



Supply chain performance and preferential procurement in Gauteng government departments



Authors:

Beatah Sibanda¹ 
Ndivhuho Tshikovhi² 

Affiliations:

¹School of Accounting Sciences, Faculty of Economic and Management Sciences, North-West University, Potchefstroom, South Africa

²Department of Research, Innovation and Engagement, Office of the Deputy Vice-Chancellor, Durban University of Technology, Durban, South Africa

Corresponding author:

Beatah Sibanda,
beatahmasi@gmail.com

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Background: In the previous two decades, preferential procurement and supply chain performance have gained popularity within academics following the introduction of the *Preferential Procurement Policy Framework Act* No 05 of 2000 (PPPFA) which was aimed at providing opportunities in government supply chain contracts to previously disadvantaged groups. Despite PPPFA being a corrective measure, research has brought to light the abuse and manipulation in the implementation of this Act by government officials trusted with this function. The study aims to determine how supply chain performance is affected by preferential procurement within selected Gauteng government departments.

Objectives: The objectives of the study were twofold: First to determine how supply chain performance is influenced by preferential procurement and the effect of management levels on the implementation of PPPFA, and secondly to determine the effect of the implementation of preferential procurement on supply chain performance within selected government departments.

Method: Through a quantitative research approach, data were collected using close-ended questionnaires in the form of a five-point Likert scale and a stratified random sampling technique. The Statistical Package for the Social Sciences (SPSS) software was used to analyse data through descriptive and inferential statistics.

Results and conclusion: The study revealed that preferential procurement had an impact on supply chain performance in the selected departments which could be pinned mainly to the gap between policies and implementation. Although preferential procurement was generally applied across the departments, it was noted that some officials within supply chain management had not fully understood the implementation requirements of the PPPFA.

Keywords: supply chain management; preferential procurement; supply chain performance; public procurement; BBBEE; PFMA.

Introduction

Preferential Procurement Policy Framework Act No 05 of 2000 (PPPFA) was introduced by the South African government with the aim of advancing previously disadvantaged groups who could not participate in government contracts (Selomo & Govender 2016). The act was aimed at creating opportunities that could close the gap created by the previous regime which limited equal opportunities in government procurement (Hlakudi 2015). Up until 1994, established contractors who formed a minority of the population received preference in government supply chain contracts as per the apartheid regime, creating discrimination against the larger population who could not meet these requirements (Ambe & Badenhorst-Weiss 2012).

To reduce the inequality gap, the PPPFA was then introduced to provide equal opportunities in government contracts to previously disadvantaged black-owned South African businesses in the procurement process (Hlakudi 2015). The principle has its roots in the Constitution of the Republic of South Africa Anon (2012), and is reflected in the affirmative action, a system that consists of rigorous efforts by employers to create employment and promotion opportunities to previously discriminated groups in the work environment (Van Rensburg et al. 2015). This resulted in procurement reforms, which encouraged organs of state to promote the advancement of previously disadvantaged individuals in the issuing of government contracts (Constitution of the Republic of South Africa 1996). As per Ambe and Ngcamphalala (2016), the procurement function was independent across all provinces, but this resulted in inconsistencies as identified by the National Treasury which is responsible for issuing all instructions relating to the Supply Chain Management (SCM) function and ensuring that procurement is in line with the *Public*

Finance Management Act No 01 of 1999 (PFMA), PPPFA and other regulations applicable to SCM. This resulted in the introduction of the SCM framework with the objective of creating uniformity within procurement divisions. These regulations then create a set process of how procurement should be conducted within government departments. The objectives of the study were achieved through an empirical study and a detailed literature review on previous challenges faced by government departments in the application of the PPPFA and how these challenges affected supply chain performance.

Problem statement

Government departments have seen negative results in supply chain performance over the years, for instance, the defence, correctional services, health, police and others, some of which can be traced to preferential procurement (Selomo & Govender 2016). Since the 2008 and 2009 financial year, South Africa has experienced an upward trend in irregular expenditure which over the 10-year period reached an estimated R390 billion, with irregular expenditure at national and provincial government increasing from R1 billion in 2008 and 2009 financial year to R51 billion in 2017 and 2018 (Makwetu 2019). The 2018 and 2019 findings of the Auditor-General South Africa (AGSA) revealed that irregular expenditure increased from 72% to 81%, and this could be traced to inefficient SCM systems (AGSA Consolidated General Report 2018). In the 2019 and 2020 financial year, out of all the audited entities, only 42% demonstrated good internal controls, while the rest reported poor record-keeping of documents to support transactions, increased irregular expenditure and lack of accountability (Consolidated General report on national and provincial audit outcomes, PFMA 2019-2020). Despite PPPFA being aimed at closing the inequality gap and correcting a system that previously favoured a few minorities of the population, there has been evidence of abuse and manipulation of the system by officials within government departments who seek self-interest (Hlakudi 2015). Additional examples can be found in the recent state capture reports.

Ambe and Maleka (2016) indicated that poor implementation of policies such as the PPPFA were some of the root causes of service delivery problems, leading to poor supply chain performance. According to Agyepong and Nhamo (2015), there is still a gap between the PPPFA and its implementation in the government supply chain, implying the PPPFA is either incorrectly applied or misunderstood altogether.

The study was guided by the following research questions:

- How does the implementation of preferential procurement affect supply chain performance within the selected government departments?
- How do management levels influence the implementation of the PPPFA?

Research objectives

- To determine the effect of the implementation of preferential procurement on supply chain performance within the selected government departments.
- To determine how levels of management influence the implementation of the PPPFA within the selected government departments.

Literature review

Public procurement contributes largely to public spending and has a substantial impact on demand for any economy. Public procurement is regarded as a major part of the economy, while public spending represents an important indicator of government efficiency (Fourie & Malan 2020).

In any country, public spending is a major indicator in evaluating government spending through its significant role in measuring public service delivery. In the public sector, the procurement function is a unit of the political system, and the South African public procurement continues to face challenges despite all efforts by the government in procurement reforms leading to criticisms of the procurement function (Fourie & Malan 2020). Even though preferential procurement was aimed at, among others, addressing inequalities of the past, Munzhedzi (2016) reported quandaries including non-compliance to the PPPFA, tender irregularities and public servant negligence in applying the PPPFA within the public sector. This was confirmed by Hlakudi (2015) who indicated that challenges in the implementation of PPPFA included non-compliance to the procurement system, limited knowledge of the preferential procurement targets, and fraud and corruption.

Theoretical framework

A theoretical framework describes a combination of definitions, concepts and existing theories used by researchers to support a particular study. Grant and Osanloo (2014) described a theoretical framework as a blueprint that serves as a guide on which to build or support the study. The theory that justifies the PPPFA is the organisational theory as supported by previous studies of Shai, Molefinyana and Quinot (2016). The organisational theory is believed to explain how the social phenomenon occurs within organisations by focusing on the need to create diverse organisational theories in response to changes within the organisation (Christensen, Lægheid & Rovik 2020).

Public procurement

Procurement refers to the process of acquiring contracts concerning the provision of goods, services or engineering and construction works (Hlakudi 2015). The purchasing of goods and services required by the government and other organs of the state is referred to as public procurement (Mantzaris 2014). Procurement is a critical socio-economic

function regarded by the National Treasury as the government's commitment to the well-being of South Africans in contributing towards the economic growth of the country (Ambe & Maleka 2016).

Previously, public procurement in South Africa was an independent function in the different provinces until the National Treasury intervened to reduce inconsistencies in practices that were followed by the different provinces. This led to the development of the SCM framework, guided by the PFMA – aimed at reinforcing with the focus of creating uniformity in the procurement divisions – through setting regulations and processes that would guide the procurement process (Ambe & Ngcamphalala 2016). The centralised governance system is criticised and referred to as a system inherent of negative effects, which could hinder service delivery (Meyer & Auriacombe 2020). However, the South African Constitution remains the main guideline for what the procurement process entails.

The Public Finance Management Act

The Act governing all practices of public financial management in South Africa is the PFMA, 1999 (Act No. 01 of 1999), which provides a regulatory framework to guide national and provincial SCM, and all state-owned enterprises, to ensure that all revenue, expenditure, assets and liabilities of those governments are managed efficiently. The Act is based on five constitutional principles as stated in the Constitution of the Republic, which requires an effective procurement system to be 'fair, equitable, transparent, competitive and cost-effective' (Hlakudi 2015).

Preferential Procurement Policy Framework Act

The purpose of the PPPFA is to provide guidance on the implementation of preferential procurement policies (Munzhedzi 2016). This act was the first to be introduced under the custodianship of the National Treasury legislative in response to the statute for a procurement intervention (Shai et al. 2019).

It uses a point system in the awarding of government contracts, awarding points for price and *Broad-Based Black Economic Empowerment (BBBEE)* (Hlakudi 2015), based on the bidders' BBBEE status level, as determined by a code of good practice issued in terms of Section 9 (1) of the *BBBEE Act 53* of 2003 (Quinot 2018). Although there is guidance on how the PPPFA should be implemented, evident implementation challenges are arising from inconsistencies between the PPPFA and the *BBBEE Act* (Hlakudi 2015).

Challenges associated with the Preferential Procurement Policy Framework Act

Despite the PPPFA providing guidance on the implementation process, organs of the state continue to face challenges in the implementation thereof. Research has revealed obstacles faced by supply chain officials in implementation of the PPPFA (Selomo & Govender 2016) and

it was further noted that there were unfair procurement practices in the implementation process where preferential points were not applied, or incorrect preferential point systems and thresholds were applied (Fourie & Mazibuko 2019).

Despite legislation that guides the ethical conduct of the procurement process, corruption remains a major threat in public procurement (Fourie 2015). Another contributing factor hampering effective implementation of the PPPFA is negligence by public servants which results in adverse effects in the supply chain process (Munzhedzi 2016). Hlakudi (2015) indicated that most companies engaging with the government do so fraudulently by claiming preferential points they do not deserve. Furthermore, it has been reported that most government officials within the government departments were not familiar with the preferential procurement targets. Despite the procurement processes having improved with time, there is still a gap with respect to monitoring and evaluation of the policies (Shai et al. 2019).

As mentioned by Adediran and Windapo (2016), the adoption of preferential procurement policies as a tool for contractor development was referred to as targeted procurement. Their study further indicated that the application of targeted procurement practices created larger participation in government contracts by Small and Medium Enterprises (SMEs) improving their chances of being awarded government contracts and promoting previously disadvantaged groups. However, this led to unequal distribution of opportunities through favouring certain groups of the population over others (Van Rensburg, McConnell & Brue 2015). Therefore, this study focused on how these preference criteria impacted on supply chain performance by focusing on the implementation process.

Supply chain performance

Supply chain performance refers to a monitoring process undertaken by an organisation to determine whether the prescribed processes of a supply chain system have been followed and the desired objectives have been achieved (Mhelembe & Mafini 2019). Supply chain performance has become a critical issue in today's competitive business environment both in public and private sectors as it is regarded as a key element for the measurement of effective SCM, and this has led to the development of several systems and frameworks as monitoring tools (Balfaqih et al. 2016). Although there are measures in place, the focus is largely on financial measures, neglecting non-financial measures such as the implementation of policies, and quality of service delivery (Rana & Sharma 2019). It is important for government departments to assess their SCM performance to determine the efficiency and effectiveness of their operations (Chandak, Chandak & Delpati 2019).

For government departments to achieve strategic competitiveness over the private sector, it is important for them to implement proper supply chain practices and be able to measure the overall supply chain performance (Chandak et al. 2019). Measuring supply chain performance is crucial in government departments and all other entities

as it leads to better SCM and overall performance (Hove-Sibanda & Poee 2018).

The public sector spends a significant amount of money on payments to suppliers and contractors responsible for the provision of goods and services (Scott 2016). In applying a preferential system as prescribed by PPPFA, suppliers who attain the highest points for BBBEE and price should be considered first in the allocation of contracts. Although this is aimed at providing fairness and balance in the selection of service providers, it increases risks in the supply chain process, including inconsistencies in the application of the PPPFA (Mhelembe & Mafini 2019).

Previous studies have revealed that a gap still exists between policies and implementation in that supply chain officials faced challenges especially in the implementation of the PPPFA (Hlakudi 2015; Munzhedzi 2016). There are concerns of clarity on the SCM regulations, which result in challenges for those assigned with implementation roles. This creates the need for supply chain performance in government departments to be measured as it contributes to a larger portion of government spending. The findings of the study revealed that the challenges in the implementation of the PPPFA had an adverse impact on supply chain performance.

The following hypotheses were formulated for the study:

H1: The implementation process of preferential procurement affects supply chain performance.

H2: Management levels have an influence on the implementation of the PPPFA.

Research methodology

A quantitative research technique was adopted using the cross-sectional approach which implies collection of data at a single point in time. The population for the study was the different government departments in Gauteng Province. As a result of the coronavirus disease 2019 (COVID-19) restrictions, only four departments were selected for the study, namely, the agriculture and rural development, education, sports, art and culture, and economic development. The selection criteria were based on accessibility to the departments because of the imposed COVID-19 restrictions. The sampling method followed a probability sampling approach using the stratified random sampling method.

The use of a stratified random sampling approach, a sampling method where members of the target population are put into strata and randomly selected from each stratum for inclusion (Etikan, Musa & Alkassim 2016:2), was considered appropriate because it ensured that all levels of management were included. An estimated population of 180 government officials was involved in the procurement process in the government departments selected for the study. As per Krejcie and Morgan (1970), a population of 180 requires a sample size of 123, which was the minimum expected number from the questionnaires distributed.

TABLE 1: Response rate of the sample.

Item	Number
Procurement officers within the selected departments	<i>N</i> = 180
Questionnaires administered to officers	<i>n</i> = 123
Total responses received	105
Non-usable responses	0
Total usable responses	105
Usable responses rate	85.4%

N, Target population; *n*, Sample size.

TABLE 2: Level of employment.

Variable	Category	Frequency	%
Level of employment	Entry 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

Four government departments in Gauteng were selected for the study, and participants were chosen based on their involvement in the supply chain process. Prior to the study, permission was sought from supply chain officials in the selected departments to participate in the study. Thus, participants were randomly selected for each stratum.

To ensure voluntary participation, respondents had to sign a consent form prior to the study. Electronic questionnaires were used for data collection and were administered through Google Forms, an electronic platform for administering surveys. The choice of self-administered questionnaires was considered less costly and quicker to obtain data as respondents could complete questionnaires at their own convenience and without the influence of the researcher.

The questionnaire in the form of a 5-point Likert scale consisted of two sections: Section A, which focused on preferential procurement, and Section B, which focused on supply chain performance. Responses in the questionnaire were in the form of a 5-point Likert scale (The responses were rated from 1 to 5 as follows: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). A pilot study was conducted at the department of e-government on selected government officials prior to the actual study to assess the rigour of the research design. To test the reliability of the questionnaire, Cronbach's alpha test was used. As per Chandak et al. (2019), a Cronbach's alpha of more than 0.7 indicates that data are reliable and consistent.

One hundred twenty-three questionnaires were distributed in total, and the response rate is summarised in Table 1.

Results and findings

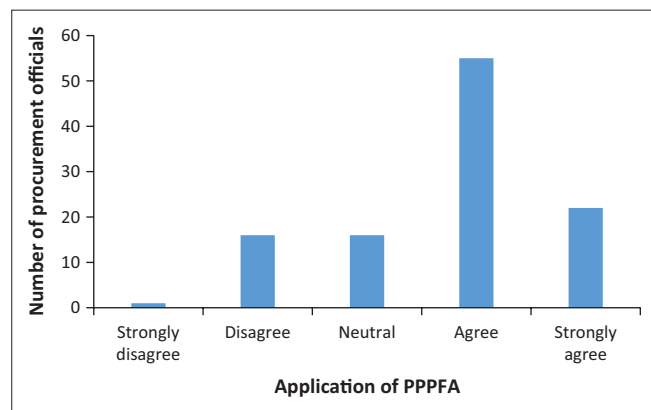
Demographics

In collecting data, respondents were required to indicate their level of employment as shown in Table 2.

TABLE 3: Application of *Preferential Procurement Policy Framework Act*.

Statement	Level of agreement										Mean
	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		
	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	
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

PPPFA, *Preferential Procurement Policy Framework Act*.



PPPFA, *Preferential Procurement Policy Framework Act*.

FIGURE 1: Application of *Preferential Procurement Policy Framework Act*.

Figure 1 depicts that an estimated 70% of respondents agreed that PPPFA was applied in their departments, while 14.6% were neutral and 15.5% disagreed. Table 2 shows that 61.9% of the respondents were in the middle to top levels of management, while 38.1% were either clerks or junior management. This implies that officials at senior levels are more involved in the implementation of the PPPFA.

Exploratory factor analysis of the effect of preferential procurement on supply chain performance

The questionnaire consisted of 29 questions on issues involved in the implementation of the PPPFA. Exploratory factor analysis was done to group the responses 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 because it was loading on two factors, and as such was not included in the data analysis. A Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy of 0.854 was obtained, which is greater than 0.5, 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 0.001 ($p < 0.001$), indicating that the null hypothesis of lack of sufficient correlation between variables was being rejected. The results from both tests were significant, and one could proceed with the analysis. The factor solution was robust because 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. Cronbach's alpha coefficient was used to examine the unidimensional nature of the instrument and the reliability of the whole instrument was excellent, as supported by a Cronbach's alpha of 0.904, thus

indicating that the instrument was appropriate for further data analysis.

The application of PPPFA was measured using seven questions (i.e., question 1, 2, 4, 5, 6, 7 and 8 as per the questionnaire in the annexure) which were related to the respondents' understanding and ability to apply the PPPFA in the evaluation of tenders. All the responses obtained from the questions had levels of agreement of more than 50% and a mean of at least 3.5, indicating that the respondents agreed that they had knowledge of the PPPFA and that they needed to apply it in the evaluation of tenders; 86.3% agreed that they are familiar with the PPPFA, with a mean of 3.98. 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%, as illustrated in Table 3, yielding a mean of 3.77.

Hlakudi (2015) identified some challenges in the implementation of preferential procurement, together with inconsistencies between the PPPFA and the *BBBBE 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, as results proved participants faced no challenges in this regard. The results of this survey proved that the respondents were comfortable with the implementation of the PPPFA.

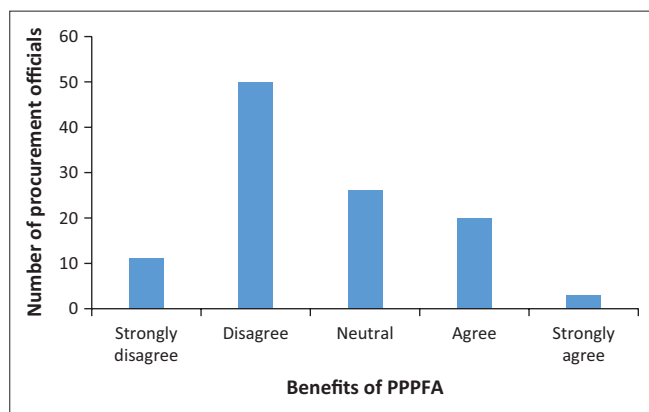
The above figure indicates that almost 70% of the respondents agreed that they had knowledge of the PPPFA and that they needed to apply it in the evaluation of tenders, while 14.6% were neutral and 15.5% disagreed. Because the responses were highly correlated, a composite variable was formed by averaging the seven items. An average mean of 3.74 was obtained, and the standard deviation was 0.96. The mean is close to four, indicating that majority of the respondents agreed that they had knowledge of the PPPFA and that they needed to apply it in the evaluation of tenders.

Majority of the respondents believed that there were no benefits derived from the implementation of the PPPFA, while 53.6% of the respondents disagreed that the PPPFA improves the tendering process, with a mean of 2.78. Another 53.6% of the respondents disagreed that the PPPFA improved the appointment of suppliers, with a mean of 2.71. In responding to whether suppliers awarded the contracts in terms of the highest points always performed to the desired

TABLE 4: Benefits of the *Preferential Procurement Policy Framework Act*.

Statement	Level of agreement										Mean
	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		
	%	n	%	n	%	n	%	n	%	n	
Q 14. PPPFA improves the tendering process.	8.2	9	28.2	31	10.0	11	40.9	45	12.7	14	2.78
Q 15. PPPFA improves the appointment of suppliers.	7.3	8	29.1	32	10.0	11	34.5	38	19.1	21	2.71
Q 17. 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

PPPFA, *Preferential Procurement Policy Framework Act*.



PPPFA, *Preferential Procurement Policy Framework Act*.

FIGURE 2: Benefits of *Preferential Procurement Policy Framework Act*.

expectations, 52.7% disagreed, while 14.5% were neutral and 32.7% agreed, with a mean of 2.70. The above information is summarised in Table 4.

About 61.9% of the respondents disagreed that suppliers always understood the PPPFA requirements, while 10% neither agreed nor disagreed, 28.2% agreed, and the mean was 2.47; 70% of the respondents disagreed that suppliers always met the requirements of the PPPFA, while 10.9% of the respondents were neutral, with only 19.1% agreed, giving it a mean of 2.20. As shown in Figure 2, the results indicate that most of the respondents do not see PPPFA as a benefit.

Failure to comply with *Preferential Procurement Policy Framework Act* requirements

The literature reviewed revealed limitations to the supply chain performance which could be traced mainly to poor reporting, failure to comply with PPPFA requirements and progress tracking of contacts. From the results it was noted that 44.6% agreed that the implementation of the PPPFA was the cause of delays and poor supply chain performance; 14.5% of the respondents were neutral in this regard, while 40.9% disagreed on the issue, and the mean was 3.01. When respondents were asked if they always understood how PPPFA should be applied, 46.3% agreed, 5.5% were neutral, while 48.1% disagreed, and the mean was 2.95. In response to whether respondents sometimes failed to comply with the PPPFA, 35.5% of the respondents agreed while 30% neither agreed nor disagreed, and 34.6% disagreed. The proportions indicate that the respondents had mixed reactions in responding to the question as depicted in Figure 3.

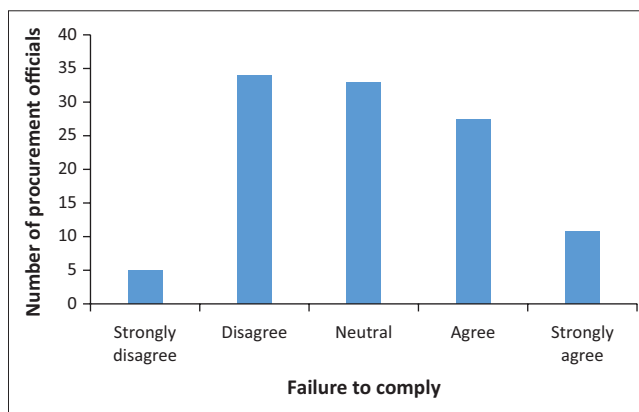


FIGURE 3: Failure to comply.

Subcontracting

Two questions were used to obtain data on subcontracting by focusing on whether respondents understood the subcontracting requirements. From the responses, 64.5% of the respondents agreed that they understood what the subcontracting requirements entailed, while 7.3% were neutral and 28.2% disagreed, with a mean of 3.41; 60.9% of the respondents agreed that the department could always identify the feasibility of subcontracting, while 7.3% were neutral, and 31.9% disagreed, with the mean being 3.33. It could be noted that most of the respondents agreed on understanding the subcontracting requirements, although almost 40% disagreement implies that SCM regulations on subcontracting should be revised to provide clarity on the sub-contracting requirements.

Supply chain performance

Supply chain performance was also assessed using seven questions (i.e., questions 18, 19, 21, 22, 23, 24, and 25 as per the questionnaire in the annexure). From the responses, 43.6% indicated that most suppliers selected according to the preferential criteria could do the work and deliver on time while 26.4% were neutral, and 30% disagreed, with a 3.11. In responding to the question on whether it was always easy to identify suppliers in the categories prescribed by the PPPFA, 53.6% of the respondents agreed while 4.5% were neutral, and 41.8% disagreed, with a mean of 3.04. In responding to the straightforwardness of the tender process, about 50% of the respondents agreed that the tender processes were straightforward and always done on a timely basis, while 7.3% of the respondents were neutral and 42.8% disagreed to the question, with a mean of 3.

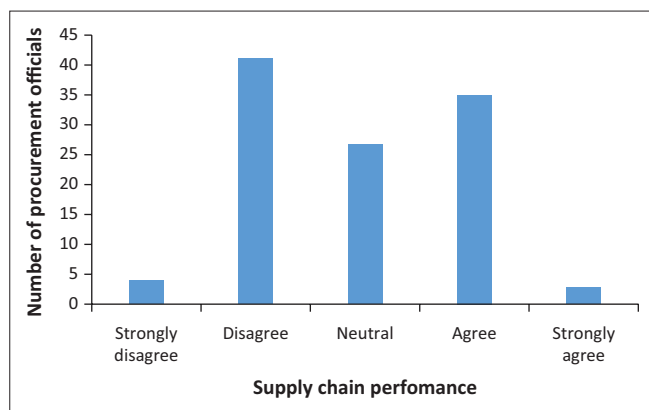


FIGURE 4: Supply chain performance.

The PPPFA requires that departments conduct a market analysis prior to the advertising of tenders. From the data collected, 53.7% of the respondents disagreed that their departments always conducted a market analysis while 4.5% were neutral and 41.8% agreed, with a mean 2.79, indicating that departments did not always conduct a market analysis, suggesting that tenders could be awarded at non-market-related prices, a price that is not market-related; 34.6% agreed on issues on supply chain performance, 24.6% were neutral and 40.9% disagreed. As depicted in Figure 4, most of the respondents were not entirely satisfied with the supply chain performance in relation to PPPFA.

Management levels

Management levels were divided into two groups, that is, clerical or junior position and middle to top management. Independent *t*-test applied to these groups revealed a significant difference between junior levels and middle to top management in the application of the PPPFA, with $t(66.482) = 4.809, p < 0.001$. The mean for junior positions ($M = 3.16, SD = 1.01$), was significantly lower than that of middle to top management ($M = 4.07, SD = 0.77$). The 95% confidence interval for the application of the PPPFA ranged from -1.28 to -0.53 . The magnitude of the difference in the means was of significant, as evidenced by an eta-squared = 0.18 ($\eta^2 = 0.18$). Both means were close to 3, implying that both groups were neutral on the effect of preferential procurement on supply chain performance.

The univariate analysis of variance results revealed that the effect of levels of management on the application of PPPFA was statistically significant [$F(4.100) = 19.175, p < 0.001$]. A large effect size, $\eta^2 = 0.43$, was obtained, and an estimated 43% of the variation in the application of PPPFA was attributed to differences between management levels.

Supply chain performance had a statistically significant positive correlation with the application of PPPFA ($r = 0.425; p < 0.001$), benefits of the PPPFA ($r = 0.556; p < 0.001$) and sub-contracting ($r = 0.537; p < 0.001$). The correlations are of medium effect, large effect, and large effect respectively. Application of the PPPFA had a statistically significant positive correlation with benefits of PPPFA ($r = 0.310; p < 0.001$), failure to comply ($r = 0.229; p < 0.05$), and sub-

contracting ($r = 0.464; p < 0.001$). 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.

The regression model was significant ($F[5.104] = 17.658, p < 0.001$) with an adjusted coefficient of determination, $R^2 = 0.433$. Benefits of the PPPFA and sub-contracting were significant at the 5% level, while applications of the PPPFA were significant at a level of 10%, all with a positive effect. At a level of significance of 10%, supply chain performance increased by 0.138 for each increase of one unit in the application of the PPPFA ($B_1 = 0.138; p = 0.094$). The application of PPPFA contributes to the prediction of supply chain performance at the 10% level of significance.

Discussion of results

The findings of the study revealed that preferential procurement was generally applied across the selected departments, with the respondent indicating their familiarity and understanding of the implementation criteria as respondents indicated that they found the preferential Act simple, straight, and easy to understand. The results showed that most of the 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 believed the PPPFA was not beneficial to the procurement process, with 44.6% of the respondents suggesting that poor supply chain performance was caused by the implementation of PPPFA. There were mixed feelings from respondents regarding the compliance to PPPFA requirements, although most of the respondents agreed that their departments did not always conduct a market analysis to obtain a market-related price as required by the PPPFA. Management levels had an impact on the implementation of the PPPFA as it was noted that middle management and senior management were more involved in the implementation process. Training is recommended for junior management to ensure that they are rightfully skilled in the PPPFA requirements.

Implementing the PPPFA at the medium and senior management levels could mean a lack of delegation by management or inadequate training for lower-level management. The ability to delegate and adequate training of staff could ease pressure from management allowing them to focus on strategic and corporate issues of the organisation. The findings of the study were suggestive of inefficient use of resources as some respondents indicated that their departments did not always conduct a market analysis to determine a market-related price, implying that departments could be procuring goods and services that are not cost-effective, which could be detrimental to the functioning of the departments.

Recommendations and future studies

The study focused on the effect of the implementation of PPPFA on supply chain performance. The findings of the

study could be used to inform other government departments on how to effectively implement the PPPFA. The results could also serve as a guide for the National Treasury to review the PPPFA and related SCM regulations such as the *State Information Technology Act*. Continuous training should be provided to procurement officials to ensure that knowledge is aligned to developments in the PPPFA. For this to be achieved, an ongoing review and evaluation of the implementation of the PPPFA could be conducted through monitoring supply chain performance on a regular basis. Moreover, changes and updates to SCM policies should be communicated timely to ensure that all departments are up to date with any policy changes. The preferential point system could be revisited, and points not only awarded in terms of price and BBBEE but to include other factors which impact directly on performance.

Future studies could focus on other departments outside the Gauteng Province, municipalities, and other state-owned entities, as they conduct their procurement in a manner like that of government departments.

Conclusion

The objectives of the study were two-fold: one was to determine the effect of the implementation of preferential procurement on supply chain performance, and the other was to determine the effect of the implementation of preferential procurement on supply chain performance within the selected government departments. Although the literature review indicated challenges in the implementation process, the findings of the study revealed that the preferential procurement process was generally functioning across the selected departments, although challenges were noted in the implementation process of the PPPFA, which impact supply chain performance. The study revealed that preferential procurement was effective in most government departments, although it was noted that government departments were still faced with many challenges in the implementation of SCM processes and procedures as noted by Selema and Govender (2018). It is recommended that government departments revise their SCM practices by making use of technology to improve SCM performance. Fourie and Malan (2020) recommended reform and upgrading of public procurement systems locally and across the globe as this could enhance supply chain performance.

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Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

B.S. wrote this article with the support of N.T. who played a supervisory role.

Ethical considerations

Ethical clearance was obtained from the North-West University before conducting the study (NWU-00673-20-A4).

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Data availability

All raw data used in this study are available upon request by any interested parties for academic purposes.

Disclaimer

The views and opinions expressed in this article are only from a scholarly perspective, and thus, all conclusions are from a scholarly view.

References

- Adediran, A. & Windapo, A.O., 2016, 'Evaluating the impact of public sector targeted procurement strategies on the development of SMEs in the construction industry', in *Proceedings of the 9th CIDB Postgraduate Conference*, Cape Town, February 02–04, 2016, pp. 526–536.
- Agyepong, A.O. & Nhamo, G., 2015, 'An assessment of green procurement practices in South African Metropolitan Municipalities', *Journal of Public Administration* 50(1), 50–69.
- Ambe, I.M. & Badenhorst-Weiss, J.A., 2012, 'Procurement challenges in the South African public sector', *Journal of Transport and Supply Chain Management* 6(1), 242–261. <https://doi.org/10.4102/jtscm.v6i1.63>
- Ambe, I.M. & Maleka, T., 2016, 'Exploring supply chain management practices within municipalities in the West Rand district', *Problems and Perspectives in Management* 14(3), 657–666. [https://doi.org/10.21511/ppm.14\(3-3\).2016.09](https://doi.org/10.21511/ppm.14(3-3).2016.09)
- Ambe, I.M. & Ngcamphalala T.K., 2016, 'Policies and regulations guiding procurement practices in South African commuter sector', *Journal of Contemporary Management* 13(1), 1204–1224.
- Anon, 2012, *The constitution of the republic of South Africa: 1996: Reflecting the law as at 20 February 2012*, Rev. 11th edn., Juta Law. (Juta's pocket statutes).
- Auditor-General of South Africa, 2018, *Consolidated general report*, Pretoria, viewed 16 December 2020, from <https://www.agsa.co.za/Reporting/PFMAReports/PFMA2018-2019.aspx>
- Balfaqih, H., Nopiah, Z.M., Saibani, N. & Al-Nory, M.T., 2016, 'Review of supply chain performance measurement systems: 1998–2015', *Computers in Industry* 82, 135–150. <https://doi.org/10.1016/j.compind.2016.07.002>
- Chandak, A., Chandak, S. & Dalpati, A., 2019, 'The impact of supply chain strategy and supply chain flexibility on supply chain performance: A study in the Indian context', *IUP Journal of Supply Chain Management* 16(1), 52–69. <https://doi.org/10.26488/IEJ.12.3.1165>
- Christensen, T., Lægred, P. & Rovik, K.A., 2020, *Organization theory and the public sector: Instrument, culture and myth*, Routledge, London.
- Etikan, I., Musa, S.A. & Alkassim, R.S., 2016, 'Comparison of convenience sampling and purposive sampling', *American Journal of Theoretical and Applied Statistics* 5(1), 1–4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Fourie, D., 2015, 'Procurement in the South African public service: A reflection of the ethical and legislative framework', *Public and Municipal Finance* 4(2), 38–45.
- Fourie, D.J. & Mazibuko, G., 2019, 'Manifestation of unethical procurement practices in the South African Public Sector', *African Journal of Public Affairs* 9(9), 106–117.
- Fourie, D. & Malan, C., 2020, 'Public procurement in the South African Economy: Addressing the systemic issues', *Sustainability* 12(20), 8692. <https://doi.org/10.3390/su12208692>
- Grant, C. & Osanloo, A., 2014, 'Understanding, selecting and integrating a theoretical framework in dissertation research: Creating the blueprint for your "house"', *Administrative Issues Journal: Connecting Education, Practice and Research* 4(2), 12–26. <https://doi.org/10.5929/2014.4.2.9>
- Hlakudi, J.N., 2015, 'The implementation of preferential procurement policy in Gauteng province: Challenges and solutions', *Africa's Public Service Delivery & Performance Review* 3(1), 55–73. <https://doi.org/10.4102/apsdpr.v3i1.75>

- Hove-Sibanda, P. & Pooe, D., 2018, 'Enhancing supply chain performance through supply chain practices', *Journal of Transport and Supply Chain Management* 12, 1–13. <https://doi.org/10.4102/jtscm.v12i0.400>
- Krejcie, R.V. & Morgan, D.W., 1970, 'Determining sample size for research activities', *Educational and Psychological Measurement* 30(3), 607–610. <https://doi.org/10.1177/001316447003000308>
- Mantzaris, E., 2014, 'Public Procurement, tendering and corruption: Realities, changes and solutions', *African Journal of Public Affairs* 7(2), 67–79.
- Makwetu, K., 2019, 'Constitutional accountability for public resources: The role of the auditor-general', *Stellenbosch Law Review* 30(3), 318–332.
- Meyer, N. & Auriacombe, C., 2019, 'Good urban governance and city resilience: An Afrocentric approach to sustainable development', *Sustainability* 11, 5514. <https://doi.org/10.3390/su11195514>
- Mhelembe, K. & Mafini, C., 2019, 'Modelling the link between supply chain risk, flexibility and performance in the public sector', *South African Journal of Economic and Management Sciences* 22(1), 1–12. <https://doi.org/10.4102/sajems.v22i1.2368>
- Munzhedzi, P.H., 2016, 'South African public sector procurement and corruption: Inseparable twins?', *Journal of Transport and Supply Chain Management* 10(1), 1–8. <https://doi.org/10.4102/jtscm.v10i1.197>
- Quinot, G., 2018, 'The third wave of preferential procurement regulations in South Africa', *Journal of South African Law/Tydskrifvir die Suid-Afrikaanse Reg* 2018(4), 856–867.
- Rana, K. & Sharma, K.S., 2019, 'Supply chain performance measurement: A scale development', *Journal of Business Strategy* XVI(1), 88–111.
- Scott, A., 2016, *South African reforms in public procurement to save R25bn*, viewed 27 April 2020, from <https://www.cips.org/supply-management/news/2016/february.south-africa-to-reform-public-procurement-processes/>. http://www.igpn.org/news/2016/02/south_africa_reforms_public_pr.html
- Selomo, M.R. & Govender, K.K., 2016, 'Procurement and supply chain management in Government Institutions: A case study of select Departments in the Limpopo province, South Africa', *Dutch Journal of Finance and Management* 1(1), 37. <https://doi.org/10.20897/lectito.201637>
- Shai, L., Molefinyana, C. & Quinot, G., 2019, 'Public procurement in the context of broad-based black economic empowerment (BBBEE) in South Africa – Lessons learned for sustainable public procurement', *Sustainability* 11(24), 7164. <https://doi.org/10.3390/su11247164>
- Van Rensburg, J.J., McConnell, C.R. & Brue, S.L., 2015, *Economics, Southern African Edition*, 2nd edn., McGraw Hill Education, Berkshire

APPENDIX A

Questionnaire.

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 agree
- (2) = Agree
- (3) = Neutral or not decided
- (4) = Disagree
- (5) = Strongly disagree

TABLE 1-A1:

Preferential procurement knowledge	Strongly agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly disagree (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

TABLE 2-A1:

Supply chain performance	Strongly agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly disagree (5)
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 obtain a market-related price before advertising a tender.	1	2	3	4	5
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
The following questions will be guided by the paragraph below:					
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.					
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

Summary

1. The content was structured in such a way that the 2 objectives could not be differentiated.
2. Practical examples will strengthen headings.
3. Reference must be made to the PPR. The author could have used how the regulations evolved since 2000 to address social economic objectives and section 217 (2) of the Constitution.
4. Which departments were selected? Their mandates give substance as to the use of PPPFA and relevance to the focus groups.
5. Transparency with regard to the questions would have assisted in determining if the right (relevant) questions were asked.
6. Sources should include government legislation/ regulations/ instruction notes/ guide documents.
7. Editing needs attention

PPPFA, Preferential Procurement Policy Framework Act; BBBEE, Broad-Based Black Economic Empowerment; QSEs, Qualifying Small Enterprises; EMEs, Exempt Micro Enterprises; PPR, Public Procurement Regulations.