. It was, however, noted that the majority of the respondents agreed that the departments did not always conduct a market analysis to obtain a market-related price. This chapter discussed the results obtained from the survey. The following chapter will provide general conclusions for the entire study as well as providing recommendations and the outlining possibilities for future research.

Chapter 5: Conclusions and Recommendations

The previous chapter reported on the findings of the study as obtained from the empirical study. The aim of the study was to determine the effect of preferential procurement on supply chain performance. Through a quantitative approach and literature review, data were collected on preferential procurement and assessed to determine its effectiveness on supply chain performance in government departments.

This chapter will present the conclusions to the study and provide recommendations based on:

- The findings of the empirical study and the literature review
- An evaluation of whether the objectives of the study have been achieved
- A discussion on the limitations of the study
- Recommendations for future research. The study concludes with a summary of the research.

The purpose of this chapter is to discuss the implications of preferential procurement on supply chain performance in Gauteng government departments. Based on the data obtained, limitations to the study will be discussed and recommendations for further studies will be provided. Furthermore, this chapter will give a brief discussion of the managerial implications of the study.

5.1 Summary of key findings

The section that follows below will give a summary of the results against each objective:

The first objective of the study was:

To obtain management views on preferential procurement and supply chain performance in the implementation of the Preferential Procurement Act.

The findings of the study revealed that about 70% of the respondents agreed on issues relating to the application of the PPPFA. An average of 3.74 and about 68.26% of the mean

scores fall between 2.78 and 4. It was revealed from the study that preferential procurement is generally applied across Gauteng government departments.

As the study sought to determine the effect of preferential procurement on supply chain performance, it was important to determine if the PPPFA was viewed as having benefits to the departments. From the sample surveyed, 55.5% disagreed with the suggestion that there were benefits to the PPPFA, regarding preferential procurement as having no positive impact on their departments. An average of 2.57 was obtained, and about 68.26% of the mean score was between 1.59 and 3.55. About 35.5% agreed on issues of failure to comply, 30% neither agreed nor disagreed, and 34.6% disagreed. An average mean of 3.05 was obtained, and the standard deviation was 1.03. About 68.26% of the respondents gave mean scores that ranged between 2.02 and 4.08. A proportion of 66.4% agreed, 17.3% were neutral, and 26.4% disagreed on issues relating to sub-contracting. The average score was 3.37, and about 68.26% of the respondents gave scores between 2.32 and 4.42. About 79.1% agreed regarding issues on negative consequences.

It can be noted that 34.6% agreed on issues of supply chain performance, 24.6% were neutral, and 40.9% disagreed. The composite variable for supply chain performance resulted in an average of 2.96, and about 68.26% provided average scores that ranged from 2.02 to 3.90.

The second objective was:

To determine the effect of management views on preferential procurement and supply chain performance.

Supply chain performance had a statistically significant positive correlation with the application of the PPPFA ($r = .425$; $p < .001$), benefits of the PPPFA ($r = .556$; $p < .001$) and sub-contracting ($r = .537$; $p < .001$). The correlations indicate a medium effect, large effect, and large effect respectively. High values in supply chain performance were associated with high values in the application of the PPPFA, benefits of the PPPFA, and sub-contracting. Thus, the application of the PPPFA, benefits of the PPPFA, and sub-contracting may be good predictors of supply chain performance. No significant correlation between failure to comply and negative consequences was found.

The regression model was significant with an adjusted coefficient of determination of $R^2 = .433$. The benefits of PPPFA and sub-contracting are significant at the 5% level, while the applications of the PPPFA are significant at the 10% level, all with a positive effect.

About 43.3% of the variation in supply chain performance is explained by the model, while 56.7% remains unexplained. The model is not a good fit since the amount explained is below 50%.

At the 10% level of significance, supply chain performance increased by .138 for each increase of one unit in the application of the PPPFA. The application of the PPPFA contributes to the prediction of supply chain performance at the 10% level of significance.

Supply chain performance increased by .387 for each increase of one unit in the benefits of the PPPFA and increased by .232 for each increase of one unit in sub-contracting. Benefits of the PPPFA and sub-contracting contribute to the prediction of supply chain performance. It can be concluded that the benefits of the PPPFA and sub-contracting have a significant positive impact on supply chain performance. Failure to comply and negative consequences do not contribute significantly to supply chain performance.

The third objective was:

To determine how management levels impacted preferential procurement and supply chain performance.

The independent t-tests showed that there was no statistical difference between clerks or junior management and middle to top management on issues relating to the benefits of the PPPFA, failure to comply, sub-contracting, negative consequences, and supply chain performance. The views of the levels of management had no influence on the issues. However, there was a significant statistical difference in the application of the PPPFA between clerks and junior management, and middle to top management. The level of management had an influence on the ratings of the issues on the application of the PPPFA.

The ANOVA equality of means tests' results showed that there was no significant difference in mean across the different levels of management for the issues relating to the benefits of

the PPPFA, sub-contracting, negative consequences, and supply chain performance. The level of management did not influence the views of the respondents on these issues.

There was a significant difference in means across the different levels of management with respect to the application of the PPPFA and failure to comply. The level of management had an influence on the views of the respondents on these issues.

The hypothesis generated from the study was as follows:

H1: Management at different levels understand preferential procurement differently.

H2: Management level has an influence on the perception of employees on preferential procurement and supply chain performance

From the data obtained, it was noted that preferential procurement played a role in supply chain performance. This was seen where respondents agreed that supply chain performance was delayed where procurement was delayed due to the cancellation of tenders that did not comply with PPPFA requirements. It was further noted that the level of management had an influence on the application of the PPPFA, as it was seen that the implementation takes place primarily by staff at the medium and senior levels of management. About 28% of the respondents indicated that they needed training on the PPPFA, and this was mostly at junior level. The hypotheses therefore proved to be true and were considered as acceptable for the study.

5.2 Managerial implications of the study

The purpose of the study was to determine the effect of preferential procurement on supply chain performance. From the objectives, the study determined the influence or effect of management on the implementation of the PPPFA. It was observed that middle and senior management played an active role in the implementation of the PPPFA. To foster a culture of good implementation practices, it is recommended that training be provided from a more junior employee level to ensure that the implementation process is understood from the onset and across all employee levels.

Implementing the PPPFA at medium and senior management level could mean that management either does not delegate or does not train their lower-level staff. The ability to delegate and adequately train staff could ease the weight off management and allow them

to focus on strategic and corporate issues pertaining to the organisation. The study also revealed that the departments did not always conduct a market analysis to determine a market-related price; this means that departments could be procuring goods and services that are not cost-effective, which could be detrimental to the functioning of the departments.

5.3 Benefits of the study

The study is deemed useful for the following reasons:

- It can be used as a basis to inform other government departments on the effectiveness of the implementation of the PPPFA. Furthermore, it could be used as a guide by the National Treasury to review the PPPFA and other SCM regulations.
- To interrogate the 2017 amendments to the PPPFA in order to highlight issues that require clarity with regard to the market price as well as subcontracting, as identified in the literature review.
- To emphasise the importance of benchmarking the implementation of the PPPFA against supply chain performance. Departments can use the PPPFA implementation as a tool to track supply chain performance.

5.4 Recommendations

Based on the evidence that has been gathered in this study, the following were considered as appropriate recommendations to support the study:

- From the literature review, it was noted that the latest amendments to the PPPFA contained terms and clauses that were not well defined and were open to subjective interpretation. It is recommended that the National Treasury revisits the wording of the PPPFA to ensure that terms are clearly defined and leave no room for subjectivity.
- The implementation was regarded as a challenge in the lower levels of management. It is recommended that the implementation criteria of the PPPFA are revisited to ensure that they are understood across all levels of management.

- Continuous training should be provided to procurement officials to ensure that knowledge is aligned to developments in the PPPFA. 28.2 % of the respondents indicated that they had not received adequate training, suggesting that there is a need for training. This could be achieved through an ongoing review and evaluation of the implementation of the PPPFA. To achieve this, supply chain performance will have to be monitored by collecting and analysing data on the implementation of the PPPFA on a regular basis. Furthermore, changes and updates to the policy should be communicated on a prompt basis to ensure that all departments stay up-to-date with the changes in policy and procurement legislation.
- To ensure that tenders are awarded to companies that meet not only the BBBEE requirements but possess adequate skills as well, the departments should consider gathering more details on the bidding companies' profiles during the tendering process.
- The extent to which preferential procurement achieves socio-economic objectives could be benchmarked by setting clear performance measurement indicators, which will aid the setting of goals both on a short- and long-term basis.
- The preferential point system could be revisited, and points awarded not only in terms of price and BBBEE but take other factors into account which impact directly on performance.

5.5 Limitations and recommendations for future studies

Due to the time constraints, and the self-funding nature of the study, the researcher only selected four government departments for the study. As such, the findings of the study are limited and cannot be generalised. The study only focused on Gauteng government departments; it is recommended that future studies could focus not only on government departments but on municipalities as well, as they conduct their procurement in a similar manner to government departments. The focus of the study was on the effects of preferential procurement on supply chain performance; future studies could focus on what would have happened to the South African economy had preferential procurement not been introduced.

5.6 Conclusion

The objective of the study was to determine the effect of preferential procurement on supply chain performance. Although the literature review indicated that there were challenges with preferential procurement, the empirical results revealed that the preferential procurement process was generally functioning well across the selected departments.

The study revealed that supply chain performance was indeed affected by the implementation approach across the various departments chosen for the study. Although respondents presented that they had a fair knowledge of the PPPFA, it was noted that training was lacking, as almost 30% of the respondents indicated that they had not received adequate training.

The literature study indicated that a gap still existed between policies and implementation and that most SCM officials have not fully grasped the implementation requirements of the PPPFA. The results of the survey indicated that more senior personnel were involved in the implementation process and that about 28% of the respondents had not received adequate training. It was further revealed that there was no clarity on the regulations, seen primarily in the 2017 amendments to the PPPFA. It further highlighted the need for supply chain performance to be measured in the public sector as the sector consists of a larger portion of government spending.

The study further revealed that there are still challenges in the implementation of the PPPFA, which impact supply chain performance. The empirical study also revealed that the implementation of the PPPFA was the responsibility of medium and senior management, indicating that there was a need to involve and train junior personnel to equip them with PPPFA knowledge.

The study did, however, reveal that preferential procurement was effective in most government departments, although it was noted that government departments were still faced with a lot of challenges in the implementation of SCM processes and procedures (Selemo & Govender, 2018). It was recommended that government departments need to transform SCM practices in order to improve SCM performance. Fourie and Malan (2020) recommended reform and upgrading of public procurement systems locally and across the globe.

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Appendix A- Letter of Consent



NWU BUSINESS SCHOOL

Private Bag X6001

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Tel: 018 299 1406

<http://commerce.nwu.ac.za/business-school>

Email: beatahmasi@gmail.com

11 May 2020

CONSENT LETTER FOR PARTICIPATION IN A RESEARCH STUDY

I volunteer to participate in a research study conducted by Miss B Sibanda from the NWU Business School. I understand the research study is designed to gather information on in a study titled “The effects of preferential procurement on supply chain performance in selected Gauteng government departments” as a requirement for an MBA degree which is purely for academic purpose and nothing else.

1. My participation in this study is voluntary. I understand that I will not be paid for my participation. I may withdraw my participation at any time in the process without penalty. If I decline or withdraw my participation from the study, no one will be told.
2. I understand that most of the questions I will find are easy to answer. However, if I feel uncomfortable in any way during the answering of the questionnaires, I have the right to decline to answer any questions and withdraw my participation.
3. No human tissue, blood test or any other activities that may result to physical, psychological damage to respondents or participants is involve in this study.
4. Participation involves answering questions in the form of questionnaires or interview from the North West University Business School. The exercise may last between 10-20 minutes.
5. I understand that the researcher will not identify me by name in any reports using information obtained from this research, and that my confidentiality as participants/respondents in this research will remain protected. Subsequent uses of records

and data will be subject to standard data use policy which protects the anonymity of individual and institution.

6. I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this research study.

7. I have been given a copy of this concern form

Signature Respondent/participant Date

Signature Investigator/researcher Date

Appendix B: Request to conduct a study



NWU BUSINESS SCHOOL

Private Bag X6001

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Web: <http://www.nwu.ac.za>

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<http://commerce.nwu.ac.za/business-school>

Email: beatahmasi@gmail.com

11 May 2020

The Head of Department

Gauteng Government Department

Dear Sir/Madam

Re: REQUEST TO CONDUCT A STUDY IN YOUR DEPARTMENT

This letter serves to request for permission to conduct a study in your Department. I am an MBA student at the North West University Business School. As part of the requirements for the fulfilment of my degree, it is required that I conduct a research and complete a dissertation.

I am therefore conducting research in the following title:

“The effects of preferential procurement on supply chain performance in selected Gauteng Government Departments.”

The results and the findings of the study will be used solely for the purpose of my studies and information will not be shared with third parties who are not part of the study. Participants will be requested to complete a consent form as proof that they participated in the study willingly. The information obtained will be treated with utmost confidentiality and anonymity at all stages of the study. The required information will be obtained using questionnaires which the participants will access through survey monkey.

I hope you will find this in order. Please do not hesitate to contact the university on the above contacts should you require to confirm any information. Alternatively, you can email my supervisor at tshikovhin@gmail.com.

I have attached my proof of registration as proof that I am a registered student of the above institution.

Yours Sincerely

Beatah Sibanda

073 946 5501

Appendix C- Questionnaire



Private Bag X6001, Potchefstroom South Africa 2520

Web: <http://www.nwu.ac.za>

NWU BUSINESS SCHOOL

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<http://commerce.nwu.ac.za/business-school> Email: beatahmasi@gmail.com

12 May 2020

QUESTIONNAIRE

Questionnaire number: __

APPENDIX C: SURVEY

QUESTIONNAIRE-MBA Mini-dissertation

Thank you for participating in this research. My name is Beatah Sibanda, a Master of Business Administration student at the North West Business School. This questionnaire forms part of my master's dissertation titled "The effects of preferential procurement on supply chain performance in selected Gauteng Government Departments". The purpose of the study is to obtain the perceptions of government departments on preferential procurement.

Your cooperation and participation are much appreciated. Please take note that your name is not required nor is it requested; hence confidentiality is assured. The questionnaire should only take up to 10 minutes of your time.

General Instructions

The following instructions and conditions must be understood by all respondents before answering the questions:

- (a) Specific instructions for each section are provided
- (b) When evaluating the questions, please view the answer from your own perspective;
- (c) Please complete all sections, and do not leave any questions unanswered;
- (d) You are requested to apply the scale provided for each of the questions;
- (e) Please answer questions as honestly as possible.

Thank you,

Beatah Sibanda

North West University Business School

Cell: 073 946 5501

Email: beatahmasi@gmail.com

Supervisor: Dr N Tshikovhi,

Email: tshikovhin@gmail.com

SECTION A

In this section, please indicate the extent to which you agree or disagree with each of the following statements. You may indicate your answer by placing a cross (x) in your selected response, using the scale:

(1) = Strongly Disagree

(2) = Disagree

(3) = Neutral or Not Decided

(4) = Agree

(5) = Strongly agree

<i>Preferential Knowledge</i>	Strongly Disagree (1)	Disagree (2)	Neutra l (3)	Agree (4)	Strongly Agree (5)
I am familiar with the Preferential Procurement Policy Framework Act (PPPFA).	1	2	3	4	5
The PPPFA is straightforward and easy to understand.	1	2	3	4	5
My organisation uses the PPPFA in the evaluation of tenders.	1	2	3	4	5
I have received adequate learning and training on how the PPPFA.	1	2	3	4	5
I understand how the PPPFA should be implemented.	1	2	3	4	5

The calculation of points to be awarded to bidders for price quoted on the bid and allocation of points for BBBEE is straightforward.	1	2	3	4	5
My organisation keeps up to date with changes in legislation and all changes or updates are communicated timely.	1	2	3	4	5
The supply chain regulations are consistent with the PPPFA.	1	2	3	4	5
Suppliers always understand the PPPFA requirements.	1	2	3	4	5
Sometimes I do not understand how the PPPFA is to be applied.	1	2	3	4	5
Sometimes my organisation does not comply with the requirements of the PPPFA.	1	2	3	4	5

The following questions will be guided by the paragraph below:

The regulation states that if feasible to contract above R 30 million, an organ of state must apply subcontracting to advance designated groups. Notwithstanding the minimum 30% compulsory sub-contracting provision, institutions may identify procurement opportunities for participation of designated groups in contracts or projects below R30 million.

The department can always identify situations where it is feasible or not feasible to subcontract.	1	2	3	4	5
The department understands whether the minimum 30% to be subcontracted relates to scope of work or price.	1	2	3	4	5
SECTION B					
Supply chain performance					
PPPFA improves the tendering process.	1	2	3	4	5
PPPFA Improves the appointment of suppliers.	1	2	3	4	5
Suppliers always meet the requirements of the PPPFA.	1	2	3	4	5
Suppliers awarded the contracts in terms of the highest points always perform as expected.	1	2	3	4	5
The department always conducts a market analysis to be obtain a	1	2	3	4	5

market related price before advertising a tender.					
The tender processes to be followed by the department are straightforward and always done on a timely basis.	1	2	3	4	5
The implementation of the PPPFA is the cause of poor supply chain performance.	1	2	3	4	5
<p>The following questions will be guided by the paragraph below:</p> <p>Prequalification must be used in identified tenders to advance designated groups on the basis of B-BBEE Status Level of contributor, EME or QSE or on the basis of subcontracting with EMEs or QSEs which are 51% owned by either of the following: Blacks; Black Youth; Black Women; Black people with disabilities; Black people living in rural or underdeveloped areas or townships; cooperatives owned by Black people; Black people who are Military Veterans.</p>					
The process of identifying suppliers in these categories is always easy.	1	2	3	4	5
The department always performs market research and Industry analysis to identify sectors that need advancement of designated groups.	1	2	3	4	5

In selecting the designated group to be advanced, it is always possible to verify the number of enterprises in the industry to determine if there will be sufficient competition.	1	2	3	4	5
There are always suppliers for all goods/services required who meet the above criteria.	1	2	3	4	5
Suppliers in those categories are able to do the work and deliver on time.	1	2	3	4	5
Sometimes the process for appointing a supplier is delayed by the above requirement.	1	2	3	4	5
When all suppliers who bid do not meet the prequalification process, the department can make an exception and promote all bidders to the next evaluation stage.	1	2	3	4	5
When tenders are cancelled because a suitable supplier was not found, service delivery is delayed.	1	2	3	4	5
Supply chain performance targets are not met when tenders are cancelled.	1	2	3	4	5

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