

RESEARCH ARTICLE:

Antecedent Factors of Procurement Performance in the Public Health Sector in the Gauteng Province

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Abstract

Public procurement occupies a key role in government departments and public entities. Supplier selection, a sub-function of procurement, has become one of the elementary roles of procurement managers since it virtually affects any industry's competitiveness. Therefore, selecting suitable suppliers brings substantial benefits to enterprises and increases customer satisfaction. The purpose of this study was to investigate the relationship between supplier selection practices, supplier risk management, supplier commitment, and procurement performance in the public health industry in Gauteng province. The survey material was designed in a structured questionnaire to measure the study constructs. The collected quantitative data were analysed using the SMART-PLS 3 structural equation modelling procedure. The study results showed positive and significant relationships amongst all variables except for one. Supplier risk management had a weak and insignificant connection with procurement performance. The results are essential to the existing literature on procurement performance within public health industries in developing countries such as South Africa. The study concludes by suggesting recommendations for limiting the impact of the identified challenges on procurement performance.

Keywords: *supplier selection; supplier commitment; supplier risk management; procurement performance*

Introduction

Globally, public procurement plays a crucial role in government departments and public entities (Duke and Naude, 2015: 1). The public sector consists of government departments and public entities such as roads and transport services, communication systems, and health services. These entities provide goods or services to the public (Dube and Danescu, 2011: 3) and are provided through public procurement (Uyarra and Flanagan, 2009: 6). Procurement is explained as the business management function that ensures identification, sourcing, access, and management of the external resources that an organisation needs or may need to fulfil its strategic objectives (Chartered Institute of Purchasing and Supply, 2014: 5). Procurement is crucial as it helps meet partners' expectations and their primary needs; it also assists both vendors and customers perform on a higher level in the long run (Chief Procurement, 2016: 1). Supplier selection, a sub-function of procurement, has become one of the elementary roles of procurement managers since it virtually affects any industry's competitiveness (Li and Zabinsky, 2011: 344).

Therefore, selecting suitable suppliers brings substantial benefits to enterprises and increases customer satisfaction (Lin, Chen, and Ting, 2011: 1760). Failure to undertake the proper process in choosing the best possible supplier will result in supplier risks that may disrupt the industry's operations. Supplier risk is the probability of an incident associated with inbound supply from individual supplier failures. Its outcomes result in the inability of the purchasing firm to meet

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customer demand or cause threats to customer life and safety (Ellis, Henry and Shockley, 2010: 43). Public health industries across the globe have started to pay attention to supplier risk management. As such, enterprises should minimise their suppliers' risks to maximise effective procurement performance. Some health industries in developing countries have been known for poor performance and corruption (Kanyane, Houston and Sausi, 2013: 130), resulting in poor resource utilisation (Neupane, soar and Jianming, 2012: 305), poor personnel management and training, and delayed payment and benefits (Abdallat, Nimerand Al-Weshah, 2013: 43). Although historically, supplier selection was supposedly a straightforward matter, the process was shadowed by some difficulties such as a growing number of potential suppliers, an increasing number of attributes, and difficulty in identifying and defining supplier selection parameters (Altinoz, Kilduff and Winchester 2010: 129). Due to problems imposed by supplier selection, connecting with capable, reliable, and trustworthy suppliers is the only critical factor to a successful procurement practice in public health industries in South Africa (Matook, Lasc and Tamaschke, 2009: 242).

However, in South Africa, most of the procurement departments within the health sector face the problem of not having enough information about the procurement procedure, its inputs, outputs, resource consumption, and results (Kiage, 2013: 54). Therefore, using poor procurement performance as a nominal anchor, this study seeks to address this existing research gap in the health care sector in Gauteng. The purpose of this study was to determine the relationship between supplier selection practices, supplier risk management, supplier commitment and procurement performance in the public health industry in the Gauteng province.

Theoretical Framework and Literature Review

To obtain a suitable contextual and broader understanding of this study, the commitment-trust theory of Morgan and Hunt (1994: 20) was a well-established framework to observe the relationship between supplier selection practices, supplier risk management and supplier commitment in procurement performance in the Gauteng province. The commitment-trust theory suggests that trust and commitment are the two fundamentals that must exist for a relationship to succeed in an organisation (Mack, 2018: 1). For an effective procurement performance to progress, there should be coordination and compliance between all partners involved. Hashima and Tan (2015: 146) suggest that the committed-trust theory can be of great help in terms of ensuring and designing an effective and efficient procurement performance. Supplier selection occupies an essential position in supply chain management and is a research area that continually receives a relatively large amount of attention in the literature, from both practitioners and academics (Kamann and Bakker 2004: 55; Li 2014: 1; Cristea and Cristea 2017: 1). According to Cristea and Cristea (2017: 1), supplier selection is how companies identify, evaluate, and choose a supplier to become part of their supply chain process.

The main objectives of the supplier selection process are to maximise overall value to the purchaser, reduce acquisition risk and build close and long-term relationships between buyers and suppliers (Chen, Lin, and Huang, 2006: 290; Van Der Westhuizen and Ntshingila, 2020: 4). Selecting the best-suited supplier considerably decrease purchasing costs, improves competitiveness in the market, enhances supply chain performance and improves end-user satisfaction (Sanayei, Mousavi, and Yazdankhahc, 2010: 240). Besides, Bruno, Esposito, and Genovese (2016: 272) further stress that selecting suitable suppliers is essential for enhancing the enterprises' competitiveness and reacting promptly to market requirements and the innovation process. Commitment is essential because it leads directly to cooperative performances vital for the long-term and mutually beneficial relationships (Frow, 2007: 246). It has been viewed as a crucial and critical factor that strengthens buyer-supplier relationships (Kim, Park, Ryoo and Park, 2010: 865). Wong, Lai, Lun and Cheng (2012: 7) define commitment as the belief and intention to continue with a relationship that one may see as valuable. Further, Salam (2011: 360-361) states that commitment is the desire of both parties to maintain and strengthen their respective associations.

For commitment to be achieved in supply chain relationships, suppliers should stabilise and collaborate in a buyer-supplier relationship so that joint goals can be reached amongst them (Botes, Niemann and Kotzé 2017: 186; Vaidya and Hudnurkar, 2013: 293). Also, suppliers should have a holistic view of what is expected to enhance commitment between them and their buyers through pre-communication rather than focusing on their internal supply chain goals (Bae and Ha, 2014: 127). According to Matook, Lasch and Tamaschke (2009: 243), organisations face many risks along the supply chain; The purchasing environment has become one of the most critical components for generating added value, profitability and even ensuring survival. Purchasing departments focus on acquiring parts of the right quality, in the correct quantity, at the right time and price and from suitable suppliers, who then assess supplier risk significant (Matook *et al.*, 2009: 243; Toppari, 2009: 13). The assessment of supplier risks is critical when the supplier is new and has not sourced from it before or when evaluating suppliers that deliver essential inbound supplies (Matook *et al.*, 2009: 244).

Considering a comprehensive set of supplier risks, an organisation needs to undertake practical activities to manage supplier risks (Ritchie and Brindley, 2007: 310). According to Coelho (2017: 2), supplier risk management is a systematic approach to identifying, assessing, and mitigating risk in the organisation. Supplier development is one of the management responses a firm could adopt. As defined by the CIPS (2013: 1), supplier development is the “process of working with certain suppliers on a one-to-one basis to improve their performance for the benefit of the buying organisation”. Supplier development practices are essential components of supply chain management; these practices play a vital role in improving buyer-supplier performance (Rajput and Bakar, 2012: 11186). When public procurement departments mitigate these risks, it could contribute to improved procurement performance within the public health sector in the Gauteng province.

According to the Public Procurement and Asset Disposal Act 33 2015, procurement is the “acquisition by purchase, rental, lease, hire purchase, license, tenancy, franchise or by any other contractual means of any type of works, assets, services or goods including livestock or any combination and includes advisory, planning and processing in the supply chain system”. Van Weele (2002: 256) explained that procurement performance is a measure of identifying the extent to which the procurement function can reach the objectives and goals with minimum cost. Additionally, he notes that there are two main aspects of procurement performance: effectiveness and efficiency. An effective procurement procedure allows suppliers to provide satisfactory quality, service, and price within a timely delivery schedule (World Health Organisation, 2011: 10; Trillium Lakelands, 2016: 2). The basic tenet of procurement is described as the five rights: the right product or service of the excellent quality, price, and quantity at the right place and time (Abouzeid, 2018: 1). Furthermore, procurement may involve questions of accountability, integrity, and value, with effects far beyond the actual buyer and seller transactions at its centre (WHO 2011: 10).

Procurement is an essential strategic business management function to manage the entire process from assessing needs, identifying a product, forecasting, sourcing, logistics, risks management, value engineering, supplier relationship management, and regulatory compliance efficiently and effectively (Mazibuko and Fourie, 2017: 109). Poor practices in the procurement arena and the manifestation of unethical procurement practices lead to a substandard provision of goods and impede effective procurement performance (Mazibuko and Fourie, 2017: 109) within the public health sector in the Gauteng province.

Conceptual Model and Hypotheses Development

Based on the literature review, the following conceptual model was developed. The framework is made up of three constructs. Supplier selection and supplier risk management are seen as predictors and one mediator, which is supplier commitment and one outcome variable which is

procurement performance. The predictors, mediator and outcome proposed that relationships exist among the variables, supported by the six hypotheses that build up the model.

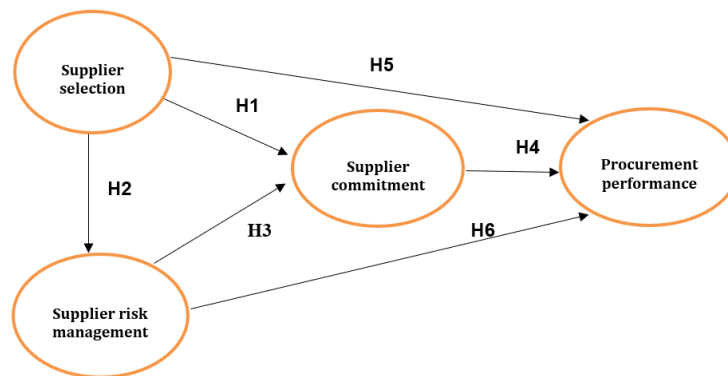


Figure 1: A proposed conceptual model

Based on the conceptual model above, the following hypotheses have been proposed:

- H1:** There is a positive relationship between supplier selection practices and supplier commitment.
- H2:** There is a positive relationship between supplier selection practices and supplier risk management.
- H3:** There is a positive relationship between supplier risk management and commitment.
- H4:** There is a positive relationship between supplier commitment and procurement performance.
- H5:** There is a positive relationship between supplier selection practices and procurement performance.
- H6:** There is a positive relationship between supplier risk management and procurement performance.

Research Methodology

For this study, a quantitative approach was used to collect primary numerical data on the research constructs in public health care facilities in the Gauteng province. The research strategy that was selected for this study is a survey. Zikmund, Babbitt, Carr and Griffin (2010: 115) suggested that one benefit of a survey is that a specific representative population can be targeted to participate in a survey. In Gauteng Province, the public health care system consists of four central hospitals which provide highly specialised quaternary and/or tertiary services that train health professionals. There are also two regional tertiary hospitals and nine regional hospitals that provide specialised secondary services in internal medicine, general surgery, paediatrics, obstetrics, and general surgery. The province has one specialised mother-child hospital that functions at the level of a regional hospital. The 11 district hospitals in the province provide general, and inpatient hospital services and the six specialised hospitals provide psychiatric services, tuberculosis services, infectious diseases, and rehabilitation services (National Health Act No 61 of 2003).

The study population consisted of all the procurement executives and practitioners who work in the Gauteng public health care facilities. Data on 220 procurement professionals was obtained from the Gauteng Department of Health. The survey was a self-administered questionnaire that was emailed to all the respondents. For this study, the questionnaire consisted of five sections. Section A solicited participants' background information. Section B comprised questions on

supplier selection practices. The questions used in this section were adopted from Tawfik, Tarek, and Mady (2014: 426). Section C included questions on supplier risk management (Satyendra and Anil 2014: 1039). Section D comprised questions on supplier commitment adopted from studies conducted by (Abdul-Muhmin 2005: 627). Section E included questions on procurement performance from Tarek *et al.*, (2014: 426). Section A consisted of dichotomous and multiple-choice type questions. Sections B to E consisted of 5-point Likert scale questions anchored on 1= strongly disagree to 5= strongly agree.

A non-probability sampling approach using a convenience sampling method was used. A total of 200 self-administered questionnaires were delivered or e-mailed to the accessible population. The respondents were informed of the principle of voluntary participation and privacy. The participants could withdraw from the study at any time. From the 200 questionnaires distributed, 150 were returned, which gave a response rate of 75 per cent.

Findings and Discussion

Both males and females participated in the study; 62 per cent were males, and 38 per cent were female. Out of the 150 respondents who completed the questionnaire, 11 percent were aged between 48 and 58, while 25 percent were between 38 and 47. With regards to the qualifications of the respondents, 32 percent were holders of senior certificates, while 38 percent had diploma qualifications, 29 percent had degrees, and 1 percent had postgraduate degrees. Only 50 percent of respondents with post-school qualifications had a qualification in procurement. A measurement model of the conceptual model with six latent variables was estimated. All constructs were modelled. They were using reflective indicators. The SMART-partial least squares (SMART-PLS 3) structural equation modelling procedure was employed to read and analyse the data. Construct reliability was assessed by three methods, Cronbach’s alpha test (Cronbach’s Value), composite reliability test (CR) and average value extracted (AVE) test. The results are presented in Table 1.

Table 1: SMART-PLS results

Construct	Cronbach Value	CR Value	AVE Value
Supplier selection	0.902	0.923	0.706
Supplier risk management	0.856	0.919	0.696
Supplier commitment	0.889	0.898	0.638
Procurement performance	0.895	0.928	0.721

Cronbach alphas of above 0.856 were reported for all the constructs in the scale, above the acceptable level as suggested by Shamsudin, Ali, Ali, and Shabi (2019: 528). All the items loaded on the four predetermined factors as expected, indicating the uni-dimensionality of the scale. The internal reliability of each construct was also evaluated using the composite reliability (CR) index test. A composite reliability index greater than 0.7 depicts an adequate internal consistency of the construct (Shahbaz, Kazi, Othman, Javaid, Hussain, and Rasi, 2019: 3894). The average variance extracted (AVE) is more conservative than composite reliability and Cronbach’s alpha and is utilised to evaluate and assess the discriminant validity. A higher score of 0.50 and above represents the measuring construct and is treated as an indication of convergent validity. Therefore, the CR and AVE values are above the recommended measures, signifying that the measuring instrument used to measure the constructs is internally reliable and consistent (Gu, Guo, Liang, Lu Zhao, Liu and Long, 2019: 5).

The structural model was tested using the loadings and significance of the path coefficients (indicating the strength of relationships between dependent and independent variables) and the R² value (the amount of variance explained by independent variables). The statistical significance of each path was estimated using a Smart PLS bootstrapping method utilising 100 resamples to obtain t-values (He, Zhu and Zhang, 2013: 687). Support for the study hypotheses (refer to Table 2), labelled on their corresponding paths in Figure 2, could be ascertained by examining the path coefficients' directionality (positive or negative) and the significance of the t-values. The

standardised path coefficients are expected to be at least 0.2 and preferably greater than 0.3 (Hair *et al.*, 2010).

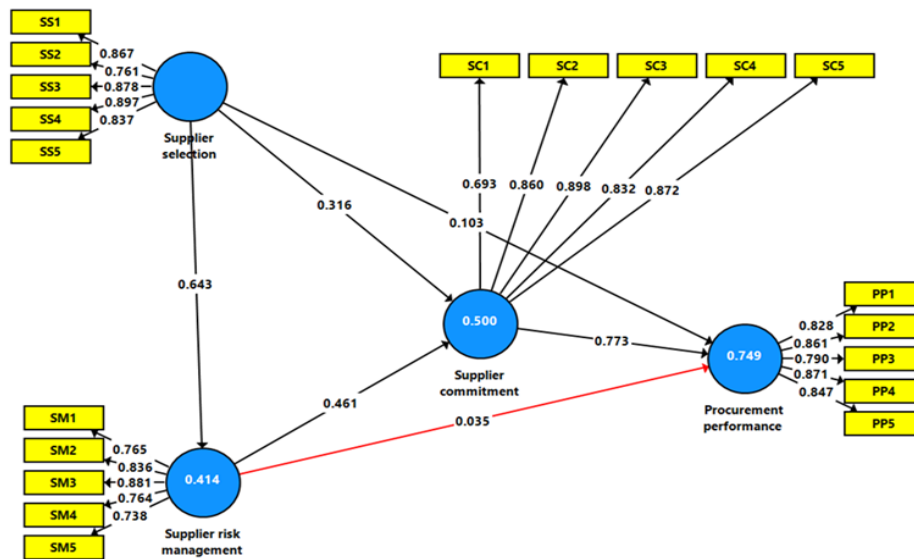


Figure 2: Structural model results

Figure 2 and Table 2 presented the six hypothesised relationships, the t-statistics, path coefficients, and the accepted level. The t-statistic value indicates whether the relationship is either notable or not. To ensure the significance of any relationship, a statistic value should be above 1.96 and a p-value of ≤ 0.05 to designate strong relationship levels (Greenland, Senn, Rothman, Carlin, Poole, Goodman, and Altman 2016: 34; Garson 2016: 20). Out of all the six that were proposed, five were statistically significant and accepted. Hypothesis six is rejected as t-statistics > 0.5 .

Table 2: Hypothesis Testing Results

Proposed Hypotheses Relationship	Path Coefficients	T-Statistics	Rejected/Supported
H1: There is a significant positive relationship between supplier selection practices and supplier commitment	0.316	5.930	Supported
H2: There is a significant positive relationship between supplier selection practices and supplier risk management.	0.643	18.284	Supported
H3: There is a significant positive relationship between supplier risk management and commitment.	0.461	8.239	Supported
H4: There is a significant positive relationship between supplier commitment and procurement performance	0.773	20.440	Supported
H5: There is a significant positive relationship between supplier selection practices and procurement performance	0.013	2.330	Supported
H6: There is a significant positive relationship between supplier risk management and procurement performance.	0.035	0.786	Rejected

H1: Supplier selection practices have a positive influence relationship on supplier commitment

From the empirical results, the public health industries that took part in this study graded the relationship between supplier selection and supplier commitment as very high. The impact of this relationship was empirically examined at $p < 0.000$, and the coefficient relationship of ($\beta = 0.316$) indicates a stronger relationship. Therefore, this shows that public health entities, which follow proper procedures in terms of supplier selection, are highly likely to select the best possible

suppliers who are committed. Shin, Park and Lee (2016: 739) confirm that the link between supplier selection and supplier commitment enables suppliers and buyers to control their loyalty amongst themselves in a way that benefits their business relationship and establishes a long-term relationship.

H2: Supplier selection practices have a positive influence relationship on supplier risk management

The influence of supplier selection on supplier risk management was rated higher from the lens of the participating public health industries. The regression coefficient and p-value evidenced this at the level of ($p < 0.000$; $\beta = 0.643$). The relationship between the two constructs is highest in the Smart PLS3 model. It is evident that when public health industries take the initiative to ensure that appropriate supplier selection practices are adhered to, they will likely experience less supplier risk. Thus, they will manage the risks using supplier risk management approaches implemented in the organisation. However, this relationship was supported in studies conducted by Constantin and Valentina (2018: 48) and Maheshwari and Jain (2014: 558), in which they stated that the increasing dependency on suppliers is prone to uncertain events; thus, the supplier chain risk management has become a necessary part of the supplier selection. Therefore, this dissertation concludes that supplier selection has a positive and significant influence on supplier risk management.

H3: Supplier risk management has a positive influence relationship with supplier commitment

Given the results of this dissertation, it could be concluded that, indeed, supplier risk management has a strong positive and significant influence on supplier commitment in the public health industry. The regression coefficient and p-value evidenced this at the level of ($p < 0.000$; $\beta = 0.461$). This assessment was supported by studies conducted by Kara and Firat (2018: 1) and Giunipero and Eltantawy (2004: 703). They suggested that supplier risk management approaches are vital in enhancing supplier commitment in the respective organisation. This points to the importance of developing excellent and strategic supplier risk management practices between parties involved, which will enable them to reap the benefits that one cannot achieve in separation. Moreover, supplier risk management has been viewed by Rakash, Soni and Rathore (2017: 70) to be fundamental in minimising supplier risk and enhancing and sustaining the overall procurement performance of an organisation.

H4: Supplier commitment has a positive influence relationship on procurement performance

This study positioned supplier commitment as the focal point of the relationship model between supplier selection, supplier risk management and procurement performance. This means that the supplier commitment variable's efficacy and effectiveness depend on the first three variables' effectiveness. By implication, this study reveals that the public health industry strategies and objectives executed through the influencing factors of supplier commitment can enable the organisation to reap higher-level benefits of procurement performance. Empirically, this relationship was supported with the path coefficient value of 0.773 and a p-value of $p < 0.000$, indicating a positive relationship between the measuring variables. The relationship between commitment and procurement performance found support from a study conducted by Nawij, Songappenm, Nadarajan, Ibrahim and Mustapha (2017: 246) and Sillanpää, Shahzad and Sillanpää (2015: 228), stating that supplier commitment is a positive enabler of procurement performance.

H5: Supplier selection practices have a positive influence relationship on procurement performance

In this study, public health industries supported the hypothesis that supplier selection positively influences procurement performance. This was empirically examined with a p-value of <0.020. This indicates that the procurement department, which can select the best possible suppliers without ulterior motives, will enjoy long-term commitment with their collaborating suppliers and improve the overall procurement performance of the organisation. Moreover, this relationship was supported in studies conducted by Manyega and Okubo (2015: 59), stating that effective supplier selection methods improve procurement performance in organisations.

H6: Supplier risk management has a positive influence on procurement performance

Unlike the previous findings obtained, supplier risk management appears to have little influence on procurement performance in public health industries. This contrasts with several studies (Kamoni, Rotich and Ochiri, 2018: 3; Aghajanian and Shevchenko-Perepy 2018: 731; Chapman, Bernon and Hagggett 2011: 1030; Xie, Tummala and Schoenherr 2011: 481), who have viewed supplier risk management as a key determinant factor that allows an organisation to conduct supplier risk management practices freely and openly through sharing of strategic information and solutions from their inbound to their outbound supply chain activities. This leads to an improvement in suppliers' overall performance, which one after the other will have a positive effect on the public health industry's procurement performance. It indicates the vital role of public health industries' capabilities in implementing a supplier risk management plan to enhance their procurement performance. Also, supplier risk management has been described as an essential factor contributing to a decrease in supplier risk, positively affecting an organisation's procurement performance (Zhao, Huo, Sun and Zhao, 2013: 116).

Recommendations

The results suggest that effective supplier selection practices, supplier commitment and supplier risk management will lead to better procurement performance in the public health care sector. Consequently, it is necessary to suggest recommendations to improve supplier selection practices, supplier commitment and supplier risk management and improve procurement performance. The study recommends that in their efforts to improve their supplier selection practices, public health care buyers must ensure that standard operating procedures are followed if they desire their alignment to succeed and create value in the organisations. Public health procurement performance must acknowledge the significance of selecting suitable suppliers, sharing knowledge when attempting alignment and embracing the association of the two functions in the organisation's running. Sharing knowledge and information amongst parties involved will significantly affect the procurement performance as suppliers will feel valued, therefore, staying committed and delivering exceptional results. It was further shown that supplier selection is vital for supplier risk management. Further, this highlights the public health care sector's need to improve supplier selection practices and ensure that supplier risk management is followed.

This study highlighted the importance of public health industries in developing and building a good relationship with their suppliers. This may allow them to collaborate hand in hand and have notable trust in the knowledge and information being shared. Procurement personnel in the public health sector should focus exclusively on developing and improving their supplier base by providing training and obtaining the mandatory knowledge/skills and competence required, which will subsequently be in line with what the department expects. Therefore, this may enable them to have some level of trust as they are confident that these suppliers will meet their demands and expectations. Once this is in place, supplier risks will be minimised and, thus, managed effectively. It was also revealed that supplier risk management has a strong and positive influence on supplier commitment and that the relationship between the two variables is notable.

Consequently, this study proposes that public health care buyers must have a supplier risk management strategy in place to establish long-term relationships with their suppliers, which will enhance supplier commitment. Procurement personnel in public health industries must nurture and develop relationships with their suppliers to buy into the same common goals. This will allow them to improve their trust level collectively and help supplier commitment, which will enable them to all converge in the same direction to achieve their goals set. The study recommends that supplier risk management practices such as risk-sharing and risk-shifting are relevant to mitigate risks and improve supplier commitment. This may be effective as it may enable parties to stick with performing counterparts, significantly increasing their degree of trust, and fostering suppliers' performance. The study further proposes that public health care buyers establish long-term relationships with their suppliers to improve or increase procurement performance. To increase supplier commitments, buying departments in public health entities need to consider their suppliers as virtual extensions that will motivate them to improve their overall performance. As the findings revealed that supplier commitment and procurement performance have the most vital relationship, the dissertation recommends that public health care buyers conduct training and introduce performance bonuses to suppliers to ensure they remain committed to the organisation and establish a long-term and durable relationship with them.

The public health care sectors need to improve and strengthen their procurement performance by ensuring that suitable suppliers are elected. This study proposes that procurement professionals should be encouraged to perform site visits before the final approval of any supplier contract. This would effectively ensure and assist in ascertaining the capacity of these suppliers to supply the material or services sought. In selecting the best possible supply, procurement professionals in the public health sectors should provide regular feedback to suppliers regarding their performance, indicating which areas they should improve. Also, rewards should be provided to suppliers who excel in their performance. These may include performance bonuses, positive referrals, and more contracts. Once these are provided, suppliers will be motivated to deliver at an even better standard, which will positively impact the procurement performance of the public health care sector. The results of this study have revealed that supplier risk management has little influence on the procurement performance of the public health care sectors. Many factors can be listed as possible suggestions to improve these relationships:

- Engage in joint and mutual forecast activities, which involve supplier risks. This may develop and strengthen synergistic processes between supplier and buyer as they will mutually share key strategies and policies to provide plans to eradicate any supplier risk.
- Flexible contracts and multiple sourcing are alternative ways to minimise risks by using different suppliers. If one supplier fails to deliver because of quality or other delivery issues, at the minimum, the alternative supplier will still be available, ensuring the delivery of goods effectively. Such supplier risk management will positively impact procurement performance as risks will be eliminated.
- Collaboration is another factor that will improve the relationship between supplier risk management and procurement performance. According to Singh, Gunjan Soni and Badhotiya (2019: 109), collaboration means that supply chain officials are planned and executed jointly by two or more organisations for reciprocal benefits. A collaborative partnership will assist in anticipating the disruption and managing supplier risks efficiently, which will positively impact supplier risk management.

Conclusion

This study showed a positive and significant association between supplier commitment (mediator) factors, namely supplier selection and supplier risk management. This would, therefore, suggest that the supplier commitment of the public health industries might be

significantly enhanced if they focus primarily on these top two factors. To foster effective supplier selection and commitment amongst suppliers, it is crucial to employ suitable suppliers with a good reputation, excellent interpersonal skills, and the ability to work great in a team. Achieving this objective will require the buying organisation to do a thorough supplier background check before appointing a suitable candidate. Additionally, concerning supplier risk management, Enterprise Risk Management (ERP) could be adopted and implemented to control an organisation to overview, understand, and measure the number of risks exposed. Importantly, ERP will enable the organisation to select the proper supply chain flexibility necessary to address supply chain risks and enhance commitment amongst the parties involved.

Numerous implications for further research can be put to light. First, since the study was only one department in the public health sector, procurement, future studies should consider other departments such as operations, accounting and finance, and research and development. The scope of the study can be expanded to other supply chain risks excluded from this current study, such as social factors, economic factors, environmental risks, political factors, legal risks, and human behaviour risks. Since the study was regulated using the quantitative methodology, a different view using a mixed-method approach, which also involves the qualitative method where interviews are conducted. The study results could be informative if the views of consultants working in the space were included and compared. This presents the need for conducting similar studies using perceptions of consultants working temporarily in the public sector's procurement departments. Even though this research provided some interesting findings regarding the relationships between supplier selection, supplier risk management, supplier commitment and procurement performance in public health industries in Gauteng, it is unclear whether these relationships would be the same in other provinces of South Africa. Therefore, future research should examine the differences and similarities in the relationship between supplier selection, supplier risk management, supplier commitment and procurement performance in other provinces.

Future studies could employ exploratory factor analysis to identify the supply risk and procurement performance challenges instead of depending on literature for this motive. More vigorous statistical approaches such as structural equation modelling could also be employed in future studies since the study is multifactorial, involving several independent variables. Furthermore, procurement is a multi-dimensional concept, and the study only investigated three critical dimensions that improve procurement performance: e-tendering, e-ordering, and e-invoicing. Many other e-procurement functions include e-purchasing, e-transportation e-payment, e-catalogue, and e-tailing. Future research should investigate the relationship between supplier selection, supplier risk management, supplier commitment and e-procurement functions. In conclusion, another area of research is analysing the factors that influence the degree of supplier risk management on procurement performance, such as organisational commitment, trust and top management support, and shared objectives and visions among parties involved.

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