

UNIVERSITY OF KWAZULU-NATAL

**DEMAND PLANNINGS, PROCUREMENT PROCESSES AND THE
PERFORMANCE IN THE AGENCY OF THE DEPARTMENT OF TRANSPORT**

By

Charles Butana Seerane

Student Number: 204001688

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Supervisor: Mr C. Chikandiwa

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Name: Charles Butana Seerane	No: 204001688	
Title: Demand Planning, Procurement Processes and the Performance in the agency of the Department of Transport		
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Abstract

The study focused on demand planning, procurement processes and the performance in the agency of the Department of Transport in Gauteng province, South Africa. Demand planning is the first most important step in business planning. The census approach method was used, whereby all staff members at various levels and experiences within the agency had an opportunity to participate in this study. Data was collected using a questionnaire developed specifically for this study by the researcher. Ninety-two percent of staff members were kind to spend fifteen minutes of their time and responded to the questionnaire. The results of the study using quantitative and qualitative analysis methods revealed that demand planning has a significant impact on procurement processes and performance. The impact is positive if the demand planning is conducted properly, it improves procurement processes, transparency within procurement, cost effective and reduces lead time. The study further revealed that procurement plan is a critical function within the procurement process as it guides the motion of the entire acquisition process, this finding corroborated with literature. The study recommended that procurement and supply chain management policy makers introduce demand planning within their institutions, which must be conducted on a yearly basis. The demand planning must be informed by the strategic objectives of the organisation. The study further recommended that demand planning must involve all business units within the organisation. People must participate in order to have effective demand planning, therefore, the involvement of top management in the demand planning and procurement is significant in ensuring adherence and commitment to the plan.

Key words: Demand planning, procurement, procurement processes, procurement bottlenecks

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LIST OF ABBREVIATIONS

BAC	Bid Adjudication Committee
BEC	Bid Evaluation Committee
CC	Competition Commission
CFO	Chief Financial Officer
CIPS	Chartered Institute of Purchasing and Supply
CPO	Chief Procurement Officer
CRM	Customer Relationship Management
DoT	Department of Transport
e	Electronic
ERP	Enterprise Resource Planning
ICT	Information and communications technology
IT	Information Technology
LTSM	Learner and Teacher Support Materials
MFMA	Municipal Finance Management Act
PFMA	Public Finance Management Act
PPPFA	Preferential Procurement Policy Framework Act
R&D	Research and Development
SCM	Supply Chain Management
OEEC	Organisation for European Economic Co-operation

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CHAPTER 1

INTRODUCTION TO THE STUDY

1.1. Introduction and background

The study focused on the demand planning, procurement processes and the performance in the agency of the department of transport, with the objectives of finding consequences of demand planning on procurement, impact of demand planning on procurement processes and finally establishing whether demand planning has any impact on procurement bottlenecks. Chapter one will outline the significance of the study, objectives as the limitations.

Shin & Tunca (2017) define demand planning as multi-step supply chain management process that is used to generate reliable forecasts of goods and services that will be required in future. Procurement is the process of finding agreeable terms and acquiring services and works or goods from external organisations. This is usually done through competitive bidding or tendering processes to ensure that the purchaser receives services, goods or works. Proper evaluations are conducted to find the best possible price as well as shorter lead time, quality, quantity and locations in a manner that is fair, equitable, transparent, competitive and cost-effective (South African National Treasury, 2016).

Demand planning is characterised by various methodologies that include technology to be used in forecasting and planning processes. The main purpose of the demand planning is to ensure uninterrupted flow of goods and services starting from suppliers through to operations of the purchasing organisation that transforms the materials into products and finally the distribution of such products to final consumers. Demand planning plays a major role at the stages of pre-tendering as it ensures that goods, services, construction work and any other procurement are planned well in advance and in line with the strategic objectives of the purchasing organisation.

Hegazy (2013) argues that demand planning is a multi-step process that has impact on supply chains functions such as procurement, warehouse management, order fulfilment and transportation.

1.2. Motivation for the study/ Rational of the study

The motivation for the study is to find some of the methods that may be used to improve the procurement processes and performance to be more effective and efficient and resolves the problems discussed in the problem statement section. The most common issue encountered in the procurement is constant rush and lack of planning on goods and services required. According to Tukuta & Saruchera (2015) the success of procurement is often linked to its efficiency, which may be traced back to the ability of managers to conduct accurate demand planning when it comes to commodities. As discussed in the introduction, demand planning has impact on supply chain management particularly procurement. The study will also find out the effects of demand planning on procurement processes and performance.

The agency of the Department of Transport in South Africa whereby the study is conducted at will benefit from the study and all the South African government entities in all spheres which include national government, provincial government and local government. The procurement processes of these organisations will improve and also improve compliance to relevant laws and regulations. Private companies will also benefit from the study as efficient and effective procurement is not only good corporate governance or compliance but it can also significantly affect the bottom line. The outcome of the research may further be used by any interested individuals or organisations to improve procurement processes. The research also may provide guidance to practitioners or management in this phenomenon to make informed decisions in improving procurement and meeting their targets.

There is academic literature around this topic however, that literature is limited. Therefore, the study was conceived by the limited academic literature documenting the effects of demand planning on procurement processes and performance and attempted to unearth the objectives listed below more specifically at the agency of the Department of Transport in South Africa. The study will therefore contribute to procurement literature.

1.3. Problem Statement

The procurement operates in a highly stringent and regulated environment, yet procurement must ensure that the availability of services, goods and works at the best possible prices is achieved without compromising quality and quantity and finally be delivered at the right price. According to the South African National Treasury (2016) government expenditure which includes all spheres of government is growing on a large scale. In 2013/14, R500 billion was spent on services, works and goods by the public sector in South Africa (National Treasury South Africa, 2016).

It has been determined that not all goods and services are acquired in time and some are not acquired at all within the period that is required within the agency of the department of transport. Such incidents, therefore, poses a serious concern to meeting strategic goals and service delivery. Bottlenecks are also observed as an issue of concern whereby a large number of requisitions are raised at a particular time of the year to acquire goods and services and that leads to bottlenecks within procurement. Such issues lead to constant rush and lack of planning within the procurement. Procurement is one of the functions within the agency and this research will be conducted within the agency and it will therefore include all staff members within the agency. According to Vlckova & Patak (2016) demand planning is generally not carried out consistently in certain organisations or individual departments of the organisation in certain cases carry out demand panning processes individually and have unconsolidated planning and information.

1.4. Aim and objectives and need for the study

The study has one overall goal, a set of objectives and three specific research questions as shown below. The overall goal of the study is to explore the effects of demand planning on procurement processes and performance

1.4.1. Objectives of the study

The objectives of the research are as follows:

- To find out the consequences of demand planning on procurement
- To assess the effects of demand planning on procurement processes

- To establish whether demand planning has any effects on procurement bottlenecks

1.4.2. Research questions

The questions to be answered by the research are as follows:

- Does demand planning have consequences on procurement?
- What are the effects of demand planning on procurement processes?
- Does demand planning have any effects on procurement bottlenecks?

1.5. Justification of the study

Improving procurement processes, efficiency and effectiveness is vital for achieving profitable solutions to benefit from supplier relationships and to optimize total cost of procurement function. As explained in the problem statement that supply chain management operates in a highly stringent and regulated environment. To break down the statement further, the public sector procurement must comply with the principles enshrined in Section 217 (1) of the South African Constitution (1999). According Public Finance Management Amendment Act, No. 29 of 1999 there are five pillars in Section 217 (1) that govern the procurement process, the first pillar is fairness (ethics and fair dealings), equity, transparency (accountability and reporting, competitiveness (open and effective competition) and Cost effectiveness (value for money). In complying with the principles, there are challenges faced by procurement such as constant rush and lack of planning of goods, services and construction works required.

The most important benefit of procurement optimization is shown on the savings of an organisation (Carr & Pearson, 2016). According to Mesa, Kwasira & Waweru (2017) in their study found that common issue in procurement performance is lack of demand forecasts, poor quality and lack of information flow within the organisation. Birara & Worku (2017) in their case study research found out that staff competency, resource allocation, planning and contract management affect the performance of procurement positively. Jatta (2016) in his study found that supply chain planning and control are essential functions of effective supply chain operations. Efficient supply chain anticipates demand and keeps adequate inventory to service customers. Bollapragadaa, Kuppusamy & Rao (2015) claim that there are advantages of demand planning which assist supply chains and business to perform at optimal level.

The supply chain management (SCM) is one of the key mechanisms that assist the agency of the department of transport to deliver on its mandate, the study will therefore assist the agency to reflect on the current state of the SCM and improve the two phases of the chain which are demand planning and procurement. It was also discussed in details that under motivation of the study section that the procurement processes of the agency will improve and also improve compliance to relevant laws and regulations. The agency will also benefit from the study as efficient and effective procurement is not only good corporate governance or compliance but it can also significantly affect the bottom line.

1.6. Methodology

The researcher used exploratory research and case study approach. Data was collected through quantitative and qualitative methods. The study employed the census approach, whereby a questionnaire was administered by the researcher to collect data from the respondents which included all staff members within the agency. The computer package for statistical analysis known as Statistical Package for the Social Sciences (SPSS) and Microsoft excel spread sheet were used to analyse the results

1.7. Limitation and delimitation of the study

Firstly, although the exploratory research methodology was utilised for this study, it may have given certain insights and certain level of understanding about the effects of demand planning on procurement processes and performance at the agency of department of transport in South Africa. It is therefore imperative this exploratory be followed by other studies that will study the areas of this study that may not have been explored in satisfactory detail.

Secondly, the study utilised a case study method focusing at the agency of department of transport in South Africa. According to Yin (2012) case studies provide very little basis for scientific generalisation since they use a small number of subjects, some conducted with only one subject. The results and outcomes may be extended to other similar institutions in analogous industries with caution, so as to not generalise the findings. Therefore, there is little basis to generalise the results of this study, future studies may look into other institutions

Thirdly, the survey questionnaires were administered in English language, whilst there are nine official languages in South Africa, descending from various ethnic backgrounds. Native English speakers may have an advantage in understanding the questions better than non-native English speakers.

Finally, the participation rate for this study was good, however, it is not representation of the whole organisation. A total of 102 questionnaires issued and 94 questionnaires were completed representing 92% of staff members within the agency. Therefore these findings should be used with caution when trying to apply them to a broader setting.

1.8. Outline of the Study

This dissertation comprises six chapters. This first chapter provides the introduction to the study and briefly presents the motivation for the study, justification for the research, objectives and need for the study, the research questions as well as the research methodology.

Chapter 2 entails a theoretical context for the research by assessing the relevant literature on demand planning and its effect on procurement processes and

performance. In Chapter 2, the researcher further introduces the preliminary concepts.

Chapter 3 addresses the research methodology used in this study which is exploratory research and case study approach, data collection was collected through quantitative and qualitative methods.

Chapter 4 presents the results of the research and provided the results in form of descriptive statistics and qualitative explanations. The results were analysed from the questionnaire completed by each participant.

Chapter 5 contains the key findings from the research as well as the detailed analysis of the key findings. The results are further linked to the foregoing frameworks and literature review.

Chapter 6 concludes this dissertation. It summarises and provides further analysis. It further addresses the collected answers in addressing the research problem.

1.9. Conclusion

Chapter one presented the introduction to the study. The problem statement was discussed in order to motivate the reason for this study. A brief methodology, the research questions, the objectives and a brief outline of the study, were provided.

CHAPTER 2

LITERATURE REVIEW

2.1. Introduction

Chapter two provides the conceptual background and previous research`s overview on demand planning, procurement processes and the performance. The purpose of this review is to link the theory around the implementation of demand planning and procurement performance. This chapter also reviews investigated variables related to demand planning and performance of procurement and also how the demand planning affect procurement processes.

2.2. The overview of supply chain management

Toit & Vlok (2014) describe the term supply chain management as a method of assisting one or more supplier and customers' systems in responding to the requirements of the end customers. The chain involves various stakeholders from the sourcing, transportation, operations, storage, distribution and finally reaching the consumer. The chain is also designed in such a manner that there is value adding to the customer and also economic benefits to the organisation participating in the process of moving commodities from one place to another at the right price. Lehmacher (2017) explains that supply chain management consists of eight elements which are procurement, inventory control, logistics, product lifecycle management, preferential pricing and lead-times, demand management and vertical integrated partnerships.

According to South African National Treasury (2018) there are generic elements of Supply Chain Management as evidenced in Figure 2.1 below.

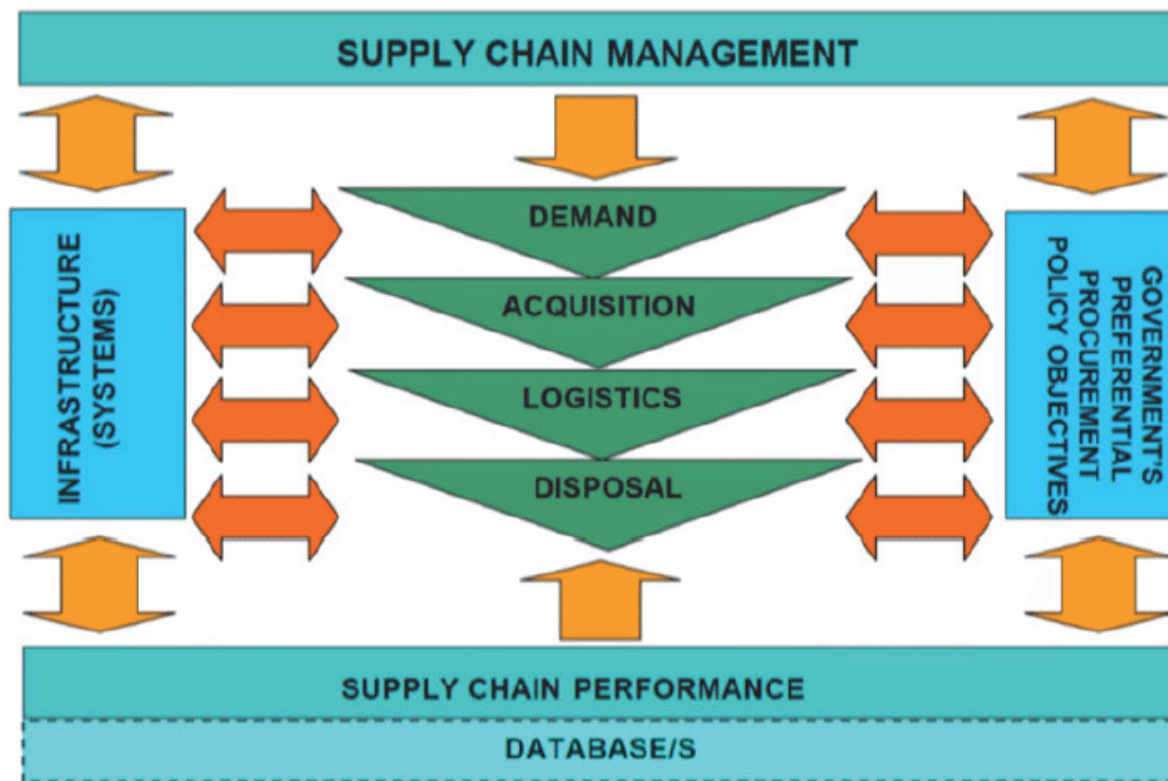


Figure 2.1 Elements of Supply Chain Management

Adapted from the South African National Treasury 2018. Generic Elements of Supply Chain Management

2.3. Definition of procurement

2.3.1. Procurement

It is clear from Figure 2.1 that procurement is an element of supply chain management. The movement of goods and services in the supply chain requires initiative from the supply chain management to the supplier of goods and services. The supply chain management issues a document called purchase order to the supplier as an indication of agreement of terms and conditions of the purchase and expect the delivery of goods and services. The purchaser is responsible for issuing the purchase order to initiate the movement of services and goods within the supply

chain. It is important to explain the term procurement and purchasing as the two terms will be used in this study. Monczka, Handfield, Guinipero & Patterson (2015) describe purchasing as a function responsible for acquiring all the goods and services needed and required by an organisation for operations activities, procurement consists of various activities that organise that flow of goods and services from the supplier to the organisation.

Some authors argue that procurement has a broader meaning. According to CIPS (2018) procurement is a function within business management that serves to ensure that goods and services are identified, sourced, accessed and also managing external resources that are required by the organisation to meet its strategic objectives. It is now clear from the above discussion that purchasing is part of procurement and usually starts with the requisition and other purchasing activities until the conversion of requisition into an order that is sent to the supplier. Whereas , procurement requires an active approach to the market. Monczka *et al.* (2015) argue that procurement has a broader meaning which includes various types of acquisitions such as contracting, leasing, rental and so on. The functions of procurement further include identification and selection of suppliers, contract negotiations, agreement of terms and conditions, expediting, analysis of orders and monitoring of supplier performance. Monczka *et al.* (2015) further argue that the difference between purchasing and procurement are largely semantic and they use the two terms interchangeably including all the activities needed to acquire goods and services. The author in this study will use procurement and purchasing interchangeably.

2.3.2. Procurement in the context of South African public sector

In the South African public sector procurement, the Public Finance Management Act governs the supply chain management; the act is derived from the South African Constitution (Section 217 of 1996). The Constitution is guided by the principles of transparency, cost-effectiveness, fairness, equality and competitiveness. These are the cornerstones of this legislation which further states that the accounting officers of government departments, state-owned entities and municipalities must conduct the business that complies with the Constitution (South African National Treasury, 2017).

According to South African National Treasury (2018) the South African public sector procurement is also governed by law as evidenced in Table 2.1 below.

Table 2.1: South African public sector procurement legislation

Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)
Public Finance Management Act (1 of 1999)
Municipal Finance Management Act (56 of 2003)
Preferential Procurement Policy Framework Act (5 of 2000)
Broad-based Black Economic Empowerment Act (53 of 2003)
Promotion of Administrative Justice Act (3 of 2000)
Promotion of Equality and the Prevention of Unfair Discrimination Act (4 of 2000)
Construction Industry Development Board Act (38 of 2000)
Prevention and Combating of Corrupt Activities Act (12 of 2004)

Adapted from the South African National Treasury 2018. South African public sector procurement legislation.

The above legislations serve as guiding principles within which the procurement must be conducted within all spheres of government including the entity in which the study was conducted.

2.3.3. Procurement performance

CIPS (2018) argue that procurement performance is defined by two dimensions which are efficiency and effectiveness. Rotich (2011) admits that the evaluation or measurement of procurement performance has always been a vexing problem for procurement professionals

The Organisation for Economic Co-operation and Development (2014) conducted a study to measure the performance of public procurement systems in various countries across the globe. It was concluded in the study that there four areas that indicate the performance of procurement and are as follows:

- a) Efficiency of the public procurement cycle
- b) Openness and transparency of the public procurement cycle
- c) Professionalism of the public procurement workforce

d) Contract performance management.

According to Dough, Adjei-Kumi, Adinyira & Baiden (2014) there are procurement performance indicators as indicated in Table 2.2.

Figure 2.2: Procurement performance indicators

Criteria	Measurable Indicator
1. Fairness & Equity	1. Time for tender preparation
	2. Applied Rate of Margin of Preference
2. Competitiveness	3. Number and Nationalities of Bidders
	4. Degree of Competitiveness
3. Transparency	5. Advertisement total duration
	6. Publicity frequency
	7. Publicity extent
4. Time Effectiveness	8. Time Performance Index
5. Cost Effectiveness	9. Cost Estimate Accuracy
6. Compliance	10. Approvals Compliance Rate
	11. Documentation Compliance Rate
	12. Capacity Qualification Ratio
7. Ethics	13. Number of complaints generated

Adapted from Dough, S. Adjei-Kumi, T. Adinyira, E. & Baiden, B .2014. Criteria and measurable indicators for assessing the performance of public works contract.

The above figure depicts procurement performance indicators. All sections of law and regulations above have been designed to address the listed criteria items.

- Equity and fairness focus on procedural compliance .Competitiveness focuses on value for money, the supply chain management must avoid wastage.
- Compliance refers to ticking all boxes of legal requirements. Proper approvals must be obtained for any form of deviation.
- Ethics, procurement is required to maintain high level of ethical standards and morals.

Although there is availability of different procurement performance measures, there is slight consensus on what determines the performance of procurement (Aramyan & Lansink, 2014).

According to South African National Treasury (2016) the performing procurement ensures the availability of goods and services is conducted in a manner that is in compliant with all legislative frameworks also following the process that is fair, cost effective, transparent and equitable. This is the measure in which the South African public sector has adopted and the Auditor-General of South Africa uses this method to audit the South African public sector.

2.3.4. Procurement plan

Procurement planning is describes as method used in organisations in both public and private sectors to plan all purchasing requirements for a given period of time (Agaba & Shipman, 2014). According to the Economic Commission of Africa (2013) procurement planning is a procurement function that is used by firms to document all business requirements to be purchased from suppliers or external sources.

The South African National Treasury (2016) suggests demand planning, procurement planning and drafting of specifications are important stages in pre-tendering stages. It is at planning stage that detailed needs analysis is undertaken in line with the strategic objectives of the organisation. It is at this stage that construction work, services and goods are properly aligned to the procuring entity's resource plan and the alignment of delivery time, pricing, place, quality and quantity.

According to Public procurement in the State of Hawaii (2018) procurement planning is the starting point of procurement lifecycle as evidence in Figure 2.3.

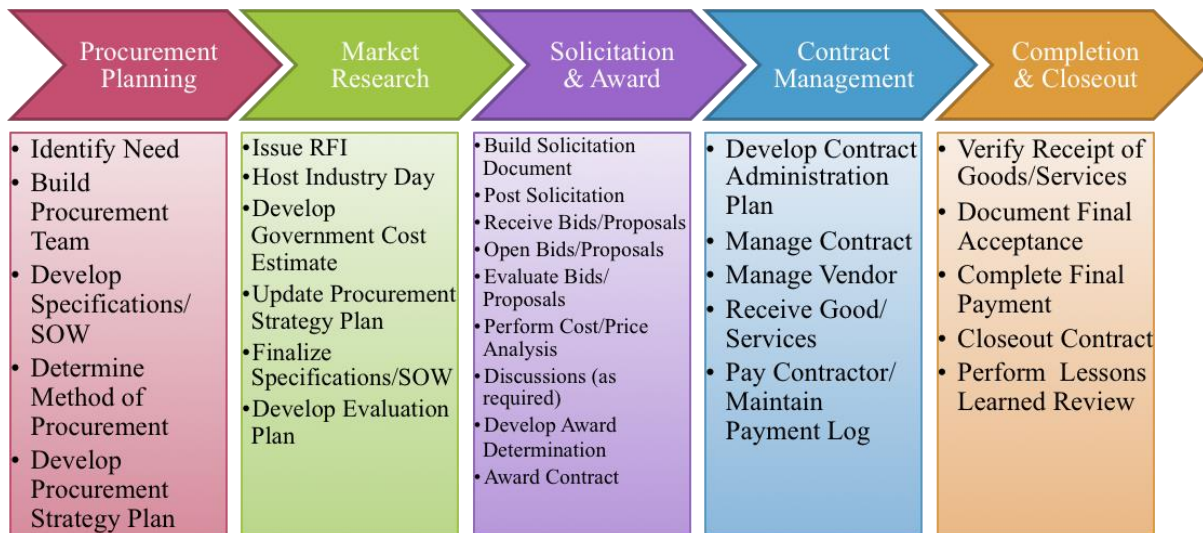


Figure 2.3 Procurement Lifecycle

Adapted from Public procurement in the State of Hawaii 2018. Introduction to the State Procurement Office.

According to Public procurement in the State of Hawaii (2018) procurement planning is the starting point in the procurement process. The procurement must therefore be in position of the needs of the organisation before the commencement of the procurement process. Procurement plans specify all procurement activities that an institution will embark on, on long, medium as well as short time. A proper procurement planning informed by demand planning and participation by all parties within the institution must reduce the lead time, eliminate unnecessary extensions and duplications of contracts and eradicate the occurrence of emergency procurement. The procurement plans also serve to apprise suppliers about the future and current procurement opportunities within the procurement institution.

Figure 2.3 further explains that market research also depends on the procurement plan. Goods and services that will be procured must be included in the procurement plan. Market research enables procurement understand how the market works, the competitiveness of the market, the direction in which the market is going and finally identify and understand key suppliers. The information will be used to implement the relevant procurement strategy and tender processes in order to get better value for money. Soliciting and award follows after a thorough market analysis and award the contracts to deserving suppliers. Thereafter, contract management follows to ensure

that all parties adhere to contractual obligations, final delivered goods are verified, services provided are assessed and the contract is closed.

The purpose of planning suggests that the procurement of goods, services and constructs works occurs in an acceptable business environment that is cognisant of economic, social and physical systems whereby the procurement activities will be conducted (James, 2013).

Public procurement practitioners in developed or developing countries face many different challenges however; all countries each have their own social, economic, cultural and political factors (Thai, 2014). The procurement system is governed by various laws, policies and regulations to achieve three goals firstly, ensuring best price, secondly providing an open and fairness in competition, finally preventing corruption and favouritism (Molande, 2014).

Asare, Kane, Leautier & Majoni (2014) analysed trends of procurement within the public sector on the continent of Africa. According to these scholars procurement management must adhere to essential processes in order to be efficient and effective. Part of the processes includes demand planning in order to determine the services and goods that procuring institutions intent to purchase. The other process is verification of funds through budgeting based on priorities and allocation of resources, and finally the awards of contract, supervision of performance and project closeout.

2.4. Definition of demand planning

2.4.1. Demand planning

Hegazy (2013) argues that demand planning is a multi-step process that has impact on supply chains functions such as procurement, warehouse management, order fulfilment and transportation. The figure below outlines the connection of demand planning with other supply chain management functions.

According to Hegazy (2013) demand planning is connected to supply chain management functions in Figure 2.4.



Figure 2.4 SCM Continuum

Adapted from Hegazy M .2013. Continuum of Supply Chain Management functions

According to Hegazy (2013) the supply chain objectives of originations are realised through a continuum of supply chain management functions, starting with the demand planning, procurement and sourcing, warehousing management, order fulfilment and transportation management.

Basheka (2012) corroborates that demand planning is one of vital primary functions of supply chain management and it has the potential to contribute to improved service delivery and the success of government operations.

According to Shapiro (2015) defines demand planning as the systematic process determining needs and working out the best possible methods to meet the needs within the strategic framework that guides to identify and determine priorities at operational and strategic levels. Shapiro (2015) further points out and warns that demand planning means thinking about future needs and something be done ,nevertheless, demand planning does not necessary provide assurance that everything planned will go according to plan.

CIPS (2018) describes demand planning as process undertaken by management within an organisation which assists that organisation to modify its production or service capacity to meet changes in demand using supply chain management and marketing strategies to balance out the variations. Saffy (2018) corroborates that demand planning is an integral part of the supply chain and perhaps the most crucial function of any enterprise. It also refers to the future requirements for the products and services of the organisation. The process includes the identification, planning and management of the accurate and forecast business demands. Vlckova & Patak (2013) emphasise that demand planning represents various set of methodologies and the use of information technology to produce forecasting of demand within and outside the organisation. The objective is to increase a seamless flow of services and raw material. The process starts to with the suppliers, manufacturing, distribution centres and finally reaching the final consumer.

Melo & Alcantara (2014) add that demand planning is conducted to assist business understand areas of profit. It therefore exposes the capacity and capability of the business, finances and stakeholder confidence. The implementation of demand assists business to come with forecasting with little error and proper decision making on goods and services that must be produced and distributed to exhaust the possibility of profits for the whole organisation (Vlckova & Patak, 2013).

It is critical to differentiate the different types of demand that organisation are doing in order to run the supply chains. Mentzer & Moon (2015) suggest that there are three different kinds of demand that may necessitate various methods of forecasting to come up with a credible demand planning.

- Independent demand, this is the quantity of goods and services demanded by the bottom company within the supply chain management or by the end user or customer within the supply chain
- Derived demand, this is the quantity of goods and services demanded by other organisation that meet and exceed the demands of their customers

- Dependent demand is the demand of raw material to produce the final products. The dependent demand is generally reliant on the demand of the final products.

2.4.2. Demand Forecasting

Wins (2018) describes demand forecasting as a systematic process that includes amongst others, anticipation of demand for goods and services in future considering competitive forces and uncontrollable forces. The process further inspect the amount of goods and services required to produce goods and services or final products and the amount of goods and services consumers are more likely to buy within a given time. This type of information is useful to organisations to produce the required volume of goods and services and meet customers' orders. Organisations strive to spend less time, money and effort on excess obsolete wasted inventory.

Davis & Sheldon (2016) asserts that demand forecasting is part of demand planning. The two scholars point out that it is impossible to predict future development with total accuracy however, demand forecasting still plays a major role within demand planning and supply chain management.

Identifying the purpose of demand forecasting is critical to determine the accuracy level required and the resources that must be used to obtain it (Lysons & Farrington, 2006). Boyer & Verma (2010) argue that whenever forecasting is used to predict future demand there must be an understanding of demand patterns and other further factors such as product life cycle, changing market and competition.

According to Gjeldum, Crnjac & Bilic (2017) forecasting has the potential of assisting to deal with the 'bullwhip effect' caused by the distorted flows of information up and down the supply chain. Excessive volume of inventory, bottleneck within procurement, stock-out, poor customer service, high transport costs and overtime wage expenses which lead to the bullwhip effect may be avoided by having accurate forecasting.

2.5. Effects of demand planning on procurement processes and performance

Blomgren & Eriksson (2016) argue that demand planning has an impact on logistics, supply chain networks and procurement. Such networks and procurements are vulnerable to any form of disruptions. Any disruption within supply chains has potential to fail the entire network. The critical aspect in managing and providing supply chain that is effective is the capability to minimise or eradicate where possible.

According to Basheka (2008) demand planning is the primary function that sets the stage for subsequent procurement initiatives. An error in demand planning affects procurement planning, subsequently has wide implication on organisation's procurement performance. Ogwang & Waweru (2010) asserts that demand planning is considered one of the important elements of procurement management and supply chain management processes. It is also regarded as the most puzzling process for various reasons; firstly the availability of information for goods and services is insufficient. Planning within procurement is often unaware of various quantities of goods available and how the quantification methods are applied.

A clear understanding of possible disruptions that are likely to occur in the supply chains is important, the impact of disruption on supply chain and the extent of such disruptions. Having unplanned disruptions and treating supply chain disruptions as an unexpected event may lead to uncertainty within the origination particularly the supply chains (Parihar & Rahul, 2014).

According to Madhani (2015) there is significant correlation between effective supply chain management and efficient customer service, this the management idea with the sole aim of ensuring maximizing customers' expectation through collaboration with retailing industries. Industries within the supply chain such as logistics, transportation, suppliers and intermediaries must interact and communicate properly to ensure that customer's expectation are met effectively (Simatupang & Sridharan, 2013). Firms are becoming dependant on each other and collaborate in supply chain networks to seamless coordination of activities.

Mentzer & Moon (2015) corroborate that limited attention has been given by firms to collaboration of supply chain activities. Min & Yu (2013) agree that it is important to understand the aspects of collaboration and if that part is neglected may lead to distortion in information sharing, eventually leading to inappropriate replenishment of products and inefficient supply chain.

Holweg & Reichhart (2014) found out that the growing customer needs and changing customer needs make it challenging to accurately predict the demand however, making accurate estimates is critical and vital to both forecasting and all productive systems as they form basis of planning and estimations of volumes of goods and services that customers will consume at a particular time. The objective is to ensure that customers` needs are accurately predicted, procured and reach the customer at the right time.

However, it is important to point out that for a company to remain competitively superior, requires identifying the right market signals through demand sensing capabilities in order to provide reliable supply of needed products at the right place and at the right time thereby creating an effective and reliable response (Biwott, Bogonko & Kibet, 2017).

Lunenburg (2012) argues that demand forecasting is the background of all planning as it provides estimates of future expectations. Demand forecasts have been used for many years, different techniques have been established and applied to assist the performance of supply chains and varying levels of success were achieved. Ameyaw, Mensah & Osei-Tutu (2012) argues that most companies admit that comprehensive historical data is available in the databases which are used for forecasting however, the facts remains that such information gives historical sales and not demand planning and demand histories. Birara & Worku (2013) argue that for companies to remain competitive they must no longer wait for the customers to make the move first. Companies must therefore predict and plan for the future demand and act promptly whenever the needs and order from customers arise.

2.5.1. Demand planning in supply chain management

Bollapragadaa, Kuppusamy & Rao (2014) suggest that demand planning in supply chain management is critical and assist organisation to make various decision making that include management of funds, procurement of raw material, process of production and costing of final products .Bollapragadaa *et al.* (2014) claim that there are advantages of demand planning which assist supply chains and business to perform at optimal level:

1. Improving procurement

Poor demand planning leads to disruption in procurement and all supply chain activities and hamper the ability to capture profit Lapide (2016). Kruger (2017) argues that the uncertainties of future demand lead to conflict between the procurement and production planning departments when goods do not arrive on time.

2. Increased customer satisfaction

Customers are kept satisfied by being provided the products and services they want at the time they want. Therefore, demand forecasting assist in predicting the demand of the product to fulfil customers` orders with short lead time or on-time. According to Lapide (2016) one of the functions of customer service departments is to align demand and supply in real time and meet customer needs. Such departments rely on demand planning to meet customer`s needs.

3. Reduction of out of stock inventory situations

It is important for organisations to have an understanding that the importance of forecasting even if JIT systems are used or long lead time suppliers. Bollapragadaa *et al.* (2015) claims that demand forecasting allow organisations to time the purchases to correspond with the fulfilment of sales.

4. Lowering safety stock requirement

According to Hilakari (2013) safety stock is required when the future demand is not known and time for replenishment varies. Efficient demand planning process has implication on the planning of inventory and arrangement of inventory levels.

- a) Requests are developed and consolidated for operations in manufacturing
- b) The launched of new products is developed
- c) Activities for promotions are prepared
- d) The variations in seasons is forecasted to meet demand

Hilakari (2013) claims that companies that implemented forecasting in planning activities for the above situations do not carry high safety stock.

5. Preparing the budget

Demand planning must be integrated with budgeting and must be available during the planning stages. Demand forecasting plays a pivotal role in drafting budgeting costs (Apiyo & Mburu, 2014).

Ogwang & Waweru (2010) state that in spite of that all advantages and enhancements of demand planning documented, the possible achievements that are possibly achieved through forecasting in supply chain management do not always translate into profitability of organisations. The second factor is that in the economy there are always events that are beyond the control of companies such as economic factors that include amongst others, change in interest rates and change in fuel prices. Promotions, marketing promotions and decisions around budget are within the control of organisations and linked to demand planning (Makridakis, Wheelwright & Hyndman, 1998).

Demand planning has direct impact on company's procurement, manufacturing, logistics and marketing. The forecasting of sales have an impact on the schedules of production and how the purchasing strategies will be formulated (Stock & Lambert, 2001).

2.5.2. Impact of accurate demand planning and inaccurate demand planning on customers and collaborations

Effective demand planning is one of the important drivers on customers and supply chain management success, recognises (Szozda & Werbińska-Wojciechowska, 2013). Focusing only on top line supply chains perspective, ineffective customer demand planning may lead to inability of benefiting from the demand of products and also setting up the effective supply chains to meet the demand of products (Mentzer & Moon 2015).

The collaboration of supply chain usually results in many benefits. The collaborative demand forecasting leads to reasonable forecasting that enable two matters, the first one is greater customer service levels or reduced stock levels. Secondly, it gives the supplier the responsibility of replenishment. According to Smaros (2014) demand planning has a potential of eliminating the bullwhip effect. Holweg (2015) describes the bullwhip effect as the larger variance of orders in the supply chain. The variations have tendency to escalate when moving the upstream of the supply chain.

Lee, Lee, & Schniederjans (2011) argue that information sharing is the key factor in overcoming the bullwhip effect. The supply chain strategy and collaborations are guided by the characteristics of business and type of products produced. Holweg (2014) argues that if customers are dispersed geographically and suppliers are small in number, it is prudent to apply synchronised inventory control and production with chances of eradicating bullwhip effect.

The demand planning is vital since the process involved in transforming raw materials to finished goods and shipping them from suppliers to end users might be time consuming, it is for this reason that efficient planning is required (Lunenburg 2012). The accuracy of demand planning is still showing to be difficult for firms as there is too much data and some of it is useless; factors such as shorter product life cycle, non-availability of historical data, changes due to seasons, different customer demand, and product variety (Bollapragada, Kuppusamy & Rao, 2014).

2.5.3. Demand planning and bottlenecks within procurement

Bottlenecks are describes as a restriction or hurdle that restricts output or the use of capacity, which leads to restricted performance in the entire system (Lathan, 2013). In procurement processes and cycles, bottlenecks may often be portrait as delays, the length and duration of the bottleneck varies depending on the procurement strategy and where the bottleneck occurs with the procurement cycle.

The procurement strategies are different and follow different procurement processes depending on the complexity of the goods, construction and services that are procured (Prince, Geunes& Smith, 2013). Gadde & Wynstra (2018) corroborates that low value goods or services from local sources might be completed within a short space of time however, higher purchases from international sources using competitive bidding process may be completed after a long period of time. Wagner (2012) argues that diagnosing procurement bottleneck is critical in order to differentiate the actual procurement bottleneck and perceived procurement bottleneck.

According to the United States Agency for International Development (2013) there are common procurement bottlenecks as evidenced in Table 2.2

Table 2.2 Common Procurement Bottlenecks

Step	Function	Bottleneck
I. Supply and demand Planning		
1	Define supply requirements	Inaccurate or omitted
2	Complete budgeting and approval process	Budget cycle timing does not match the funding cycle
3	Submit procurement requisitions and specifications	Requisitions not submitted on time Inadequate or missing specifications Specification changes made after purchasing procedures are initiated

Step	Function	Bottleneck
I. Supply and demand Planning		
4	Release funds to procuring units	Timing does not match resupply needs Mid-term budget cuts; programmed funds withheld
III. Purchasing Activity		
5	Plan the purchasing work: Assess procurement, plan contract groupings and schedule purchasing work	Slow contract planning by procurement unit
		Slow work on procurement schedule
		Delayed input and approval of line supervisor above procurement unit
		Uncertainty over dates and amount of funds available
6	Prepare bidding documents, obtain approvals	Slow or flawed preparation of draft by procurement unit
		Slow or flawed decision making at levels above procurement unit
		Slow processing by funder or monitor
7	Invite Offer	
	Advertise opportunity, provide bidding documents, hold pre-bidding, respond to questions by potential bidders	Problems with advertising,
		Bidding document revision required
		Bid deadline extended or accommodate amendment of bidding documents

Step	Function	Bottleneck
8	Select suppliers and obtain approval	
	Open bids, prepare preliminary examination worksheet, bid evaluation committee deliberates and makes decision, submit decisions for required approvals	Rejection by monitor based or unsupported decision or flawed process
9	Award contracts	
	Notify successful bidder, publish results, negotiate minor points, process acceptance and signatures, obtain performance security	Protests by losing bidders
		Cancellation of bid
		Irregularity in performance security
10	Arrange payment guarantee	Delay in requesting letter of credit or down payment
	Make down payment, issue letter of credit	Delay in processing by finance unit or Ministry of Finance
		Funds not available to collateralize letter of credit, or down payment

III Contract Performance		
11	Process order and manufacture goods	Raw materials shortage
		Overbooked manufacturing schedule
		Distributor issues
12	Perform pre-shipment inspection/testing	Failed or disputed results
13	Deliver to port of entry	Shipping problems
14	Clear goods through customs	Slow processing of documents
		No access to funds for port fees
		Irregularities in goods or documents
15	Performance post-shipment inspection/ testing	Delayed or failed post-shipment inspection and testing
		Slow reporting and/or release

Adapted from United States Agency for International Development.2013. Addressing Procurement Bottlenecks. Review of Procurement Bottlenecks in Public Sector Medicine Supply Chains and Practical Approaches Taken to Resolve Them.

Table above depicts bottlenecks that occur in the procurement processes. Adegbie & Adenjili (2013) argues majority of bottlenecks materialise outside the main function of procurement, it further shows that it is critical to look into other factors that cause bottlenecks outside the core function of procurement. However, such process is critical to be completed for goods and services to be source and delivered. Examples are show in first raw of the table, which is supply and demand planning.

According to Siongok & Noor (2016) demand planning affects the performance of procurement; the impact may be negative or positive depending on the quality of demand planning. There are scenarios in procurement whereby the procurement is repeated due to goods not meeting the set quality standards. Such delays and bottlenecks are linked to initial stages of planning (Siongok & Noor, 2016).

2.5.4. Demand Variability, Bullwhip Effect and Procurement

Gowda & Subramanya (2015) in their study found that the occurrence of forecast error within the supply chains increased variability of costs. This is a result of communication delay and response delay within the supply chains, the delay is communication and the time it takes to respond to variances. This type of variation is worsened by accumulated quantities from consumers backward to manufacturing points which prompt the bullwhip effect.

Gowda & Subramanya (2015) further claim that a growing number of organisations are investing in the planning of inventory and support the application of optimised decision making as opposed to investment in fruitless forecasting.

Hugo & Badenhorst-Weiss (2011) describe bullwhip as the variability whereby there is demand particularly at upstream supply chain. Such rises in variability in demand have negative impact on the efficiency of the supply chain; the rises in variability further prompt a rise in inventory excessively. Chatfield, Kim, Harrison, & Hayya (2013) have assessed the bullwhip effect and researched an agent based simulation and case based multi agent system was recommended to minimise the effects of bullwhip.

Ying & Li (2012) in their study have discovered that effective forecast and better demand planning lead to smaller effects of bullwhip. Balasubramanian, Whitman, Ramachandran & Sheelavant (2014) argue that demand variability has impact on procurement and profitability of firms.

2.6. Collaborative Demand Planning

According to Szozda & Werbińska-Wojciechowska (2013) collaborative demand planning requires well established procedures for forecasting methodology, consistency with strategic levels and aggregation levels. The main input is the type of information that is shared such as historical sales volumes, previous forecasts, geographical information, forecast errors, past promotions, seasonal factors and any other relevant customer-level data.

Min & Yu (2013) argue that there are benefits from joint planning, controlling and designing a supply chain as whole through inter-organisational integration and inter-functional integration, such collaborative planning may lead to enhanced supply chain visibility and improve order forecasts through continuous communications among various supply chain partners (Panahifar, Heavey, Byrne & Fazlollahtabar, 2015).

Collaborative demand planning assists in overcoming general problems that come with traditional forecasting however, realising such benefits come with challenges. As a result of complex nature of collaborative forecasting methodology, there are various challenges which are categorised by Panahifar *et al.* (2015).

- The human interactions challenges and biasness
- Old behaviours cause challenges
- The definition of accountability and communication are also a challenge

Min & Yu (2013) further argue that despite the promises mentioned above, there obstacles that come with the collaborative demand planning which includes lack of internal alignment, technical incompatibility among supply chain partners and available of adequate technology to support such initiatives.

2.7. Lead time

Treville, Ketokivi, & Singhal (2017) describe the lead time as time between the beginning of the process up to the end of process. It consists of the first effort of requisition initiation to purchase goods and services. In the procurement environment, lead time consists of identification of need time, selection of goods and services and appointment of suppliers, furthermore, negotiations with suppliers, ordering and payment are included as lead time. The process of procurement has variable lead times depending on the complexity of the procurement, the type of procurement method being pursued, the value in monetary terms, the workload in the Procurement Unit and the contracting document being utilised (Rouse, 2018).

Interest and research in lead time reductions was originally awakened by Just-in-time production, though the reduction of lead time was not emphasised in the literature of Just-In-Time, eradication of waste and extra inventory were stressed (Gupta 2012).

2.7.1. Demand planning, lead time and procurement

Lead time is one of the key indicators of performance, it also serves a crucial measure of service level agreements and it is also a contributor to manufacturing costs and high sales (Hopp & Spearman, 2000). Lead times might vary with factors such as arrival rate, variability and batch size is essential for effective planning and scheduling. According to Bowersox, Closs & Cooper, (2010) procurement decisions were mainly based on price that suppliers offered. Currently the choice of supplier is not dependent on price only but also on the cost of time that will take the delivery to reach the destination. Christopher, Lowson & Peck (2011) argue that the procurement process has become complex as the decision making is not based on cost efficiency only but it must also take into consideration the responsiveness of goods ordered.

One of the basic issues in many organisations is to meet the customers' order cycle and logistics lead time, the main objective is to find the cause of the lead time gap. Christopher *et al.* (2011), describe the customers' order cycle as the amount of time the customer is able and willing to wait until goods or services are delivered and

describes logistics lead time as the amount of time that takes the manufacture or firm to process goods and services after receiving the order until the actual delivery of services and goods. Christopher *et al.* (2011) further argue that there are possible ways of reducing or closing the time gap, firstly the reduction of logistics lead time with the assistance of supply chain tools such as mapping and management of bottlenecks, secondly demand planning and visibility must be increased to reduce the customer is willing to wait to receive goods.

Firms have traditionally utilised inventory with the intention of closing the lead time crack (Ammar, Dolgui, Hnaïen & Louly, 2014). Inventory is increased using forecasts to foresee the needs of customers before customers start placing orders or demanding the product or service. However, it must be noted that demand forecasts are never accurate, even sophisticated technologies do not provide accurate forecasting. Christopher *et al.* (2011) state that due to errors in forecasting, the inventory will always be too little or too much, and the as the forecasting errors increase the lead time rises.

Davis & Sheldon (2016) asserts that the objective of demand planning is not necessarily the prediction of future with absolute divinatory certainty of the events that will occur, but to ensure success over a long term. The challenge is to maintain the level of success or to gain success. The macro-environmental factors such as economy, political and technological have impact on forecasting. The economic factors such as change in interest rates and the prices of fuel impact the demand of products (Agaba & Shipman, 2014).

2.8. Impact of demand planning on procurement plan

As discussed in section two, procurement plan plays a role in procurement processes. Deme (2016) argues that procurement planning is also a key to project activities. The importance of planning seems to be underemphasized at the initial stages of procurement (Kingori, & Kwasira, 2016). Eugene (2015) asserts that effective procurement planning is essential for all procuring entities in the implementation of the purchasing objectives for the following reasons in the Table 2.3 below:

Table 2.3 Reasons for implementation of procurement planning

Reasons for implementation of procurement planning
➤ An effective plan saves time and money
➤ An effective plan serves as a conduit to achieving entity's objectives
➤ An effective plan ensures compliance with regulatory policies
➤ An effective plan provides a framework to guide procurement officers in the achievement of their tasks and duties.

Adapted from Eugene, T.2015. Implementation of procurement plan

Eugene (2015) argues that the first benefits are realised in the procurement through the implementation of the best procurement policies and procedures guided by the law and regulations in ensuring transparency and competitiveness. Secondly, the objectives of procurement are realised when effective and effective procurement plan is in place and followed.

Biwott, Bogonko & Kibet (2017) corroborate that having the procurement plan is the necessary and significant phase in achieving the procurement objectives. The procurement plan assists organisations to monitor the procurement objectives and implement the necessary steps.

According to New South Wales Procurement (2015) the procurement process has three stages as evidenced in Figure 2.5

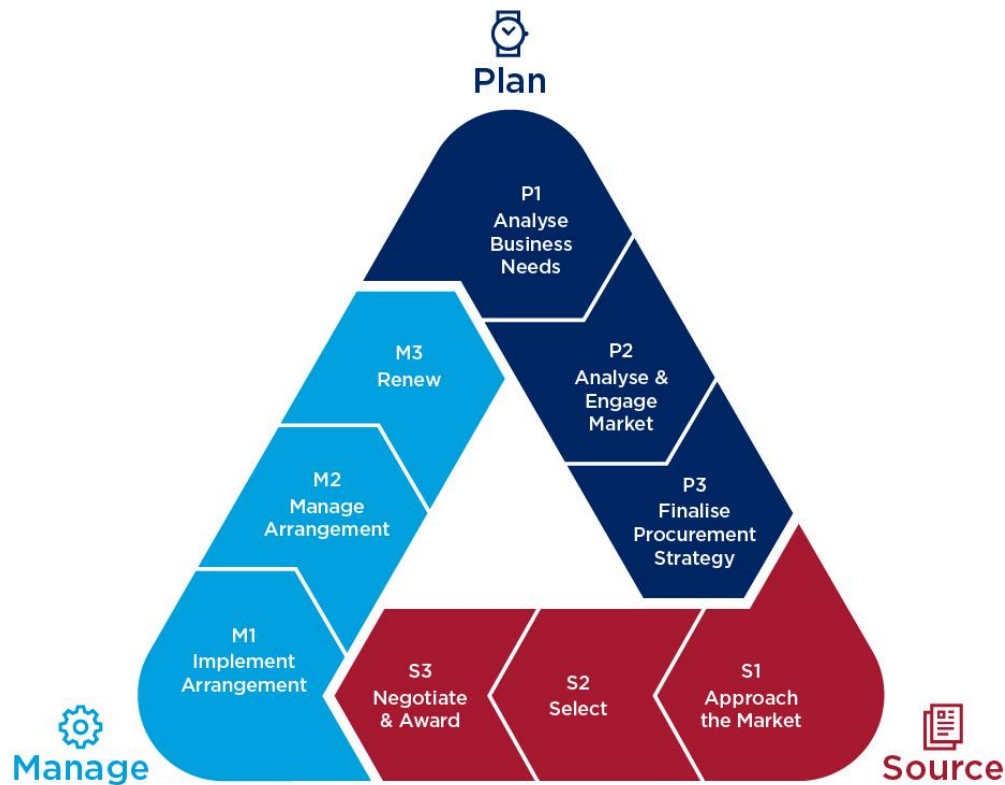


Figure 2.5 Stages of Procurement Process

Adapted from New South Wales Procurement 2015. NSW Procurement Approach

According to New South Wales Procurement (2015) demand planning involves the analysis of business needs which is a multi-dimensional expression of the requirements of the business. It's the process that undertakes the market analysis, engages the market and finalise procurement strategy. The second process in procurement is sourcing that involves approaching the market, selecting the supplier, negotiating contracts and award. The last process is management of implementation and renewal of new contracts.

Monczka *et al.* (2015) asserts that procurement process begins with the recognition that the user department needs goods and service that come in form of raw materials, expertise or virtually anything else that is required. In other instances, the

procurement department is aware of goods and services that the user department may require due to repetitive purchases or procurement plan with a proactive method of procurement.

Hugo & Badenhorst-Weiss, (2011) corroborate that the need for goods and services originates from the user department and also critical for user department to identify the needs in time in order to avoid urgent or emergency orders.

Deme (2016) further argues that procurement planning is supported by demand planning with the involvement of the other business units such as operations and other units. Delay in procurement or even the procurement of services and goods that is not happening lead to dissatisfaction and time-consuming of detours when procurement is not happening as expected.

2.9. Inaccurate demand planning

It took a long time before the importance of demand amplification or bullwhip effect was recognised although it had been in the forefront of supply chain management for a while (Wang, 2016). Bolarin, McDonnell & Garcia (2013) argue that logistics is of strategic importance and the role of information systems and technology is critical. It was highlighted by accelerated development of supply chain management caused by globalisation. Manufacturing companies, factories and other supply chain partners experience unexpected fluctuations inventory demand. A minor change in consumer behaviour has an impact in the whole supply chain (Bolarin *et al.*, 2013)

The uncertainty and increased risk management significance are the serious consequences of demand amplification (Cappgemini, 2015). Towill, Zhou, & Disney (2012) established that during a down turn there is scarcity of right quantity of products due to amplification. Consumers buy products motivated by markdowns offered by retailers, such changes have potential of reducing sales in following periods or season, therefore during upswings, consumers buy more stock at discounted prices and decreases sales of the next period (Warburton & Stratton 2014).

2.10. Ethics, integrity and transparency within procurement

According to Hugo & Badenhorst-Weiss, (2011) ethics is the set of moral principles or rules of conduct or values that guide the behaviour of people. In the business context; ethics refers to manner in which social principles around justice and fairness are recognised throughout the business relationship. The South African National Treasury, (2016) argues that ineffective demand planning and ineffective procurement plan contribute to large number of deviations from supply chain management processes and price escalations. Selomo & Govender, (2016) argued that demand planning, execution of procurement plans, control of procurement processes and monitoring of the activities and projects affect procurement performance and ethics.

2.11. Information Technology

Information technology support is one of the most critical factors in the improvement of demand management performance. According to Hilletoft (2013) demand process management and supply process management both need information technology, not only as a prerequisite resource for both processes of demand management and processes of supply, but also organising the two processes within the organisation and also external the organisation. Hilletoft (2013) further points out that even though there are so many types of information systems and technology for demand planning and procurement management, the successful integrations still remains a challenge, and the problem in integrating procurement and demand lies with information technology. He advises that more attention and investigation to information technology.

Al-Mudimigh, Zairi & Ahmed (2014) emphasise on the importance of integrating procurement management and demand management, however the challenges lies in the creation of environment that is connected supported by information systems and technology, continuous improvement and optimization of information system and technology to offer and share information instantly; give the demand information from consumers and any other important information for procurement and supply chain management as a whole.

Some authors (Hilletofth, 2013; Lau, 2012) emphasise on the importance of information technology to provide data in real time. Melo & Alcantara (2016) made findings on information technology advanced companies in the supply chain, that did not only assist in able to sharing information in real time with internal and external teams and supply chains but it was also used to generate a measurement to assess demand planning performance.

2.12 Demand planning, procurement and management

According to Melo & Alacantara (2016) demand planning involves all units with the organisation. People must participate in order to have effective demand planning, therefore, the involvement of top management in the demand planning and procurement is significant in ensuring adherence and commitment to the plan.

Additionally, the participation of top management in the demand planning assists in identifying business opportunities and facilities of different teams to participate and encourage teamwork (Prasad, 2014). Croxton, Lambert, Sebastian, Garcia-Dastugue & Rogers (2011) argue that demand planning requires a comprehensive understanding, the teams must identify the long and short planning requirement and these is significant to seasonal demand and align according with the procurement.

Apiyo & Mburu (2014) found that the competency of staff within the supply chain management including the demand planning and procurement must have adequate knowledge of demand planning and procurement in order to achieve efficiency and effectiveness.

2.13. Conclusion

The literature review chapter provided the summary of preceding research on the impact of demand planning on procurement processes and performance. Various sources which include books, articles and journals were visited in reviewing arguments of various researchers around the impact of demand planning on procurement processes and performance.

CHAPTER 3

RESEARCH METHODOLOGY

3.1. Introduction

The research methodology is explained in this chapter and how it is used in this study. The methodology used was a mixed methods research framework incorporating both quantitative and qualitative methods and measures. This was necessary in ensuring that respondents in this study were not denied the opportunity to express their opinions on the subject matter that being researched, though research objectivity is guaranteed. Hence, the geographical area where the study was conducted, the study design, population, sampling method, as well as the detailed explanation of the mixed research, are explained in this chapter.

3.2. Aim of the Study

The study aimed to explore and understand the effects of demand planning on procurement processes and performance. The following three primary objectives were identified to address the aim and purpose of the research:

- To find out the consequences of demand planning on procurement
- To assess the effects of demand planning on procurement processes
- To establish whether demand planning has any effects on procurement bottlenecks

3.3. Research

Research is defined in many ways by different scholars and in various fields of study. Online Oxford Dictionary (2018) defines research as investigation that is systematic with the purpose of discovery facts and using the fact to reach new conclusions. According to Plutchick (2004) research has its origins in a term which means to go around or explore and it is a combination of “Re” and “Search” literally meaning the repletion of search. A conclusion may therefore be made that research is a planned

activity, with the objective of establishing new facts and solutions to a particular problem.

3.4. Research Methodology

There are various definitions of research methodology. Kothari & Garg (2015) describe research methodology as procedures and processes of collecting data and information that will be used and assist in decision making within the business, historical and present information, surveys, research techniques, interviews are all part of methodology. According to Kallet (2014) research methodology is a systematic investigation undertaken in order to discover new facts and to get additional information. The researcher identifies a problem and takes an action to investigate using relevant techniques and methods to collect data, analyses and make proper implementation. Therefore, research methodology involves the procedures in a particular study or inquiry. Schwardt (2015) also summarises the definition of research methodology as theoretical techniques that guide how the research will unfold.

3.5. Research Design

The exploratory research was used in this study, according to Creswell (2013) and Saunders, (2012) exploratory research is used when the researcher requires exploring and discovering new information about a phenomenon that is not well understood. The exploratory research designs are also applicable to research projects that are investigating a matter that has uncertainty and understanding of the problem is limited (van Wyk, 2015).

The study aimed to explore and understand the effects of demand planning on procurement processes and performance using case study approach. Gerring (2014) explains that case studies come in different sizes. It depends on what object is under investigation; the object might be an individual, family, business or country. Case study research may be either quantitative or qualitative, or some combination of both.

Yin (2012) defines a case study as *“an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident. The case study inquiry copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result benefits from the prior development of theoretical propositions to guide data collection and analysis”* (Yin 2012 p. 18).

3.5.1. Data Collection

It has been established that the study followed a case study approach and exploratory. According to Gerring (2014) conventionally, qualitative research has always associated with case studies, however researchers need not to be limited to qualitative techniques and the case study research may be either quantitative or qualitative data collection and analysis techniques. Data will be collected and analysed through qualitative and quantitative techniques.

The researcher chose the mixed method of data collection and analysis to benefit from the advantages of both methods in this study, and to use multiple kinds of data that will be collected with different strategies and methods in ways that reflect complementary strengths and non-overlapping weaknesses.

Both methods, quantitative and qualitative were used concurrently to find an in-depth information and knowledge on the effects of demand planning on procurement processes and performance. The combination of the two data collection methods endeavour to use different approaches to answer research questions without the constraints of one method approach. The mixed methods also include the techniques such as the data collection questionnaire that includes both methods of research.

According to Johnson (2014) the combination of two methods provides the possibility of unearthing evidence that might be possible by using one method. Therefore, detailed answers to research questions are available to the researcher for analysis (Harwell, 2011). There are various reasons to use the mixed research methodology.

Sale, Lohfeld & Brazil (2015, p. 490) made the following statements to explain the use mixed research methodology:

“Both approaches may be used together as they the same goal and fundamentals of understanding the complexities of research requirements and goals. The two methods have cohesive logic and similar rules that are applied in research. A combination of both approaches provides a variety of perspectives from which a particular phenomenon can be studied and they share a common commitment to understanding and improving the human condition, a common goal of disseminating knowledge for practical use. Both approaches provide for cross-validation or triangulation – combining two or more theories or sources of data to study the same phenomena in order to gain a more complete understanding of that phenomenon (interdependence of research methods) and they also provide for the achievement of complementary results by using the strengths of one method to enhance the other (independence of research methods)” (p.490).

The individuals in the sample will meet the following criteria:

- Staff members within the supply chain management unit within the agency
- Management, Unit managers and any other staff member directly or indirectly involved with procurement activities within the agency

According to Saunders *et al* (2012) data may be collected in the following methods

- Experiments
- Observation
- Unstructured or semi-structured interviews
- Questionnaire, structured or self-administered

3.6. Study Area

The study was conducted in Gauteng Province of the Republic of South Africa; it was conducted in a government entity, which is the agency of the Department of Transport. The agency is governed by the Public Finance Management Act (PFMA), as well as all other regulations, prescripts and practice notes issued by the National Treasury. The Act regulates all procurement processes in line with Section 217 of the Constitution (1996). According to the Act, procurement processes must be efficient and effective in managing the finances, assets, revenue, expenditure and revenue of government.

3.7. Target Population and Size

Population is a group of things, objects or individuals with analogous characteristics (Killick, 2015). Kumar (2015) refers to the population as the set of all objects that possess some common set of characteristics with respect to some research problem.

The agency referred to in this study has various units such as Operations, Communications, Human Resource Management, Legal and Finance. For the study, the population included all the personnel in the SCM operational department of the agency. The total population was made up of thirty staff members. The targeted all staff members within the agency. The experience of the participants varied, spanning from a couple of years of experience to decades of experience.

3.8. Sampling Techniques

3.8.1. Sampling

Lathan (2013) describes sampling as a method that involves taking a representative selection of the population and using. There are types of sampling which is probability and non-probability sampling. Saunders, Lewis & Thornhill (2012) define sample as the relevant subset of the population, the sample must be appropriate to ensure the credibility of results. The researcher has identified the organisation as the main source of data. The researcher used a census approach and is explained in the next section, all staff members of the agency were given the questionnaire to participate

3.8.2. Census approach

The researcher employed census approach to ensure that all staff members with the agency have an opportunity to participate in the study. It is called a census approach as data is gathered on every member of the population (Killick, 2015). Population is commonly large collection of objects or individuals, if the researcher intends to conduct the research on all elements of research area that research is referred to as census study (Arikunto, 2016). The researcher therefore surveyed the whole population within the identified organisation. This was possible due to manageable number of employees for this study, the agency had 102 employees when the study was undertaken.

3.9. Research Instruments

2.9.1 Survey in a form of questionnaire

Survey in a form of questionnaire was used as the data collection instrument, systematically prepared with a set of questions deliberately designed to elicit responses from the respondents. Rahi (2017) defines questionnaire as an organised form which entails a set of formalised questions that either printed or written, the questions are intended to collect information about a subject or subjects from a group of respondents or one respondent.

Bird (2014) describes questionnaire as a technique used to collect data from respondents about a particular topic, the sequence of questions answered by the respondents are verbal or written. The questionnaire prepared by the research in this study contained a systematically compiled and organised sequence of questions with the objective of bringing out information provided insights into the topic under the study, which are the effects of demand planning on procurement processes and performance.

The researcher in this study used questionnaire for data collection in the study as it provides the opportunity of collecting data in a short period of time and in a relatively cost effective way. The questionnaire will have both closed questions and open-ended questions. The rating scale will be used, which includes verbal and numerical labels. Over and above the structured questionnaire, the researcher will provide

open ended questions in order to generate insights not otherwise available from structured quantitative data alone.

The questionnaire comprised five sections and presented as follows:

- Demand planning on procurement
- Demand planning on procurement processes
- Demand planning on procurement bottlenecks

The questionnaire was distributed to the participants within a period of three days. It took fifteen minutes to complete. Upon completion by the participants, the researcher took the questionnaire for analysis.

3.10. Pilot testing

The researcher used pilot testing to find how respondents understand the questionnaire. The researcher used this process to determine the time of fifteen minutes that took each respondent to complete the questionnaire. The researcher revised certain questions whereby respondents struggled during the pilot testing; therefore questions were better understood during the actual data collection process.

3.11. Validity and Reliability

Validity refers to the credibility and strength of research. Cook & Campbell (2016) define validity as the instrument that measures the extent to which the researcher wanted or wished to achieve in measurements. It also focused on whether the instrument in use is actually achieving the intended goals of the researcher.

Reliability, on the other hand, refers to the consistency in measurements. Trochim, (2012) argues that reliability of study measures the level of biasness, if any, in the study, the consistency of measurements across techniques used. The Test-Retest Reliability method was used in this study through a measure of repeated measurements device. Results were therefore compared to determine similarities. In order to ensure validity, the questionnaire was distributed to the respondents.

3.12. Data Analysis Tools and Method of analysis

The research data was collected through questionnaire, the open ended questions were analysed through the thematic analysis. The research followed a thematic analysis approach in analysing qualitative data. Braun & Clarke (2016) explain thematic analysis as a method of generating codes, building themes, identify trends, relationships mapping and development of strategies for identifying useful information to answer the research question. The use of coding assisted the researcher to group and organise data that is similar in one category (Saldana, 2016). The quantitative data was analysed by Statistical analysis, the computer package for statistical analysis, known as SPSS was used to analyse the results.

3.13. Bias

The researcher anticipated habituation bias. Sarniak (2015) defines habituation bias as the bias whereby respondents to the questionnaire answer the questions that are phrased and worded in the same manner. Answering questionnaire required energy and attention. The researcher worded and phrased the same questions differently in order to obtain the observations and opinions of the respondents that are bias free or minimised biasness. This method was used to overcome biasness.

3.14. Ethical considerations

Ethical clearance was obtained from the University of KwaZulu-Natal's Ethics Committee. Permission was obtained from the government agency. The anonymity and confidentiality of the respondents were ensured during the administration of the questionnaire. The anonymity of the government entity was also maintained as required by the organisation that participated in the study.

3.15. Conclusion

This research methodology chapter explained the research methodology employed to gather and analyse the finding in this study. The chapter further explained aim of the study, research design, research instrument, validity and reliability, target population, sampling techniques, data analysis, bias and ethical consideration.

CHAPTER 4

DATA PRESENTATION

4.1. Introduction

This chapter presents the results of the research and describes the analysis of the results from the data collected by the researcher. The findings are based on the questionnaires that were distributed to the respondents. Data were analysed to explore effects of demand planning on procurement processes and performance within the agency of the department of transport. Data were obtained from self-administered, completed by 94 employees (n=102), a 92% response rate.

A total of 94 questionnaires were received and all questionnaires were used in this study. The reasons for non-participation by the remaining 8% of employees are not known.

4.2. The questionnaire consisted of five sections and data will be presented in the following order.

- a) The first section comprises of demographic data which is age and years of experience
- b) The second part of the questionnaire comprises of data describing the impact of demand planning on procurement
- c) The third section comprises of data describing the impact of demand planning on procurement processes
- d) The fourth section comprises of data describing the impact of demand planning on bottlenecks within procurement
- e) The last section is open ended questions comprising of data that describe consequences of demand planning on procurement, procurement processes, procurement bottlenecks, ethics, integrity and transparency within procurement.

4.3. Methods of data analysis and presentation of data

Descriptive analysis as part of quantitative statistics was used to identify frequencies and percentages to answer all questions in the questionnaire. Qualitative research was used for open ended survey questions; data was therefore sorted and prepared prior to analysis, the preparation of data involved formatting the data in a systematic manner to ensure consistency throughout the questionnaire and transcript of open ended questions. Each transcript was scanned to find the key themes emerging from the open ended questions, each theme was coded using descriptive key words and grouped themes into categories utilised in the literature review. The discussion of results follows the same format used in the questionnaire.

- a) The first section comprises of demographic data which is age and years of experience
- b) The second part of the questionnaire comprises of data describing the impact of demand planning on procurement
- c) The third section comprises of data describing the impact of demand planning on procurement processes
- d) The fourth section comprises of data describing the impact of demand planning on bottlenecks within procurement
- e) The last section is open ended questions comprising of data that describe consequences of demand planning on procurement, procurement processes, procurement bottlenecks, ethics, integrity and transparency within procurement.

4.3. Descriptive statics of respondents

The first section comprises of demographic data which is age and years of experience.

4.3.1. Demographic data

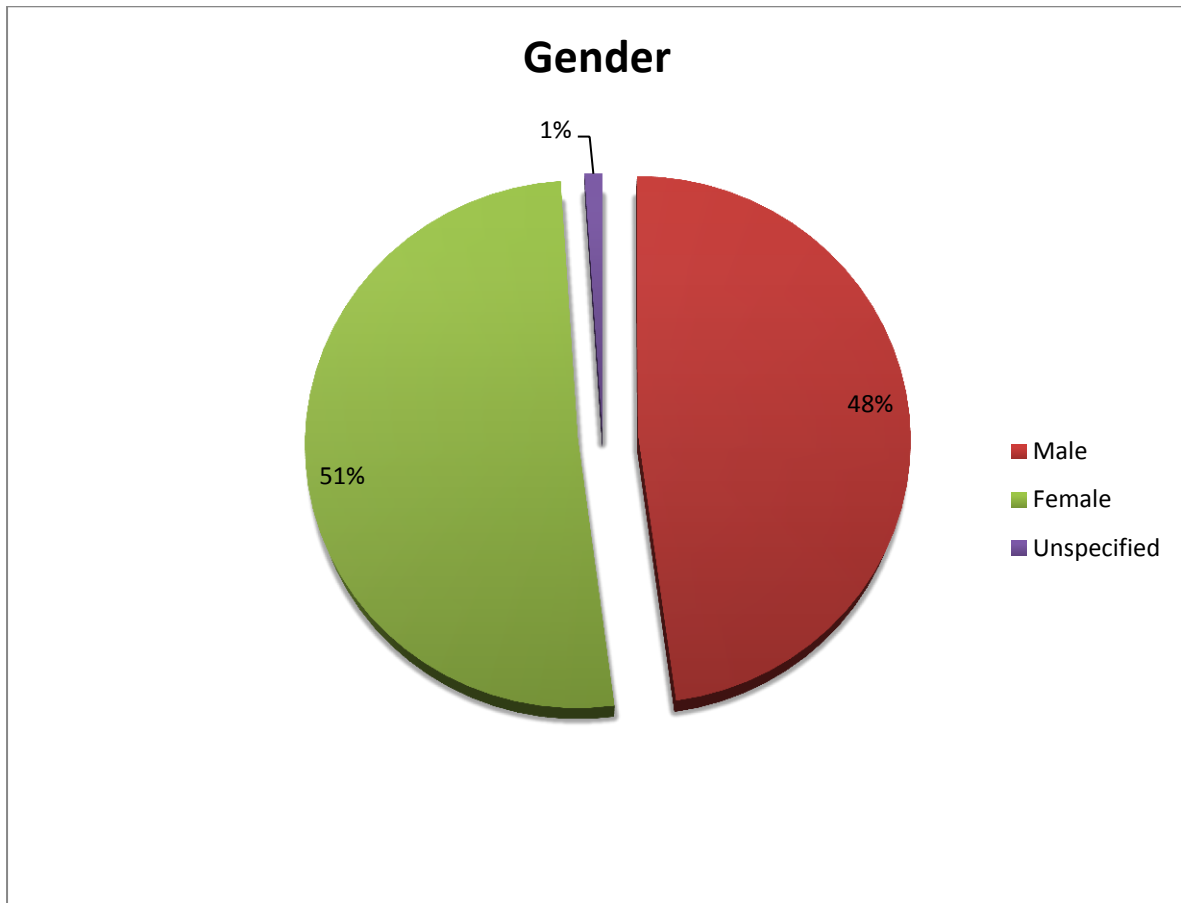


Figure 4.1. Participants' Gender

Figure 4.1 depicts the gender characteristics of the respondents. 51% of respondents were female, 48% male and only 1% selected unspecified from the given options. Generally, the gender of the respondents was balanced.

Table 4.1. Respondents' years of experience

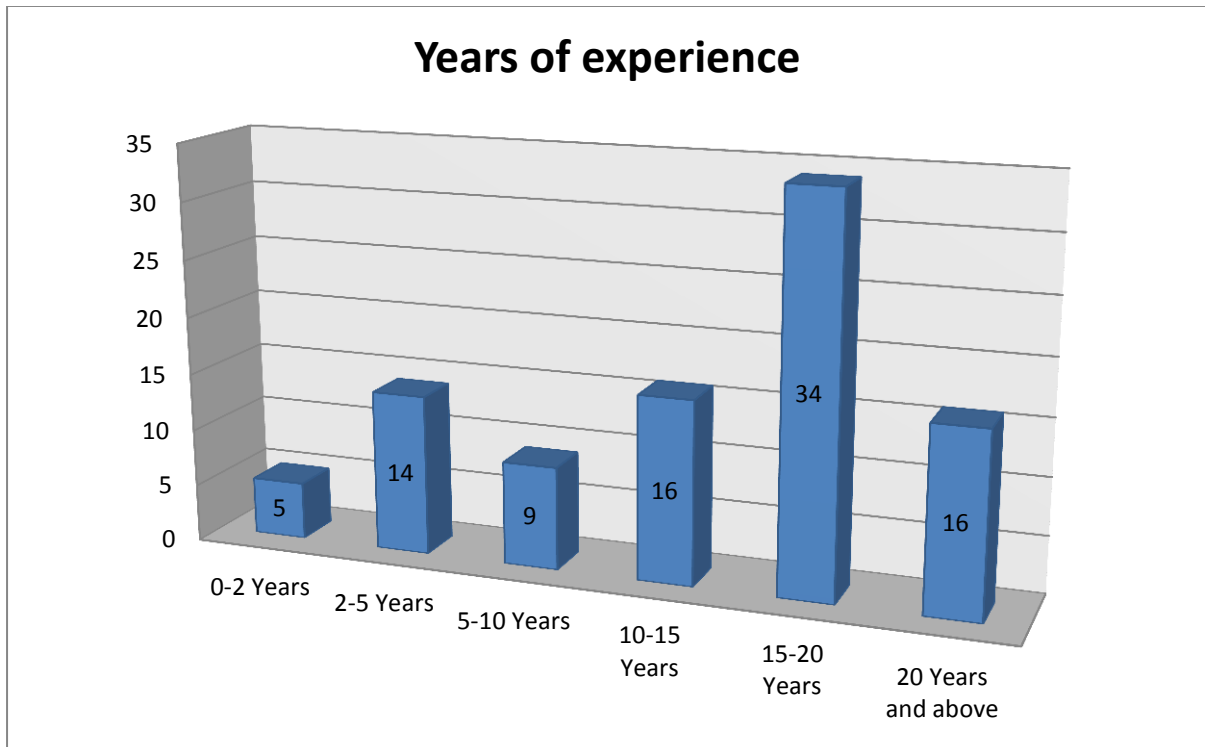


Table 4.1 depicts the number of years that respondents have been involved in procurement activities directly or indirectly. In the questionnaire, participants were requested to tick the appropriate box which had options of the number of years of experience. The options ranged from 0 to 2 years, 2 to 5 years, 5 to 10 years, 15 to 20 years and 20 years and above. 36% respondents have 15 to 20 years of experience, 10 to 15 years and 20 years and above represent 17% each, 5 to 10 years represent 10%, 2 to 5 years represent 15% and final the least experienced which is 0 to 2 years represent 5% of participants.

4.3.2. Demand planning on procurement

The second part of research results comprises of data describing the impact of demand planning on procurement. A likert scale questionnaire contained a series of statements demand planning and procurement, respondents were invited to respond to each statement.

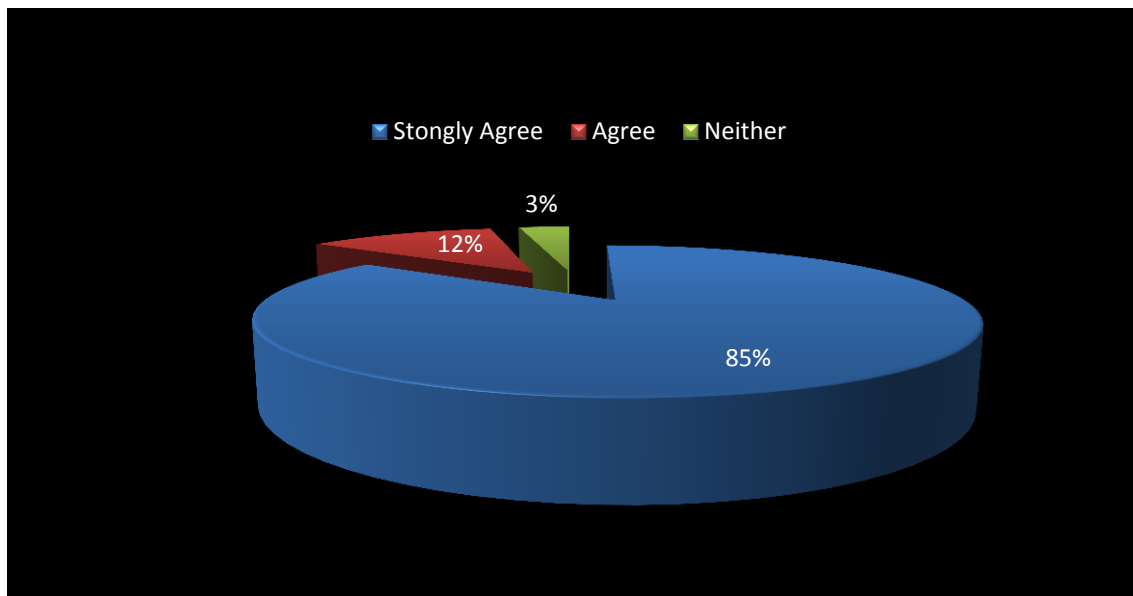


Figure 4.2. Annual procurement plan

Respondents were asked if the demand planning enhances accuracy of annual procurement plan. 85% of respondents strongly agreed to the statement, 12% of respondents simply agreed and the last 3% of respondents were neutral.

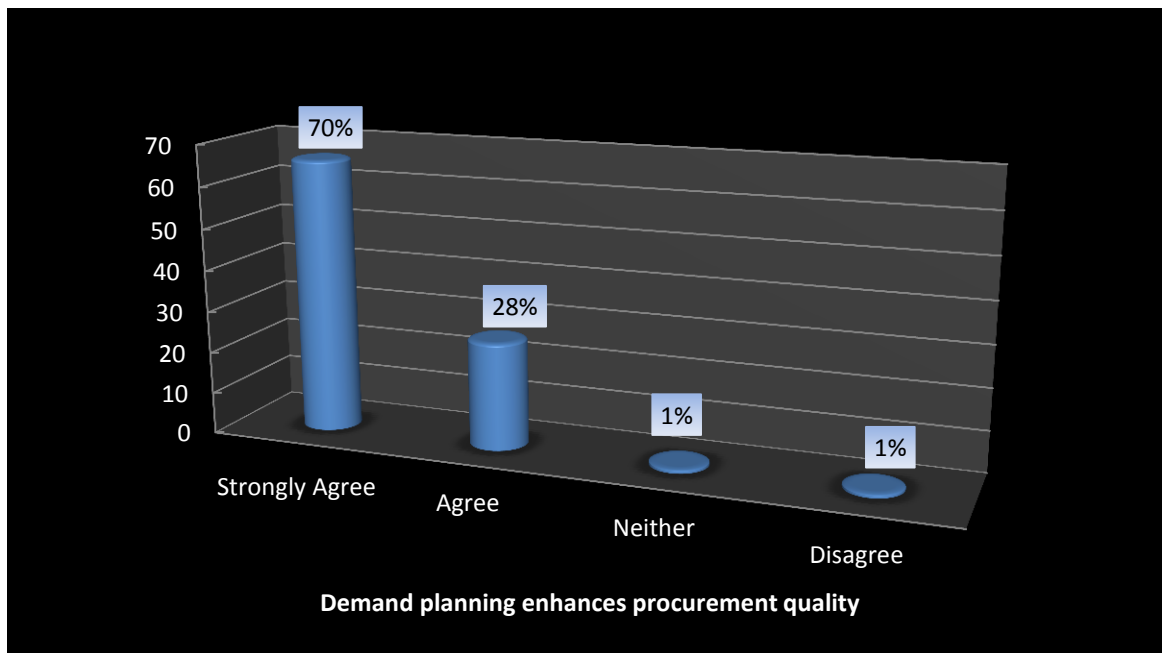
Table 4.2. Demand planning and procurement plan

Demand planning has no impact on procurement plan

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	7	7.4	7.4	7.4
	Agree	13	13.8	13.8	21.3
	Disagree	48	51.1	51.1	72.3
	Strongly Disagree	26	27.7	27.7	100.0
	Total	94	100.0	100.0	

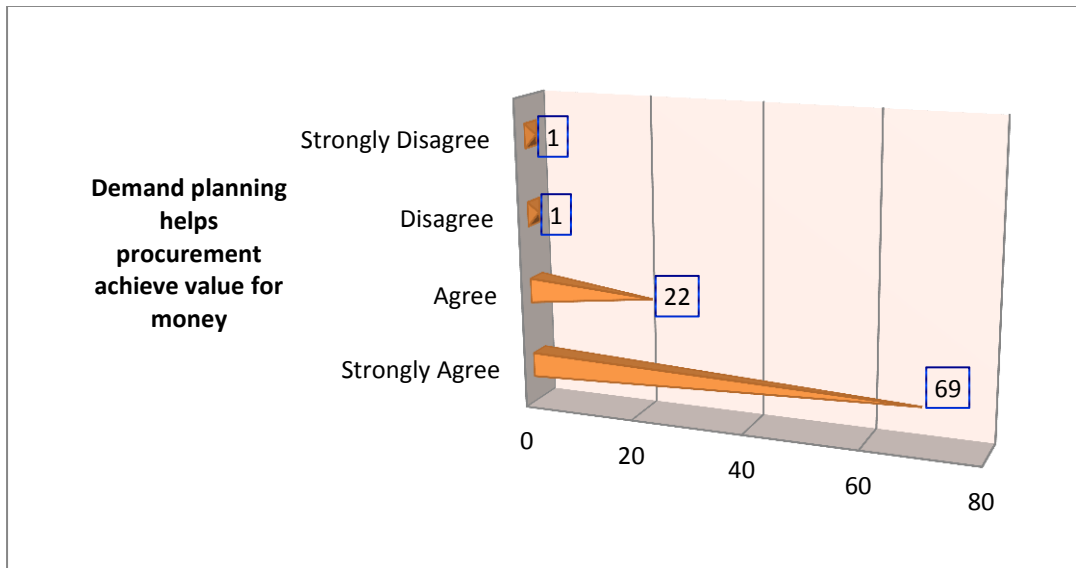
Table 4.2 above depicts that 27% of respondents strongly disagreed that demand planning has no impact on procurement plan, 51% disagreed that demand planning has no impact on procurement plan, 13% agreed with the statement and the last 7% of respondents strongly agreed with the statement.

Table 4.3. Demand planning and procurement quality



Participants were asked if demand planning enhances procurement quality, 70% of respondents strongly agreed that demand planning enhances procurement quality, 1% of respondents were neutral and the last 1% of respondents disagreed with the statement.

Table 4.4. Demand planning and value for money



Participants were asked if demand planning assists procurement achieve value for money, 70% of respondents strongly agreed that demand planning assists procurement achieve value for money, 24% simply agreed with the statement, 1% of respondents disagreed with the statement and the last 1% of respondents strongly disagreed with the statement.

Table 4.5. Demand planning, efficiency and effectiveness within procurement

Demand planning improves efficiency and effectiveness within procurement and user unit

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	59	62.8	62.8	62.8
	Agree	32	34.0	34.0	96.8
	Neither	3	3.2	3.2	100.0
	Total	94	100.0	100.0	

Table 4.5 above depicts that 62% of respondents strongly agreed that demand planning improves efficiency and effectiveness within the procurement unit and that of user department, 34% of respondents agreed with the statement and only 3% of respondents were neutral.

Table 4.6. Demand planning and of attainment of goals

Demand planning has a negative impact on user`s goals and objectives

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	6	6.4	6.4	6.4
	Neither	2	2.1	2.1	8.5
	Disagree	48	51.1	51.1	59.6
	Strongly Disagree	38	40.4	40.4	100.0
	Total	94	100.0	100.0	

Table 4.6 above depicts that 40% of respondents strongly disagreed that demand planning has a negative impact on user departments` goals and objectives, 51% of respondents disagreed with the statement, 2% of respondent were neutral and last 6% of respondents agreed with the statements.

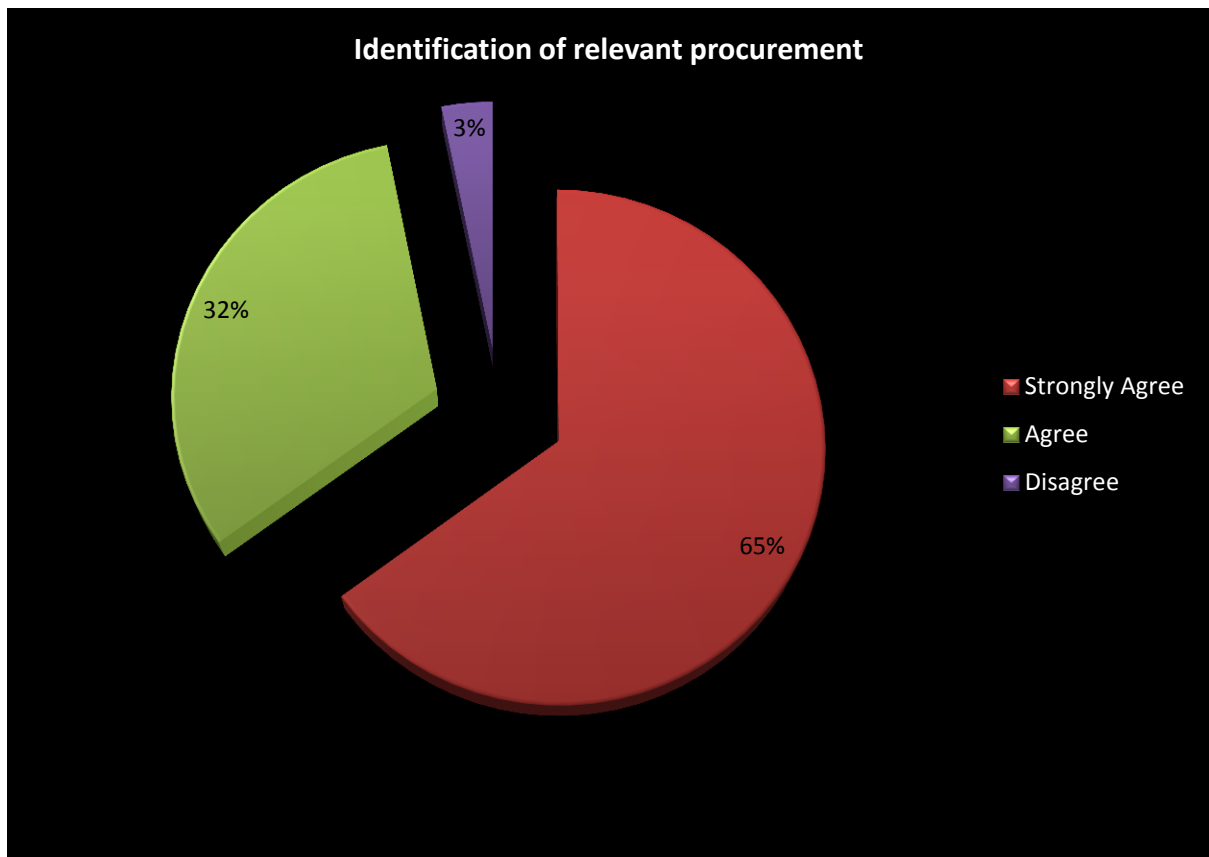


Figure 4.3. Demand planning and identification of relevant issues pertaining to a particular procurement before publication of procurement notices to potential suppliers.

Participants were asked if demand planning enables procurement identify and address all relevant issues pertaining to a particular procurement before publication of procurement notices to potential suppliers. 65% of respondents strongly agreed to the statement, 32% of respondents simply agreed with the statement and last 3% of respondents disagreed with the statement.

Table 4.7. Goals and objectives

Demand planning has positive impact on user`s goals and objectives

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	75	79.8	79.8	79.8
	Agree	18	19.1	19.1	98.9
	Neither	1	1.1	1.1	100.0
	Total	94	100.0	100.0	

Table 4.7 above depicts that 79% of respondents strongly agreed that demand planning has positive impact on user departments` goals and objectives, 19% of respondents agreed with the statement and the last 1% of respondents were neutral

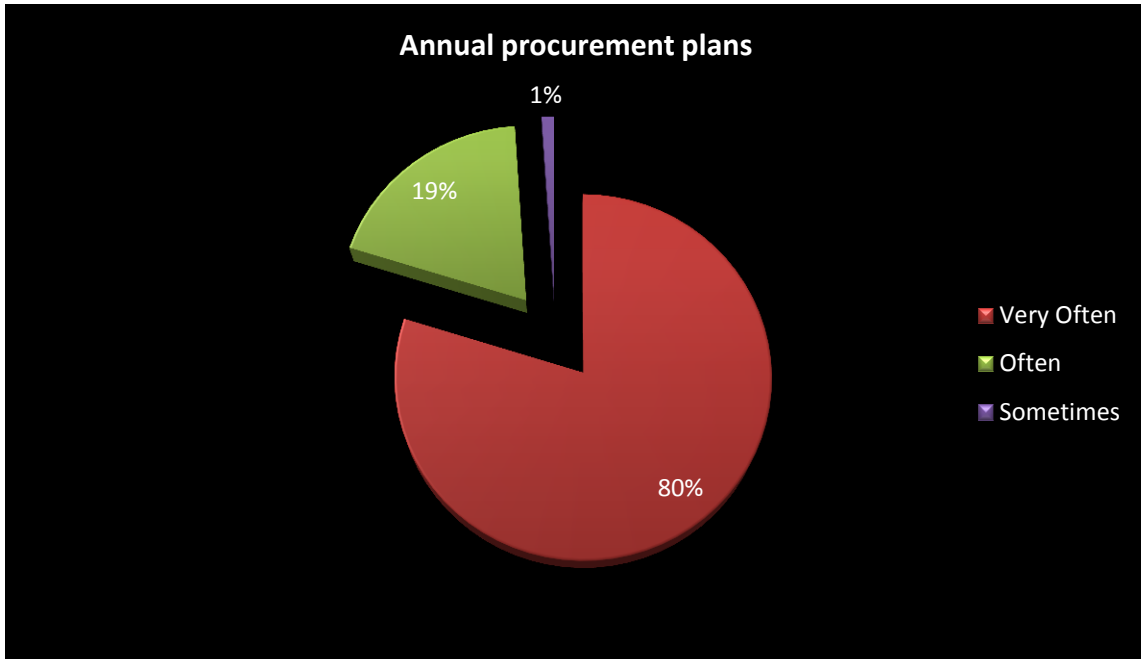


Figure 4.4. Demand planning and annual procurement plans

Figure 4.4 above depicts that 80% of respondents indicated that demand planning very often contributes to achievement of annual procurement plan. 19% of respondents indicated that demand planning often contributes to achievement of annual procurement plan and last 1% of respondents were neutral.

Table 4.8. Demand planning and procurement controls

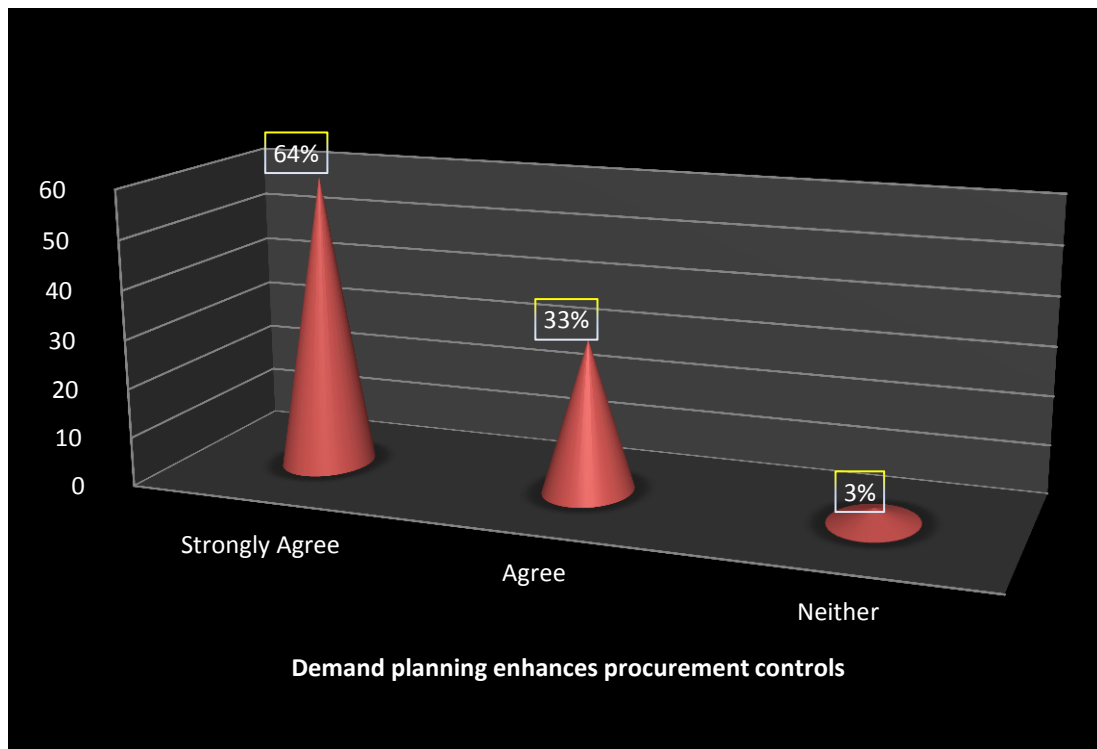


Table 4.8 above depicts that 64% of respondents strongly agreed that demand planning enhances procurement controls, 33% simply agreed to the statement and the last 3% were neutral.

Table 4.9. Procurement rules and regulations

Procurement rules and regulations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	68	72.3	72.3	72.3
	Agree	24	25.5	25.5	97.9
	Neither	2	2.1	2.1	100.0
	Total	94	100.0	100.0	

Demand planning enhances compliance to procurement rules and regulations; this is the statement that was made in the questionnaire to solicit information from respondents. 72% of respondents strongly agreed to the statement, 25% agreed to the statement and last 2% of respondents were neutral.

Table 4.10. Acquisition of goods and services

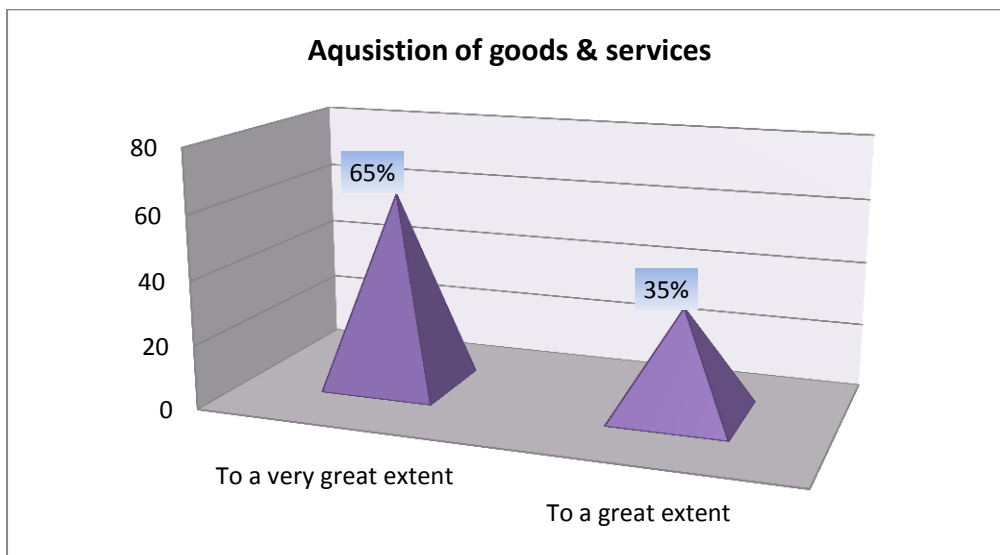
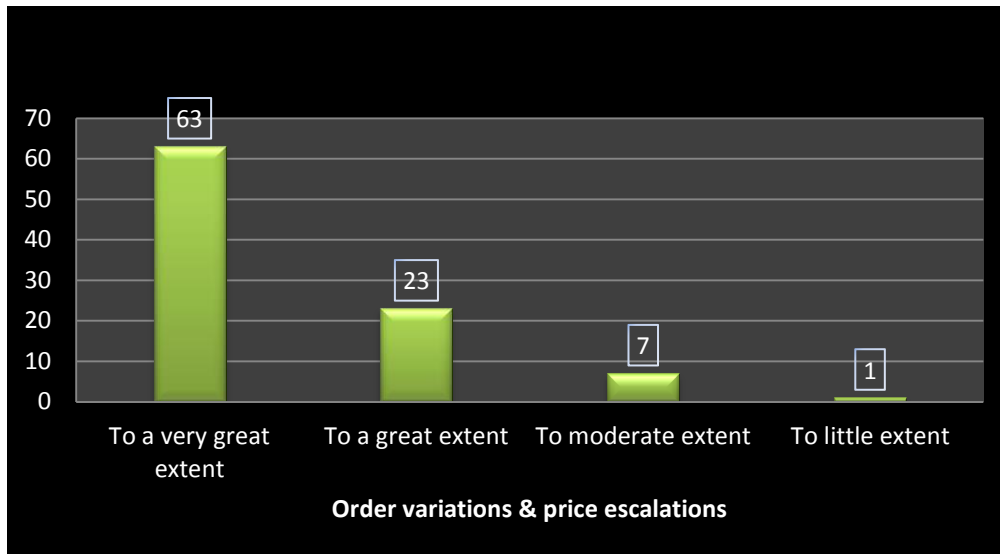


Table 4.10 above depicts that 65% of respondents indicated that demand planning assist in reducing order variations and price escalation to a very great extent and last 35% of participants indicated that demand planning assist in reducing order variations and price escalation to a great extent.

Table 4.11. Order variations and price escalations



Participants were asked if demand planning assist reducing order variations and prices escalations. 67% indicated that demand planning assist reducing order variations and prices escalations to a very great extent, 25% to a great extent, 7% to a moderate extent and last 1% indicated to a little extent.

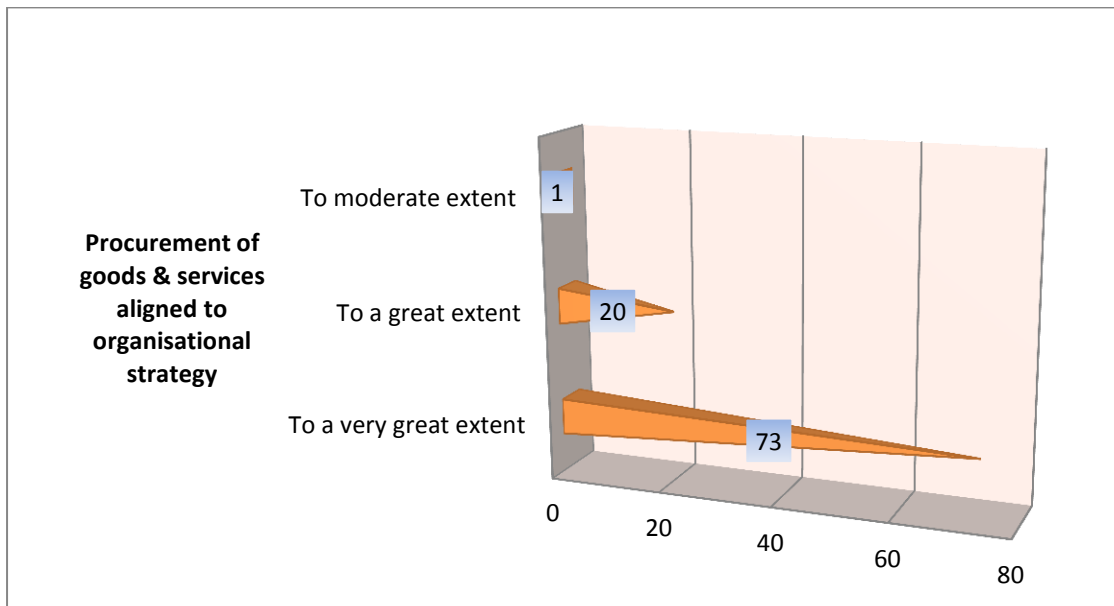
Table 4.12. Demand planning and development of specifications

Demand planning enhances development of quality specifications

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	To a very great extent	73	77.7	77.7	77.7
	To a great extent	17	18.1	18.1	95.7
	To moderate extent	4	4.3	4.3	100.0
	Total	94	100.0	100.0	

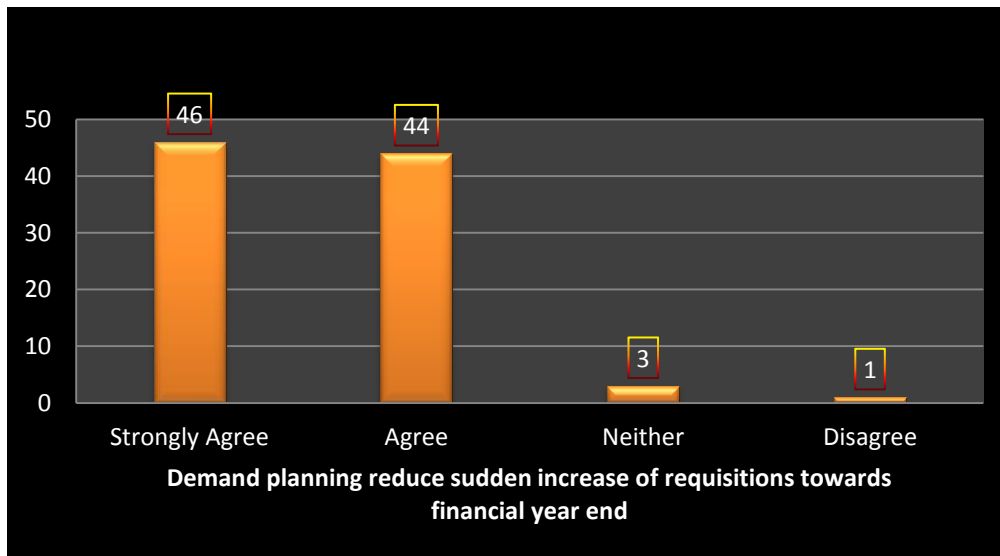
Table 4.12 depicts that 77% respondents indicated that demand planning enhances development of quality specification, 18% indicated to a great extent and 4% indicated moderate extent.

Table 4.13. Procurement of goods and service aligned to organisational strategy



Participants were asked if demand planning assist in procuring goods and services that are aligned to the organisation`s strategy and resource plan. 78% of respondents indicated that demand planning assist to a very great extent in procurement of goods and service that are aligned to organisations` strategy, 21% indicated to a great extent and last 1% of respondents indicated moderate extent.

Table 4.14. Demand planning and sudden increase of requisitions towards the end of financial year



Demand planning reduces sudden increase of requisitions towards financial year end; this is the statement that was made in the questionnaire to solicit information from respondents. 49% of respondents strongly agreed, 47% simply agreed, 3% were neutral and finally 1% of respondents disagreed with the statement.

Table 4.15. Demand planning and procurement turnaround times

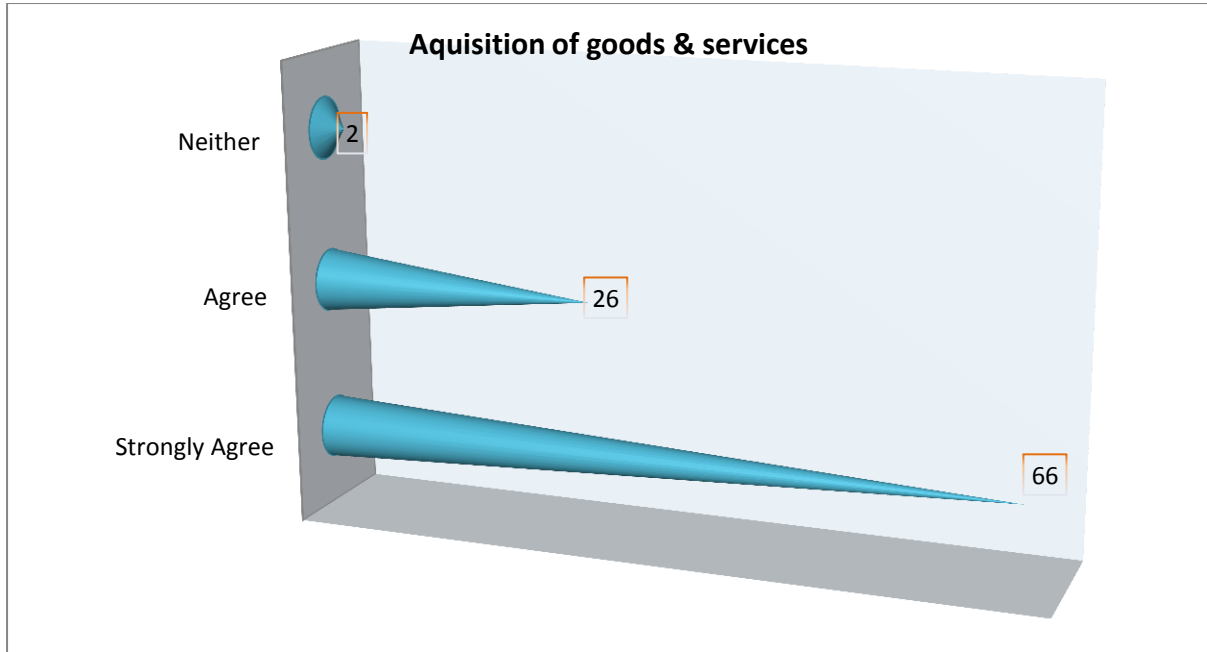
In your opinion, demand planning improves procurement turnaround times

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	67	71.3	71.3	71.3
	Agree	24	25.5	25.5	96.8
	Neither	3	3.2	3.2	100.0
	Total	94	100.0	100.0	

Table 4.15 depicts that 71% respondents strongly agreed that demand planning improves procurement turnaround times, 25% simply agreed and 3% of respondents. Respondents were requested to tick the relevant option from the

provided possible answers in a form of likert scale ranging from strongly agree to strongly disagree.

Table 4.16. Demand planning and acquisition process of goods and services



Respondents were asked if demand planning improves the acquisition processes of goods and services. 70% of respondents strongly agreed, 28% agreed and last 2% of respondents were neutral.

Table 4.17. Demand planning and rising of procurement needs in time

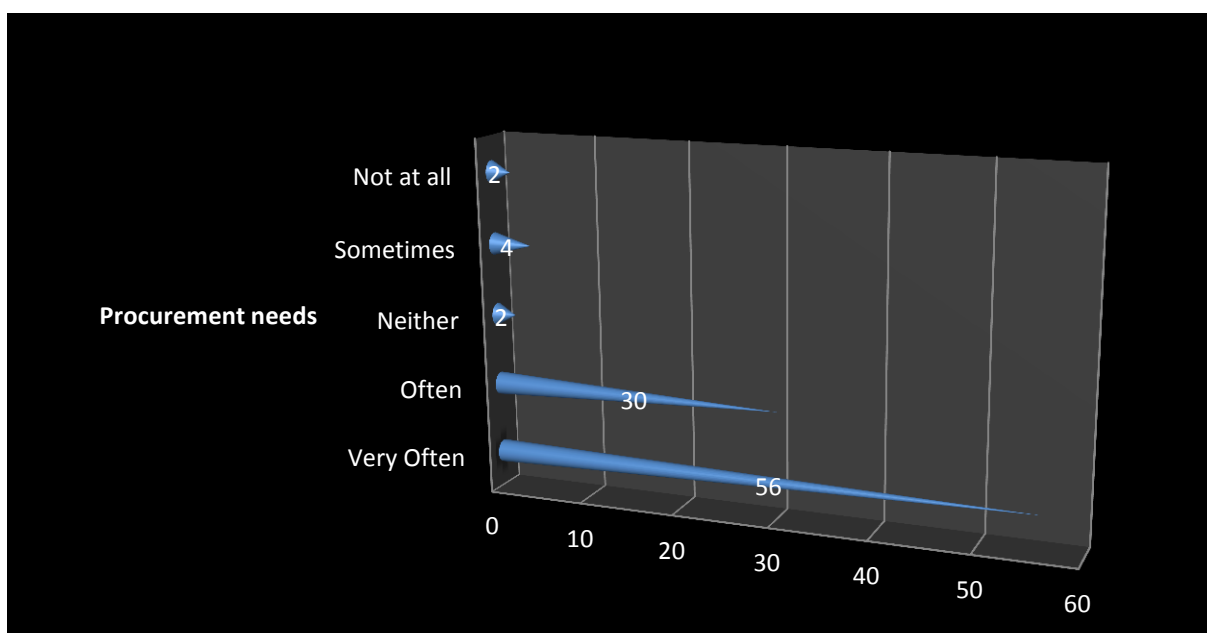


Table 4.17 depicts that 60% respondents agreed that very often demand planning assist in raising procurement needs in time, 32% agreed that often demand planning assist in raising procurement needs in time, 2% of respondents were neutral, 4% indicated that it assist sometimes and the remaining did not agree with the statement at all.

Table 4.18. Demand planning and variability of procurement requisition

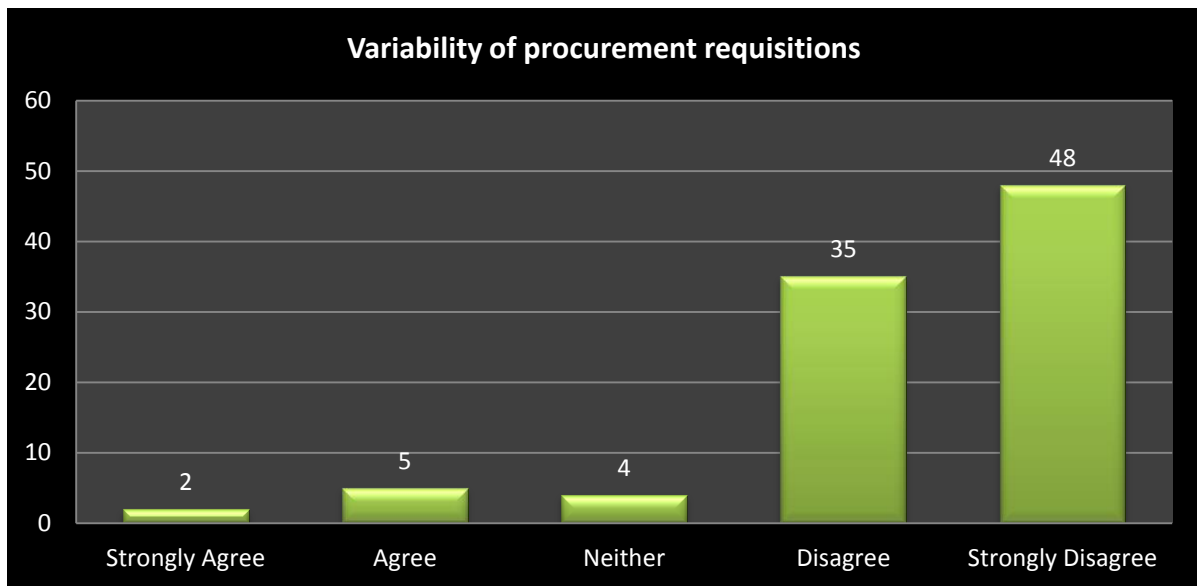


Table 4.18 depicts results of respondents who participated in the above question. The statement made by the researcher was that demand planning has no role on variability of procurement requisition. 51% of respondents strongly disagreed with the statement, 37% simply disagreed, 4% were neutral, 6% agreed and last 2% strongly agreed with the statement.

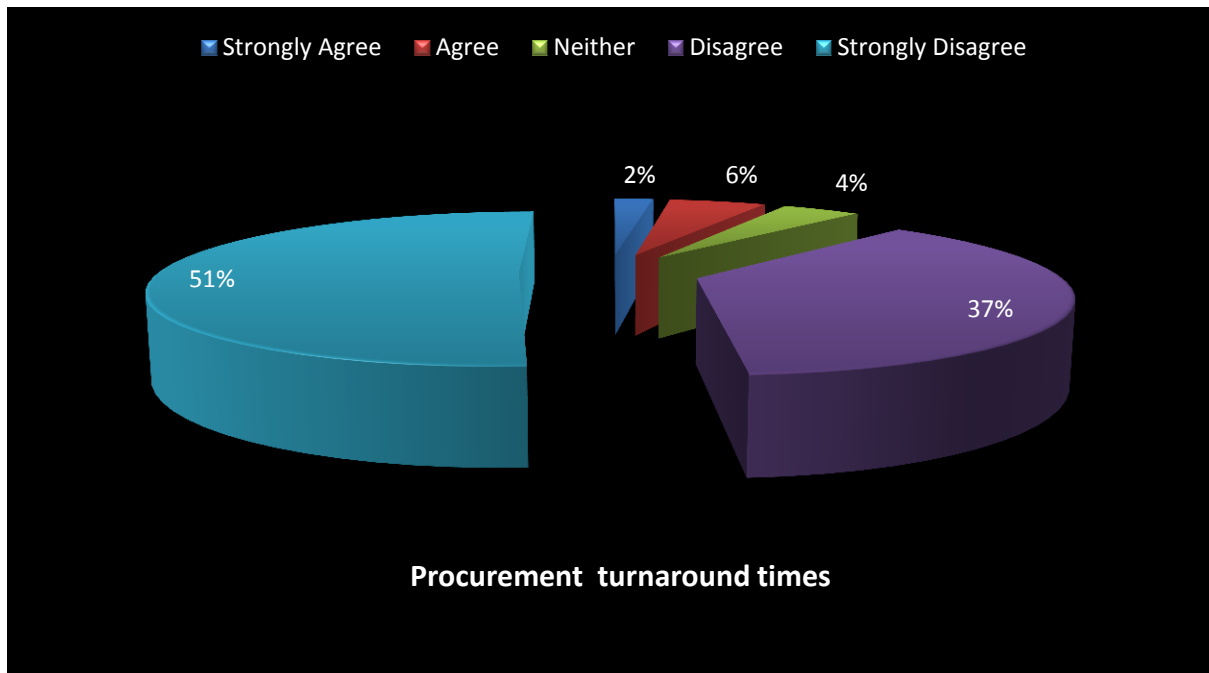


Figure 4.5. Demand planning and improvement of procurement turnaround times

The statement made by the researcher was that demand planning does not improve turnaround times. Respondents were requested to tick the relevant option from the provided possible answers, 51% of respondents strongly disagreed with the statement, 37% simply disagreed, 4% were neutral, 6% agreed and last 2% strongly agreed with the statement.

Table 4.19. Demand planning, ethics, integrity and transparency within procurement.

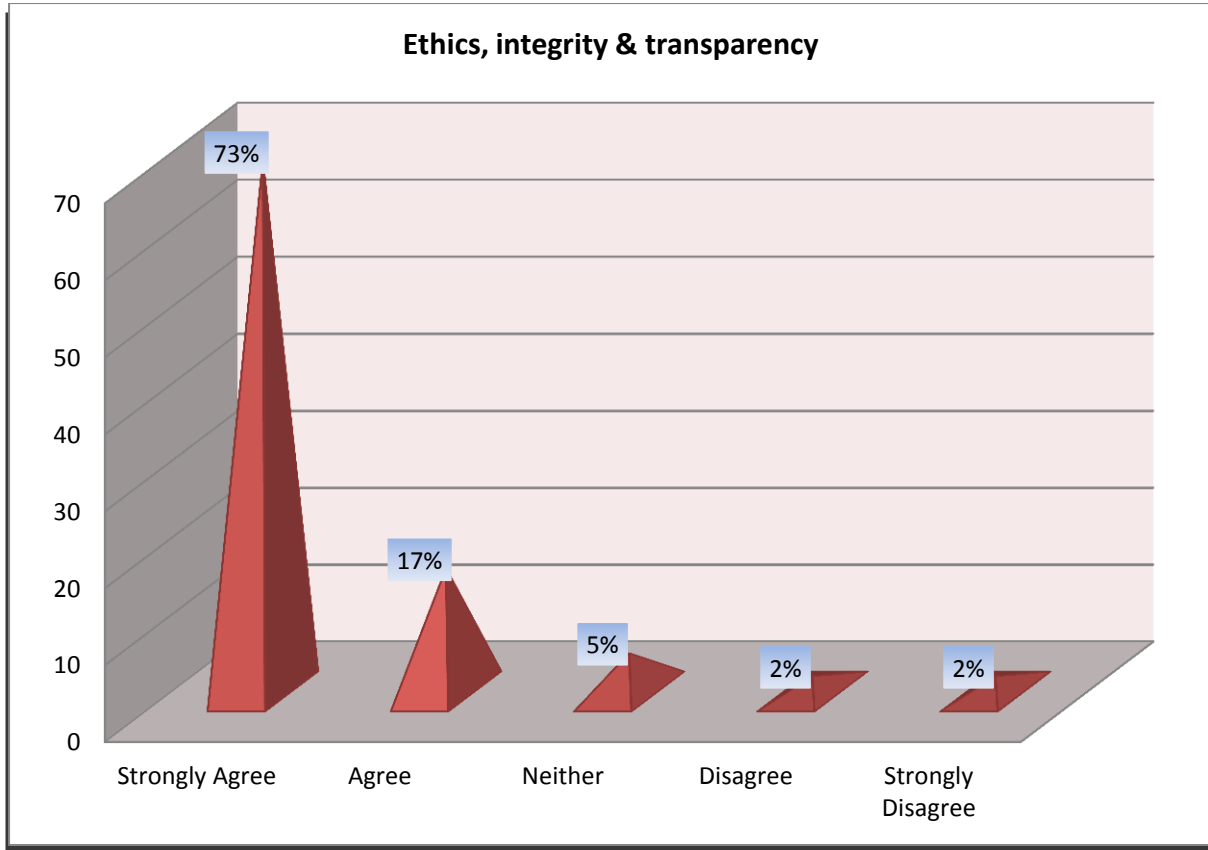


Table 4.19 above depicts the number of respondents who agree that demand planning has impact on ethics, integrity and transparency. In the questionnaire, respondents were asked if demand planning has an impact on ethics, integrity and transparency within procurement. The options ranged from strongly agree to strongly disagree as shown in the chart. 73% of respondents strongly agreed that demand planning has an impact, 17% agreed, 5% were neutral, 2% disagreed and the last 2% simply disagreed.

4.4. The qualitative results

The last section of the questionnaire was qualitative in nature and questions asked the impact of demand planning on procurement, procurement processes, procurement bottlenecks, ethics, integrity and transparency within procurement. In order to further gain perspective on the impact of Impact of demand planning on procurement processes and performance at agency of Department of Transport, the open ended questions were deliberately used in order to elicit a wide variety of responses. The open ended answers were transcribed and analysed using content analysis. Participants have been coded by numbers from participant one (P1) to participant ninety four (P94), participants will be referred by the numbers throughout the research report in order to preserve their anonymity. Four key themes and eight sub-themes seemed to emerge from the open ended questions and were as follows:

- i. Procurement performance and procurement of quality goods and services
 - Procurement performance
 - Procurement of quality goods and services
- ii. Demand planning on procurement processes and control procedures
 - Demand planning on procurement processes
 - Demand planning on procurement control procedures
- iii. Impact of demand planning on procurement bottlenecks
 - Fluctuation of requisitions
- iv. Demand planning enables transparency, ethics and integrity
 - Demand planning and transparency
 - Demand planning and ethics
 - Demand planning and integrity within procurement

4.4.1. PROCUREMENT PERFORMANCE AND PROCUREMENT OF QUALITY GOODS AND SERVICES

4.4.1.1. Sub-theme 1: Procurement performance

One of the common themes that emerged throughout the open ended questions analysis process is the procurement performance and procurement of quality goods and services. The first sub-theme that emerged is under this theme is demand planning on procurement performance.

The majority of respondents indicated that demand planning has consequences on procurement. There are negative consequences on procurement if demand planning is not carried out. The positive consequences are realised when demand planning is carried out properly, a thoroughly conducted demand planning based on the needs and strategic objectives of the agency informs the procurement plan of the organisation. Participant twenty-one (P21) said, *“There are negative consequences if demand planning is not carried out in the organisation, there are also positive consequences if demand planning is thoroughly carried out.* Participant eighty-five (P85) pointed out that, *“Demand planning contributes to a meaningful procurement plan that outlines what purchases an institution will undertake in the short, medium and long-term. The demand planning assists the organisation by gathering valuable insight, agility and the ability to procure the relevant goods and services”.*

4.4.1.2. Sub-theme 2: Procurement of quality goods and services

Procurement of quality goods and services emerged as the second sub-theme. The respondents further indicated that quality goods and services are more likely to be procured as proper demand planning provides procurement a reasonable time to conduct through market analysis. Some of respondents' views are expressed as follows. Participant seventy-four (P74) pointed out that *“Demand planning has influence on procurement in terms of the quality of goods and services acquired. If a proper procurement plan is completed thoroughly and in time, there will be enough time to conduct a market analysis and eventually contract with capable suppliers.”*

Participant sixty-Four (P64) indicated that *“Demand planning affords an institution or organisation time to decide on combining or separating procurement requirements into one contract or tender document, there will be time to draft and develop technical requirements of the project or scope of work, at this stage decisions can be*

made to outsource certain members of bid specification committee, all these decisions contribute to acquisition of quality and fit for purpose goods and services”.

4.4.2. DEMAND PLANNING ON PROCUREMENT PROCESSES AND CONTROL PROCEDURE

Another significant number of respondents indicated and acknowledged that demand planning has an impact on procurement processes in a sense that procurement plan is a critical part of procurement processes and it is informed by demand planning.

Two sub-themes emerged under the above theme, the first sub-theme is demand planning on procurement processes and the second sub-theme is demand planning on procurement control procedures.

4.4.2.1. Sub-theme 1: Demand planning on procurement processes

The connection between demand planning and procurement planning is critical in ensuring that goods and services are delivered in time, at the right place and right price. Most respondents indicated that procurement planning contributes immensely into procurement panning, and it is an important process within procurement as it guides the motion of the entire acquisition and procurement process of the agency. Some of the respondents` views are outlined as follows: Participant thirty-five (P35) mentioned that *“The impact in my opinion is positive as it provides for proper planning and execution of procurement processes, it further provides for accurate measures when it comes to the issues of supply and demand”.*

Participant thirty-five (P35) mentioned that *“It’s positive, if it’s done on time. The demand planning reduces procurement time, offers great value for money and improves procurement turnaround times”.*

4.4.2.2. Sub-theme 2: Demand planning on procurement control procedures

Most respondents indicated that demand planning enhances procurement controls with procurement in terms of spending within the budget, methods of procurement and adherence planned implementation dates. Some of the elaborated their views as follows: Participant thirty-four (P34) pointed out that *“Proper demand planning has*

potential of reducing delay times, eradicate duplications of contract. Proper demand planning further eliminates unnecessary extensions of contracts as a result of lack of demand and procurement plan. Proper demand planning reduces urgent procurements and deviations from procurement processes and procedures, general procurement controls improve”.

Participant seventeen (P17) mentioned that *“When demand planning takes place, accurately budgets are drafted; quality specification can be accurately drafted for implementation for goods and services to be procured. Organisation is able to allocate sufficient time and resources so that institution achieves its purpose of achieving strategic goal”.*

4.4.3. IMPACT OF DEMAND PLANNING ON PROCUREMENT BOTTLENECK

One sub-theme emerged under this theme as discussed below.

4.4.3.1. Sub-theme 1: Fluctuation of requisitions

Majority of respondents felt that sudden increases in requisitions lead to procurement bottlenecks within procurement unit that results inefficiency within the unit. Bottlenecks within procurement might lead to delay in acquisition of goods and services, such delays pose a threat to attainment to meeting the institution`s strategic objectives. Some respondents elaborated their views on procurement bottleneck as follows: Participant sixteen (P16) indicated that *“Demand planning would have a positive impact on procurement bottlenecks in that it would eliminate such bottleneck occurrences by way of better demand planning procedures that would ensure the appropriate acquisition of goods or services”.*

Participant seventy-nine (P79) elaborated that *“Yes, demand planning assists in elimination of bottlenecks, if it’s done in time, it saves time, money and it is great to identify risks and opportunities in acquisition of goods”.*

Participant sixty-five (P65) expanded by mentioning that *“Demand planning has positive impact on procurement bottlenecks, due to pressures of meeting targets set out in the scorecards, many requisitions are raised at the same time at the end of financial year. Procurement can be easily be planned and conducted in orderly manner throughout the year if demand planning was conducted”.*

Participant eighty-one (P81) elaborated that *“Procurement bottlenecks occur within procurement, demand planning definitely has positive impact on procurement and its plans as it guides procurement unit on the roll out plan of the needs of organisation, measures and timelines are easily planned. The proper arrangements will reduce immediate increase of requisitions or idle times within procurement unit during certain times periods of the financial year”*.

Participant seventeen (P17) mentioned that *“Yes, when goods are procured haphazardly then key controls in procurement are ignored and the organisation risks procuring goods of substandard quality. Substandard procurement is a result of bottlenecks as procurement end up prioritising delivery (urgent request) and with possibility of making mistakes”*.

4.4.4. DEMAND PLANNING ENABLES TRANSPARENCY, ETHICS AND INTEGRITY

Majority of respondents indicated that demand planning improves governance. Three sub-themes emerged under the above theme, the first sub-theme is demand planning and transparency, the second sub-theme is demand planning and ethics and the last sub-theme is demand planning and integrity within procurement

4.4.4.1. Sub-theme 1: Demand planning and transparency

The participants further indicated that demand planning informs procurement plans, the procurement plan is then used to inform the prospective suppliers of goods and services and the public at large about future procurement. Respondents elaborated on their views as follows:

4.4.4.2. Sub-theme 2: Demand planning and ethics

The majority of respondents mentioned that demand planning and execution of procurement plans affect procurement performance and ethics. Proper controls such as bid committees to enforce compliance are arranged in time and prepare for the tasks ahead. Participant sixteen (P16) indicated that *“Yes, demand planning has positive impact on ethics, integrity and integrity within procurement taking into consideration the negative work ethics surrounding supply chain management, it would eliminate to a great extent fraudulent activities, corruption and bribes thought to be associated with supply chain officials in general or perhaps make it seem that*

way. Because demand planning would set in place a specific budget for certain or specific goods or services on demand. In a sense it would function in an automated system kind of way, following a specific procedure or process”.

Participant sixty-six (P66) indicated that, *“Improperly planned procurement does compromise the ethics, integrity and transparency of the organisation, this can result in corruption or compromised processes and compromise quality of services, goods or paying incorrect prices and lead to the abuse of resources”.*

Participant sixty-six (P83) pointed that, *“Demand planning has a positive impact on ethics, integrity and transparency within procurement to some extent, a proper plan might minimise the occurrence of unethical conducts since it makes it easier to detect irregular expenditure”.*

4.4.4.3. Sub-theme 3: Demand planning and integrity within procurement

The results show that most respondents felt that demand planning has impact on ethics, integrity and transparency. The positive impact on procurement is realised when demand planning is conducted properly. Participant eighty-four (P84) indicated that *“Not a direct link to ethics and integrity, because those are the aspects that relates to an inner drive, but it may have a bid of impact in promoting transparency aspect because comprehensive demand planning has to provide researched and verified costing”.*

4.5. Conclusion

Chapter four focused on the presentation of results of the study based on the information provided by the respondents. The questionnaire was designed to answer the research questions set out by the researcher and assist the researcher to achieve the objectives of the study.

CHAPTER 5

DISCUSSION OF FINDINGS

5.1. Introduction

In this chapter the research findings from chapter four are discussed in more detail. In addition, the research findings are explained, interpreted and linked to the foregoing frameworks and the surrounding literature review presented in chapter two. The research questions and questionnaire utilised in this study were defined by the body of existing literature relating to demand planning on procurement processes and performance.

The volume of data achieved with the purpose of finding answers to the three main research questions, the data was gathered through questionnaires. The data coding and analysis provided insights into the demand planning on procurement processes and performance. Descriptive analysis provided detailed analysis to the answers provided by participants, whereas the thematic analysis and frequency ranking procedure allowed for the identification of themes from the answers provided by participants in the open ended questions. The relevance of the results and literature in the context of this study are explored in this chapter.

5.2. Discussion of research question one

5.2.1. Does demand planning have consequences on procurement?

Research question one sought to understand the impact of demand planning and its consequences on procurement. The research findings from the questionnaire, data coding and analysis stage of the research revealed the following results that are discussed below.

5.2.1.1. Demand planning and annual procurement plan

The questionnaire highlighted a strong view on the positive impact of demand planning on procurement plan. In figure 2.3 in chapter four, 85% of respondents strongly agreed that demand planning enhances accuracy of annual procurement. The respondents felt that demand planning contributes immensely to the accuracy of procurement planning, and procurement plan is critical function within the procurement process as it guides the motion of the entire acquisition and procurement process of the agency. The respondents in Table 4.2 disagreed that demand planning has no impact on procurement plan, 27% of respondents strongly disagreed, 51% disagreed, only 13% agreed and last 7% of respondents strongly agreed with the statement. Some respondents supported their perspectives by stating *“Demand planning has influence on procurement in terms of the quality of goods and services acquired. If a proper procurement plan is completed thoroughly and in time, there will be enough time to conduct a market analysis and eventually contract with capable suppliers. The demand planning assists the organisation by gathering valuable insight, agility and the ability to procure the relevant goods and services”*.

The researcher asked the respondents if the demand planning enhances procurement quality. This is shown in Table 4.3 in chapter four, 70% of respondents strongly agreed that demand and 28% agreed with the statement. Efficiency and effectiveness within procurement is vital in ensuring the targets are met. In Table 4.5, the respondents felt that demand planning contributes for the efficiency and effectiveness within the procurement unit and that of user departments, 62% of respondents strongly agreed and 34% agreed to the statement. In Table 4.4, 70% of the respondents strongly agreed that demand planning assists procurement achieve value for money, 24% agreed to the statement.

In support of the above results, is it prudent to reflect back to research conducted by Basheka (2008) who stated that demand planning is the primary function that sets the stage for subsequent procurement initiatives, an error in demand planning affects procurement planning, subsequently has wide implication on organisation`s procurement performance. Ogwang & Waweru (2010) asserts that demand planning

is considered as one of the important elements of procurement management and supply chain management processes. It is also regarded as the most puzzling process for various reasons, firstly the availability of information for goods and services is insufficient, planning within procurement is often unaware of various quantities of goods available and how the quantification methods are applied.

Deme (2016) suggested that procurement planning is supported by demand planning with the involvement of the other business units such as operations and other units. Delay in procurement or even the procurement of services and goods that is not happening lead to dissatisfaction and time-consuming of detours when procurement is not happening as expected.

5.2. Discussion of research question two

5.2.1. How is the impact of demand planning on procurement processes?

The second research question aimed to find out if demand planning has any impact on procurement processes. According to South African National Treasury (2016) the performing procurement ensures that availability of goods and services is conducted in a manner that is in compliant with all legislative frameworks, also following the process that is fair, cost effective, transparent and equitable.

5.2.1.1. Demand planning and procurement controls

Most respondents indicated that demand planning enhances procurement controls. In figure 4.13 chapter four, 97% of respondents expressed that demand planning enhances compliance to procurement rules and regulations. Some respondents supported their views by stating that *“The impact in my opinion is positive as it provides for proper planning and execution of procurement processes, it further provides for accurate measures when it comes to the issues of supply and demand”*.

“It’s positive, if it’s done on time, it saves time, great value for money and improves procurement turnaround times.

Proper demand planning has potential of reducing delay times, eradicate duplications of contract. Proper demand planning further eliminates unnecessary extensions of contracts as a result of lack of demand and procurement plan. Proper

demand planning reduces urgent procurements and deviations from procurement processes and procedures, general procurement controls improve”.

“When demand planning takes place, accurately budgets are drafted, quality specification can be accurately drafted for implementation for goods and services to be procured. Organisation is able to allocate sufficient time and resources so that institution achieves its purpose of achieving strategic goal”.

This view of the respondents, that demand planning generally improves procurement controls is in line with Selomo & Govender, (2016) who argued that demand planning, execution of procurement plans, control of procurement processes and monitoring of the activities and projects affect procurement performance.

5.2.1.2. Demand planning, ethics, integrity and transparency within procurement

The results show that most respondents felt that demand planning has impact on ethics, integrity and transparency. The positive impact on procurement is realised when demand planning is conducted properly. Majority of respondents indicated that demand planning improves governance. The participants further indicated that demand planning informs procurement plans, the procurement plan is then used to inform the prospective suppliers of goods and services and the public at large about future procurement. Proper controls such as bid committees to enforce compliance are arranged in time and prepare for the tasks ahead. However, it must be noted that some respondents expressed that demand planning has no impact on ethics and integrity organisation. Some of the views of respondents are as follows *“Not a direct link to ethics and integrity, because those are the aspects that relates to an inner drive, but it may have a bid of impact in promoting transparency aspect because comprehensive demand planning has to provide researched and verified costing”.*

Some respondents expressed that demand planning has impact on ethics, integrity and transparency, this is 90% of respondents according to Table 4.19 in chapter four. Some respondents supported their views by stating that *“Yes, demand planning has positive impact on ethics, integrity and integrity within procurement taking into consideration the negative work ethics surrounding supply chain management, it would eliminate to a great extent fraudulent activities, corruption and*

bribes thought to be associated with supply chain officials in general or perhaps make it seem that way because demand planning would require a specific budget for certain or specific goods or services on demand. In a sense it would function in an automated system kind of way, following a specific procedure or process”.

“Improperly planned procurement does compromise the ethics, integrity and transparency of the organisation, this can result in corruption or processes and compromise quality, service or pricing of goods and lead to the abuse of resources”.

“Demand planning has a positive impact on ethics, integrity and transparency within procurement to some extent, a proper plan might minimise the occurrence of unethical conducts since it makes it easier to detect irregular expenditure”.

Biwott, Bogonko & Kibet (2017) corroborate that having the procurement plan is the necessary and significant phase in achieving the procurement objectives. The procurement plan assist organisation to monitor the procurement objectives and implement the necessary steps. Eugene (2015) argued that the first benefits are realised in the procurement through the implementation of the best procurement policies and procedures guided by the law and regulations in ensuring transparency and competitiveness. Secondly, the objectives of procurement are realised when effective and effective demand planning and procurement planning are in place and followed.

5.3. Discussion of research question three

5.3.1. Does demand planning have any impact on procurement bottlenecks?

Research question three is the last question of the study. It was set out to find out the impact on demand on procurement bottlenecks. Participants were asked a series of questions in the question relating to procurement bottlenecks.

5.3.1.1. Procurement bottlenecks

Regrettably, not all goods and services are acquired in time and some are not acquired at all or are not acquired within the period that is required, such incidents, poses a serious concern to meeting strategic goals and service delivery. Respondents noted bottlenecks as a threat to meeting strategic objectives. In figure 4.18, the respondents strongly agreed that demand planning reduces sudden increase of requisitions toward end of financial year. Some respondents expressed their views and stated that *“Demand planning has positive impact on procurement bottlenecks, due to pressures of meeting targets set out in the scorecards, many requisitions are raised at the same time at the end of financial year. Procurement can be easily be planned and rolled out in orderly manner throughout the year if demand planning was conducted”*.

Lead time plays a critical role in satisfying customers. Generally, customers expect goods or services within a short space of time. Procurement bottlenecks have a direct relationship with lead times. Rouse (2018) suggested that the process of procurement has variable lead times depending on the complexity of the procurement, the type of procurement method being pursued, the value in monetary terms, the workload in the procurement unit and the contracting document being utilised. In figure 4.19, the researcher asked the participants if demand planning improves procurement turnaround times, 71% of participants strongly agreed and 25% simply agreed that demand planning improves procurement turnaround times. The explanation is the same as above that better demand planning provides room for better arrangement including the planning of lead times. Some respondents stated that *“Procurement bottlenecks occur within procurement, demand planning*

definitely has positive impact on procurement and its plans as it guides procurement unit on the roll out plan of the needs of organisation, measures and timelines are easily planned. The proper arrangements will reduce immediate increase of requisitions or idle times within procurement unit during certain times periods of the financial year.

“Yes, when goods are procured haphazardly then key controls in procurement are ignored and the organisation risks procuring goods of substandard quality. Substandard procurement is a result of bottlenecks as procurement end up prioritising delivery (urgent request) and with possibility of making mistakes”.

Siongok & Noor (2016) argued that demand planning affects the performance of procurement; the impact may be negative or positive depending on the quality of demand planning. There are scenarios in procurement whereby the procurement is repeated due to goods not meeting the set quality standards. Such delays and bottlenecks are linked to initial stages of planning (Siongok & Noor, 2016).

Based on the above results, demand planning has a positive on procurement and its processes and it has positive impact on procurement bottlenecks if the demand planning is properly conducted. Davis & Sheldon (2016) asserts that the objective of demand planning is not necessarily the prediction of future with absolute divinatory certainty of the events that will occur, but to ensure success over a long term, the challenge is to maintain the level of success or to gain success. The macro-environmental factors such as economy, political and technological have impact on forecasting, the economic factors such as change in interest rates and the prices fuel impact the demand of products (Agaba & Shipman, 2014).

5.3. Conclusion

Chapter five provided a discussion of the research findings on the effects of demand planning on procurement processes and performance. The findings were interpreted and explained, most findings expressed by respondents were in line with the literature.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1. Introduction

The previous chapter described in detail, the findings of this study after an analysis of the data gathered, as well as the interpretation and explanation. The purpose of this chapter is to present a summary of the study, limitations of the study and to draw conclusions and make recommendations for the present and future research, based on the findings.

6.2. Conclusion

This section presents the main findings, ties up the objectives of the study with the findings and the conclusions reached during the course of the study based on the main findings presented in Chapter 5. The researcher chose the topic after discovering that not all goods and services are acquired in time and some are not acquired at all within the period that are required. Such incidents present a serious concern to meeting strategic goals and service delivery. Bottlenecks are also observed as an issue of concern whereby a large number of requisitions are raised at a particular time of the year to acquire goods and services and that leads to bottlenecks within procurement. Such issues lead to constant rush of requisitions, procurement processes and haphazard procurement. The researcher undertook to understand the role of demand planning on procurement processes and performance.

The findings and discussions in chapter five clearly highlighted the impact of demand planning on procurement. Research questions were formulated with the purpose of understanding the impact of demand planning and its consequences on procurement. The key findings indicated that impact of demand planning has a positive impact on procurement plan, as discussed in the previous chapter that procurement plan is critical function within the procurement process as it guides the motion of the entire acquisition and procurement process of organisation. The results further shown that demand planning contributes for the efficiency and effectiveness

within the procurement unit and that of user departments as the intended commodities are procured within the required time and such commodities are fit for purpose. The results of the study also revealed that demand planning has impact on ethics, integrity and transparency. The positive impact on procurement is realised when demand planning is conducted properly. Finally, the results of the study revealed that demand planning reduces procurement bottlenecks and sudden increase of requisitions toward end of financial year. These results were presented and discussed in detail in the previous chapter, the recommendations in this chapter highlights the findings.

6.3. Implications of the research

The study contributes to the knowledge base in the field of procurement and supply chain management in general. This research has shown that demand planning has an impact on the public sector supply chain management. There is always a need for business re-engineering and improvement of processes to remain competitive in a volatile, uncertain, complex and ambiguous business environment, particularly in procurement.

Accordingly, the first critical practical contribution of the present research is that it provides the much needed guideline and specific start when improving the performance of procurement. The second implication stems from the identification of specific areas within procurement, w

hereby demand planning plays a role to improve either efficiency or effectiveness, compliance or improve turnaround times. The whole organisation will therefore benefit from this study by using the findings to improve procurement and managing expectations from procurement.

6.4. Limitation of the study

The limitation and delimitation were discussed in chapter one to clearly show the focus of the study, however the limitations are also shown below to linkup with the recommendations for future studies discussed below. Firstly, although the exploratory research methodology was utilised for this study, it may have given certain insights and certain level of understanding about the effects of demand

planning on demand planning on procurement processes and performance at the agency of department of transport in South Africa. It is therefore imperative this exploratory be followed by other studies that will study the areas of this study that may not have been explored in satisfactory detail.

Secondly, the study utilised a case study method focusing at the agency of department of transport in South Africa. According to Yin (2012) case studies provide very little basis for scientific generalisation since they use a small number of subjects, some conducted with only one subject. The results and outcomes may be extended to other similar institutions in analogous industries with caution, so as to not generalise the findings. Therefore, there is little basis to generalise the results of this study, future studies may look into other institutions

Thirdly, the survey questionnaires were administered in English language, whilst there are nine official languages in South Africa, descending from various ethnic backgrounds. Native English speakers may have an advantage in understanding the questions better than non-native English speakers.

Finally, the participation rate for this study was good, however, it is not representation of the whole organisation. A total of 102 questionnaires issued and 94 questionnaires were completed representing 92% of staff members within the agency. Therefore these findings should be used with caution when trying to apply them to a broader setting.

6.5. Recommendations to solve the research problem

Procurement operates in an environment of increasingly intense scrutiny driven by technology, programme reviews and public and political expectations for service improvements (Bolton, 2012). In Chapter one, a list of legislative requirements that procurement must comply with was discussed. Such requirements bring challenges to procurement and organisations that have strategic objectives that must be met through procurement. As mentioned in the research problem, not all goods and services are acquired in time and some are not acquired at all within the period that is required. Bottlenecks are also an issue of concern whereby a large number of requisitions are raised at a particular time of the year to acquire goods and services

and that leads to bottlenecks within procurement. Such issues lead to constant rush and lack of planning within the procurement.

In order to resolve the above mentioned challenges, the study recommends the following:

- The study recommends to procurement and supply chain management policy makers to introduce demand planning within the institutions; it must be conducted on yearly basis.
- Demand planning must be informed by the strategic objectives of the organisation.
- Demand planning must involve all business units with the organisation, people must participate in order to have effective demand planning, therefore, the involvement of top management in the demand planning and procurement is significant in ensuring adherence and commitment to the plan.
- The study also recommends that proper procurement planning must be informed by demand planning and participation by all parties within the institution must be enforced, it is evident based on the results that a well conducted demand planning and procurement planning reduce the lead time, eliminate unnecessary extensions and duplications of contracts, and eradicate the occurrence of emergency procurement.
- The acquisition processes must be initiated based on an approved procurement plan which was informed by a well conducted demand planning, any deviation from such process must be procedurally approved and discouraged.
- All business units within the institution must be aware of the demand plan and procurement plan as poor demand planning and procurement planning result in bottlenecks within the procurement, unrealistic expectation, poor development of specification, incorrect decision to procured, deviation from normal procurement processes and unrealistic cost estimates.

The above recommendations are relevant, realistic and practical. The recommendations are also proposed to industry, the policy makers and all participants who took part in this study

6.6. Recommendations for future studies

The current study looked at a heterogeneous population in terms of experiences and knowledge of procurement. However, it was a case study as discussed above. There are a number of focus areas that this study was unable to examine. In this view, future studies could consider the following topics that arise from this study:

- The research was based on one organisation, further research may be needed to elicit responses in various organisations.
- The study was confined to the South African institution, this is an opportunity for another study to be conducted in the developing countries, particularly African, whereby some institutions may be facing similar challenges.

6.7. Conclusion

This study contributed to the procurement and supply chain management in knowledge. The answers from respondents assisted in providing answers to the research questions and it is evident that demand planning ultimately to improve general procurement efficiency. The research project further presented insights into the impact of demand planning on procurement processes and performance, and it may spark future attempts to refute or elaborate these findings and offer the potentially valuable role of a different knowledge and perspective.

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Annexure 1: Introduction letter

Informed Consent Letter 3C

**UNIVERSITY OF KWAZULU-NATAL
GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP**

Dear Respondent,

MBA Research Project

Researcher: Mr Charles Butana Seerane 076 104 0041

Supervisor: Mr Christopher Chikandiwa

Research Office: Ms P Ximba 031-2603587

I, **Charles Butana Seerane** an MBA student, at the Graduate School of Business and Leadership, of the University of KwaZulu Natal. You are invited to participate in a research project entitled **“Effects of demand planning on procurement processes and performance at agency of Department of Transport”**. The aim of this study is to:

- To find out the consequences of demand planning on procurement
- To assess the impact of demand planning on procurement processes
- To establish whether demand planning has any impact on procurement bottlenecks

Through your participation I hope to understand the impact of demand planning on procurement processes and performance at agency of department of transport. The results of the focus group are intended to contribute to improving the effectiveness and efficiency of procurement.

Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time with no negative consequence. There will be no monetary gain from participating in this survey. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Graduate School of Business and Leadership, UKZN.

If you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact me or my supervisor at the numbers listed above.

The survey should take you about **15** minutes to complete. I hope you will take the time to complete this survey.

Sincerely

Investigator’s signature _____ Date _____

This page is to be retained by participant

Annexure 2: Informed Consent letter

**UNIVERSITY OF KWAZULU-NATAL
GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP**

MBA Research Project

Researcher: Mr Charles Butana Seerane 076 104 0041

Supervisor: Mr Christopher Chikandiwa

Research Office: Ms P Ximba 031-2603587

CONSENT

I.....(full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

SIGNATURE OF PARTICIPANT

DATE

.....

This page is to be retained by researcher

Annexure 3: Questionnaire



1. GENDER

- Male
- Female
- Unspecified

2. HOW LONG HAVE YOU BEEN DIRECTLY OR INDIRECTLY INVOLVED WITH PROCUREMENT ACTIVITIES

- 0 – 2 years
- 2 – 5 years
- 5 – 10 years
- 10 – 15 years
- 15 – 20 years
- 20 and above

PLEASE CROSS THE APPROPRIATE BOX

Demand planning on procurement					
Demand planning enhances accuracy of annual procurement plan	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Demand planning has no impact on procurement plan	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Demand planning enhances procurement quality	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Demand plan helps procurement achieve maximum value for expenditures	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Demand planning improves efficiency and effectiveness within procurement and user unit	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Demand planning has positive impact on user's goals and objectives	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Demand planning has a negative impact on user's goals and objectives	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Demand planning enables procurement identify and address all relevant issues pertaining to a particular procurement before publication of procurement notices to potential suppliers	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Demand planning has positive impact on user's goals and objectives	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Demand planning contributes to achievement of annual procurement plan	Very often	Often	Neither	Sometimes	Not at all
Demand planning on procurement processes					
Demand planning enhances procurement controls	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Demand planning enhances compliance to procurement rules and regulations	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
To what extent to which demand planning influences acquisition of goods and services	To a very great extent	To a great extent	To moderate extent	To little extent	To no extent
Demand planning assist in reducing order variations and price escalations	To a very great extent	To a great extent	To moderate extent	To little extent	To no extent
Demand planning enhances development of quality specifications	To a very great extent	To a great extent	To moderate extent	To little extent	To no extent
Demand planning assist in procuring goods and services that are aligned to the agency's strategy and resource plan	To a very great extent	To a great extent	To moderate extent	To little extent	To no extent
Demand planning on procurement bottlenecks					
Demand planning reduces sudden	Strongly	Agree	Neither	Disagree	Strongly

increase of requisitions towards financial year end	Agree				Disagree
In your opinion, demand planning improves procurement turnaround times	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Demand planning improves the acquisition processes of goods and services	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Demand planning assists in raising procurement needs in time					
In your opinion, demand planning does not improve procurement turnaround times	Very often	Often	Neither	Sometimes	Not at all
In your opinion, demand planning has an impact on ethics, integrity and transparency within procurement	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Open ended questions					
Does demand planning have consequences on procurement?					
How is the impact of demand planning on procurement processes?					
Does demand planning have any impact on procurement bottlenecks?					
Does demand planning have an impact on ethics, integrity and transparency within procurement?					

Annexure 4: Ethical Clearance



08 November 2018

Mr Charles Butana Seerane (204001688)
Graduate School of Business & Leadership
Westville Campus

Dear Mr Seerane,

Protocol reference number: HSS/1289/018M

Project title: Impact of demand planning on procurement processes and performance at agency of Department of Transport

Approval Notification – Expedited Application

In response to your application received 27 August 2018, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

ps Professor Shenuka Singh (Chair)

/ms

Cc Supervisor: Mr Christopher T Chikandiwa
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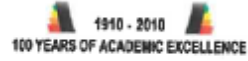
Professor Shenuka Singh (Chair)

Westville Campus, Govan Mbeki Building

Postal Address: Private Bag X54001, Durban 4000

Telephone: +27 (0) 31 260 3587/8350/4557 **Facsimile:** +27 (0) 31 260 4609 **Email:** simbap@ukzn.ac.za / snymacm@ukzn.ac.za / mohuno@ukzn.ac.za

Website: www.ukzn.ac.za



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Annexure 5: Turnitin Report

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