

IMPROVING THE PROCUREMENT FUNCTION IN THE PUBLIC SECTOR:

A CASE STUDY OF MINISTRY OF HEALTH

BY

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A Dissertation submitted to the University of Zambia in partial fulfilment of the requirements for the award of the Degree of Masters of Science Projects, Operations and Supply Chain Management

THE UNIVERSITY OF ZAMBIA

LUSAKA

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DECLARATION

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APPROVAL

This Dissertation by **Stanley Chipuma** is approved as a fulfilment of the requirements for the award of the Degree of Master of Science in Operations, Projects and Supply Chain Management.

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ABSTRACT

This Study was premised on empirical research gaps of unknown barriers that accentuated the costs of doing business and further than this, most of the procurement function activities are not done on schedule. It was not known what the barriers of procurement function are on attaining effective procurement functions of the Ministry of Health. A cross sectional quantitative Study enlisting 96 staff in the procurement sector was done. Data was collected using a survey questionnaire and linear regression was performed using SPSS software version 21. The Ministry of Health experiences three barriers in meeting its procurement functions and these include challenges in availability of materials from our suppliers, failing to meet the set ideal times in the procurement processes, the type of management and insufficient financial resources to procure goods and services. In spite of these barriers, at a general level, the Ministry of Health has demonstrated that its procurement functions are effective as the regression model does not demonstrate a statistically significant outcome to predict the outcome variable effectiveness of procurement function (i.e., it is not a good fit for the data) as p is > 0.05 (0.719). Further, none of the four predictor variables show any statistically significant effect as p values are ≥ 0.05 . In view of the findings made, the following conclusions were made. It is not possible that the procurement function in the Ministry of Health takes large amounts of revenue and there is no evidence that it is becoming expensive. The concerns raised are unfounded as the barriers have no influence riddled with barriers such that the sourcing of goods and services poses a challenge. Hence this Study recommends sustaining the current procurement processes.

Key Words: Procurement Function, Public Sector, Ministry of Health

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My gratitude also goes to all respondents at the Ministry of Health.

DEDICATION

This Dissertation is dedicated to my family who were there always to encourage me physically and emotionally in my daily endeavours. I also give thanks to my Almighty God who has made it possible for me to do this work.

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CHAPTER 1

INTRODUCTION

1.1 Background

An organisation with committed leadership and has embraced strategy approach in doing business gains competitive advantage in the market (Pesendorfer, 2000). A good strategy in procurement function builds on and exploits to the fullest extent the organization's resources and abilities as it aims to create the best possible fit between the organization and its mission, on one hand, and the organization's external environment, on the other hand (Lloyd, 2009). The way that an organisation succeeds in the competition with its rivals is by doing something that gives it an advantage in the eyes of consumers of its products and services. This is particularly true when it comes to procurement function.

Procurement is the process of deciding what, when, and how much to purchase, the act of purchasing it, and the process of ensuring that what is required is received in the quality specified and on time. In addition to the activities performed by the purchasing department, procurement includes activities performed by design engineering, production planning and inventory control and operations (Menezes and Monteiro, 2000). Procurement activities typically are responsible for more than half of the firm's expenses and frequently have more "bottom line" impact than does marketing (Vaidya et al., 2006). For these impacts, managers have ensured that there is a strategy to this effect.

Procurement function covers arranging material and services for smooth production of company. Here smooth means - right material/services (quality wise) at right time, in right quantity and in optimum cost (Bastedo, 2004). There are so many other sub-activities being carried by procurement function to carry main activity of arranging material/service e.g. Inventory management, Price optimization, Localization, supplier performance monitoring/improvement, lead time reduction and many more (McCue and Prier, 2006). Procurement strategy and supplier development are the main pillars for business success of a firm faced with the challenge of cutting down costs and increasing efficiency without compromising on quality and customer service (McCue and Prier, 2006). Implementation of a strategy requires effective operationalization and institutionalization of that strategy. Operationalization requires ample resources and appropriate role definitions while institutionalization requires aligning strategy with all firm-level institutions.

Institutionalization of strategy is largely informed by North's (1991) institutional theory as well as McKinsey 7s framework (Peters and Letterman, 1982). Bastedo, (2004) postulates that in the open systems theory organizations are strongly influenced by their environment. The Ministry of Health too has its own environment within which it can implement its procurement strategy.

Relating to the study at hand, procurement function is a crucial activity in any organization and must be conducted efficiently and effectively. Organizational effectiveness is achieved through among other ways, efficient procurement function. Therefore, this study was anchored on the following statement of the problem.

1.2 Statement of the problem

The procurement function has become increasingly important over the past decades since purchasing and supply has become a major determinant of corporate success. Significant business pressure as a result of globalization, innovations, technological changes, cost pressure, and regulatory compliance has forced the procurement function to focus on cost reduction and attaining more value for money (Kaya, 2004). The Procurement function usually take large amounts of organizations' revenue (Gebauer and Segey,1998) hence it is becoming an expensive undertaking for many organizations (Chan and Lee, 2003) and if not properly done it can lead to significant regret.

There have been concerns in staff meetings that the procurement function effectiveness in the ministry of health was riddled with barriers such that the sourcing of goods and services poses a challenge. There have been News Paper Reports and Parliamentary proceedings stating that some goods and services are procured from unauthorised and unreliable sources while at times, the turn round time is flouted. These barriers are claimed to be linked with accentuating the costs of doing business and further than this, most of the procurement function activities are not done on schedule. It is not known what the barriers of procurement function are on attaining effective procurement functions of the Ministry of Health. There is therefore need ascertain the barriers and where possible consider improvements in the procurement functions by overcoming barriers in order to serve costs, time and staff burnout in the Ministry of Health. Hence this study is seeking ways of improving the procurement function in the Ministry of health.

1.3 Aim and Objectives of the study

This study sought to determine the barriers of performing an effective procurement function with a view to develop a framework of actions that could be applied to improve the current procurement functions in the health sector. Specifically, the study was set to:

- 1) To explore the current state of barriers of procurement functions in the Ministry of Health.
- 2) To describe the current state of procurement function effectiveness.
- 3) To test the assumptions of the systems theory if they hold in explaining the role of barriers in the state of procurement function in the Ministry of Health.
- 4) To develop a framework that could be used to enhance procurement function in the Ministry of Health.

1.4 Research Questions

This study is seeking to answer the following research questions.

- 1) What is the current state of procurement¹ functions in the Ministry of Health?
- 2) What is the current state of procurement function effectiveness?
- 3) Why is the procurement function yielding the observed procurement function effectiveness in the Ministry of Health?
- 4) How can procurement function in the Ministry of health be improved?

1.5 Conceptual Framework

A conceptual framework forms a simplified familiar structure, which is meant to help gain insight into a phenomenon that one needs to explain (Orodho, 2009). Conceptual research is that related to some abstract ideas or theory. It is generally used by philosophers and thinkers to develop new concepts or to reinterpret existing ones, the conceptual literature concerning

¹ Procurement involves the process of selecting vendors, establishing payment terms, strategic vetting, selection, the negotiation of contracts and actual purchasing of goods.

the concepts and theories and explain how the variables relate (Kothari, 2004; Gabriel, 2008; Jacard and Jacob, 2010).

Based on the review of literature regarding the impact of supply chain barriers for ideal role of procurement function, three sets of variables were distinguished to explain variations in organizational performance relatives to selected supply chain determinants. From the reviewed literature, the assumptions the researcher desires to advance are that if barriers of procurement function are present, they may influence the ideal role of procurement function.

The independent variable being barriers includes, availability of raw materials, ideal lead time, efficient personnel, professionally qualified and experienced employees, Type of management and availability of enough financial resources.

The dependent variable Dependent variable (Ideal role of procurement function) will include doing business at minimal cost, obtaining materials with no fraud, delivery of Right material/services (quality wise), delivery of material/services at right time, delivery of material/services in right quantity and delivery of Material/services in optimum cost.

The Intervening variable are competition, state of economy and procedures of procurement Saunders (2006). At the centre are intervening variables that affect the relationship between the independent variable and the dependent variable. Often these variables could appear when researchers are studying the relationship between two variables and don't realize that another variable is actually intervening in the relationship.

Once the barriers are identified it will be easier to direct them into appropriate functional use so as to attain high levels of performance function in the Ministry of Health. Figure 2.1 is the conceptual framework guiding the study.

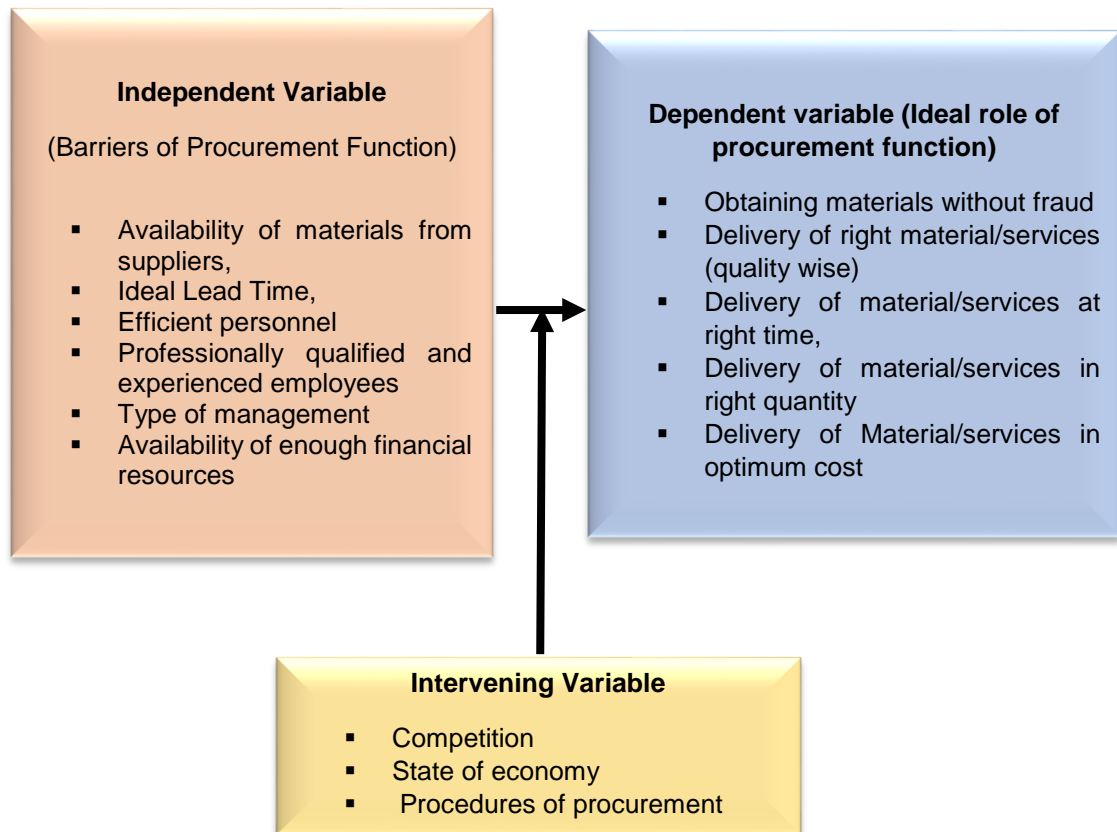


Figure 1. 1 Conceptual Framework

1.6 Scope of the Study

Scope and delimitations are key parameters offering the study’s boundaries, qualifications, exceptions and reservations (Creswell, 2008). Consequently, the scope shows the coverage in terms of what is to be studied and the contexts. The geographic scope of the present study included the Ministry of Health which was narrowed down to staff dealing in procurement. Academically the study’s focus was the supply chains barriers that could influence procurement function. The Choice of these determinants was informed by assertions of Shahzadi, Amin and Chaudhery (2013).

CHAPTER 2

LITERATURE REVIEW

2.1 Nature of Public procurement

Traditionally public procurement policy has reflected the competitive approach. In the UK, Treasury guidance states that "goods and services should be acquired by competition unless these are convincing reasons to the contrary" (Treasury, 1988) and that "competition is the best guarantee of quality and value for money" (Chancellor of the Exchequer, 1991). The European Commission (1996) has also stated that "the objective of the Union's public procurement policy is to achieve fair and open competition ... to achieve value for money for taxpayers." This policy is based upon "economic efficiency" principles summarised by Fernandez Martin (1996) as the understanding that competitive tendering will result in greater economic efficiency through reductions in costs, which will produce savings and maximise operating efficiency thus ensuring fair and equitable use of taxpayers' money. Theoretically, this policy is supported by anecdotal evidence of successful competitive contracting (Meyer, 1998) and recent work in auction theory which suggests that competitive tendering leads to efficient prices (Domberger and Jensen, 1997).

Collaborative procurement is horizontal collaboration between two or more organisations during one or more steps of the purchasing process. According to Jost et al. (2005), there are two main advantages to collaboration. The first is increased effectiveness through learning from each other and a better use of resources. As purchasing is evolving into a more strategic function (Reck and Long, 1988) and demands more strategic skills, collaboration can be a way of accessing these skills or freeing up resources to develop them. The second main advantage is an improved efficiency through reduction of transaction costs and increased economies of scale through bundling purchasing volumes (Leenders and Fearon, 1997; Johnson, 1999).

One issue that can hinder or facilitate effective collaboration concerns the choice of the appropriate organisational form (Rozemeijer, 2000; Nollet and Beaulieu, 2003). Which form is chosen can be either the result of a 'top-down' policy decision or the result of a 'bottom-up' evolutionary process. This paper is concerned with creating an 'ideal picture' of when which form would be appropriate. The paper is exploratory and conceptual, drawing heavily on a variety of theoretical frameworks. As internationally, horizontal collaboration receives a lot of

attention in public sector organizations, we focus on the public sector. Collaborative procurement however is a broad concept and we hence believe the relevance of this paper goes beyond the public sector.

2.2 Forms of Collaboration in Procurement

In this section we describe different forms of collaboration. First, we discuss forms found in the literature. Next, we describe forms found in our empirical study. Finally, we map all forms onto a continuum. Forms of collaborative procurement in the literature two distinct structural forms of collaborative procurement can be recognised in the procurement literature: informal, virtual organisations and third party organisations. Virtual networks are member-owned and operate without (many) formal rules. Staff are not employed by the collaborative, nor are they dedicated specifically to the collaboration: collaborative working is often part of their other job at one of the member organisations. Third party organisations are separate organisations that are set up specially to manage and coordinate the collaboration. They have formal rules and staff specifically dedicated to the collaboration (Leenders and Fearon, 1997; Aylesworth, 2003; Nollet and Beaulieu, 2005; Bakker et al., 2006). These extreme types can also be found in evolutionary models of collaborative procurement such as by D'Aunno and Zuckerman (1987), Johnson (1999) and Nollet and Beaulieu (2003). For example, D'Aunno and Zuckerman (1987) speak of “federations” as third party formal separate organisations and “coalitions” as voluntary networks. Also, when in literature more than two forms are mentioned in the literature (McCue and Prier, 2006; Aylesworth, 2007; Schotanus and Telgen, 2007), these two extremes are identifiable amongst the variations. One of the differences between Schotanus and Telgen (2005) and Aylesworth (2007) is that the first authors explicitly include temporary project-based collaboration on exceptional projects such as IT infrastructure, telecom, or construction projects.

2.3 Procurement Functions

According to José G. Hernández R. and María J. García G. (2006) the procurement function is defined as a logistic function immediately associated with supplies and goes beyond covers the whole logistic chain.

2.4 Determinants of Procurement Functions

Baily (2005) argues that a well-known statement of the objectives of purchasing is to acquire the right of material at the right time, in the right quantity from the right source at the right price and he mentioned the following objectives of purchasing.

- a) To develop staff policies, procedures and organization to ensure achievement of these objectives.
- b) To maintain sound co-operative relationships with other departments providing information and advice as necessary to ensure the effective operation of the organization.
- c) To buy efficiently and wisely obtaining by an ethical means the best value for every shilling spent.
- d) To supply organization with a flow of materials and service to meet its need.
- e) To ensure continuity of supply by maintaining effective relationship with existing sources and by developing other source of supply either as alternative or to meet emerging or planned needs.

Lyson (2000) says that purchasing is the function responsible for obtaining by purchase, lease or other legal means, equipment, materials components, supplies and service required by an undertaken for use in production or resale. Saunders (1997) states that purchasing and supply chain provide an interface between customers and supplies in order to plan, obtain, store and distribute as necessary suppliers of material goods and services to enable the organizations to satisfy its external and internal customers.

The major functions of purchasing and supply chain according to Lyson (2006) may include;

- a) Contribution to the formulation, communication and implementation of policies, strategies and plans,
- b) Contribute to the establishment and improvement of purchasing systems,
- c) Establish and maintain a database of purchasing and store information,
- d) Contribute to effective working,
- e) Monitor and control the purchasing, supply, storage, distribution and transport chain,
- f) Acquire suppliers,
- g) Establish and develop sources of supply and

- h) Provide goods and materials to internal and external customers through movement, distribution and transport

Lyson (2006) explains a process as a set of sub-processes or stages directed at achieving an output. The various tasks or stages can be depicted as a process chain. Thus purchasing can be depicted as a sequential chain of events leading to the acquisition of supplies. The link in the purchasing process chain is information. Thus each sub processor otherwise processing information that enables us to answer the questions 'what are we required to purchase? And where and how can the required supplies are obtained'. A process chain relationship can therefore also be considered a message chain relationship.

Previously messages both internal (such as requisition and external such as orders and payments) were transmitted on paper documents via the mail. Purchasing managers/directors, and procurement managers/directors guide the organization's acquisition procedures and standards. Most organizations use a three-way check as the foundation of their purchasing programs. This involves three departments in the organization completing separate parts of the acquisition process. The three departments do not all report to the same senior manager to prevent unethical practices and lend credibility to the process. These departments can be purchasing, receiving; and accounts payable or engineering, purchasing and accounts payable; or a plant manager, purchasing and accounts payable. Combinations can vary significantly, but a purchasing department and accounts payable are usually two of the three departments involved (Farrington, 2006).

Historically, the purchasing department issued Purchase Orders for supplies, services, equipment, and raw materials. Then, in an effort to decrease the administrative costs associated with the repetitive ordering of basic consumable items, "Blanket" or "Master" Agreements were put into place. These types of agreements typically have a longer duration and increased scope to maximize the Quantities of Scale concept. When additional supplies are required, a simple release would be issued to the supplier to provide the goods or services (Lyson, 2006). Another method of decreasing administrative costs associated with repetitive contracts for common material is the use of company credit cards, also known as "Purchasing Cards" or simply P-Cards P-card programs vary, but all of them have internal checks and audits to ensure appropriate use. Purchasing managers realized once contracts for the low dollar value consumables are in place, procurement can take a smaller role in the operation and use of the contracts. There is still oversight in the forms of audits and monthly statement reviews, but

most of their time is now available to negotiate major purchases and setting up of other long term contracts. These contracts are typically renewable annually (Farrington, 2006).

This trend away from the daily procurement function (tactical purchasing) resulted in several changes in the industry. The first was the reduction of personnel. Purchasing departments were now smaller. There was no need for the army of clerks processing orders for individual parts as in the past. Another change was the focus on negotiating contracts and procurement of large capital equipment. Both of these functions permitted purchasing departments to make the biggest financial contribution to the organization. A new terms and job title emerged – Strategic sourcing and Sourcing Managers. These professionals not only focused on the bidding process and negotiating with suppliers, but the entire supply function. In these roles they were able to add value and maximize savings for organizations (Lyson, 2006). This value was manifested in lower inventories, less personnel, and getting the end product to the organization's consumer quicker. Purchasing manager's success in these roles resulted in new assignments outside to the traditional purchasing function – logistics, materials management, distribution, and warehousing. More and more purchasing managers were becoming Supply Chain Managers handling additional functions of their organizations operation. Purchasing managers were not the only ones to become Supply Chain Managers. Logistic managers, material managers, distribution managers, etc. all rose the broader function and some had responsibility for the purchasing functions now.

In accounting, purchases are the amount of goods a company bought throughout this year. They are added to inventory. Purchases are offset by Purchase Discounts and Purchase Returns and Allowances. When it should be added depends on the Free On Board (FOB) policy of the trade. For the purchaser, this new inventory is added on shipment if the policy was FOB shipping point, and the seller remove this item from its inventory. On the other hand, the purchaser added this inventory on receipt if the policy was FOB destination, and the sellers remove this item from its inventory when it was delivered. Goods bought for the purpose other than direct selling, such as for Research and Development, are added to inventory and allocated to Research and Development expense as they are used. On a side note, equipment bought for Research and Development are not added to inventory, but are capitalized as assets (Farrington, 2006).

Gillinghan (2003) suggests that purchasing along with such activities as production, warehousing and transportation is one of the links in the sequence of process by which design

and resources are converted into finished goods that satisfy the needs of customers. In the United States, a group purchasing organization (or GPO) is an entity that is created to leverage the purchasing power of a group of businesses to obtain discounts from vendors based on the collective buying power of the GPO members (Gillinghan, 2003). Many GPOs are funded by administrative fees that are paid by the vendors that GPOs oversee. Some GPOs are funded by fees paid by the buying members. Some GPOs are funded by a combination of both of these methods. These fees can be set as a percentage of the purchase or set as an annual flat rate. Some GPOs set mandatory participation levels for their members, while others are completely voluntary. Members participate based on their purchasing needs and their level of confidence in what should be competitive pricing negotiated by their GPOs.

Group purchasing is used in many industries to purchase raw materials and supplies, but it is common practice in the grocery industry, health care, electronics, industrial manufacturing and agricultural industries. Gillinghan (2003) GPOs are not new. The first healthcare GPO was established in 1910 by the Hospital Bureau of New York. For many decades, healthcare GPOs grew slowly in number, to only 10 in 1962. Medicare and Medicaid stimulated growth in the number of GPOs to 40 in 1974. That number tripled between 1974 and 1977. The institution of the Medicare Prospective Payment System (PPS) in 1983 focused greater scrutiny on costs and fostered further rapid GPO expansion. In 1986, Congress granted GPOs in healthcare "Safe Harbor" from federal anti-kickback statutes after successful lobbying efforts. By 2007, there were hundreds of healthcare GPOs, "affiliates" and cooperatives in the United States that were availing themselves of substantial revenues obtained from vendors in the form of administrative fees, or "remuneration." 96 percent of all acute-care hospitals and 98 percent of all community hospitals held at least one GPO membership. Importantly, 97 percent of all not-for-profit, non-governmental hospitals participated in some form of group purchasing. With healthcare costs rising sharply in the early 1980s, the federal government revised Medicare from a system of fee-for service (FFS) payments to PPS, under which hospitals receive a fixed amount for each patient with a given diagnosis. Other insurers also limited what hospitals could charge. The result was a financial squeeze on hospitals, compelling them to seek new ways to manage their costs (Baily2005). In specifically exempting GPOs from the Federal Anti-Kickback Law, many healthcare providers interpreted the act as an encouragement to the expansion of GPOs. Congress did not specify any limit on contract administration fees, but required the United States Department of Health and Human Services (HHS) to monitor such fees for possible abuse – particularly with respect to fees in excess of 3.0 percent (Gillinghan

2003). In 1991, HHS promulgated safe harbor regulations, reflecting Congress' intent to permit contract administration fees and creating the additional safeguard that GPOs inform members of administrative fees in excess of 3.0 percent. Despite these safeguards, the Government Accounting Office (GAO) published a study in 2002 indicating that GPOs did not always in fact reduce the cost of supplies and equipment for hospitals, but in some cases increased these costs by as much as 37percent. Further examining the practices of GPOs, the Federal Trade Commission (FTC) clarified that "safety zone thresholds do not prevent and should not be appropriately read as preventing antitrust challenges to any of the alleged anticompetitive contracting practices..." of GPOs (Baily 2005). In 2002, the Senate Judiciary Committee's Antitrust Subcommittee imposed stricter standards on GPOs in healthcare, requiring the adoption of a Code of Conduct to which GPOs must subscribe. Critics of GPOs charge that, as long as GPOs receive fees from the vendors they are charged with policing, the industry has anticompetitive contracting potential that should be subjected to further scrutiny and/or regulation Gillinghan (2003).

2.5 Effects of Determinants of Procurement Function on Organization Effectiveness

Brian Farrington (2006) states that purchasing relationships may be internal and external, short- or long-term. Internal relationships are with other links in the supply chain as initiators of a purchase and the users of the goods procured. Increasingly, internal relationships are cross-functional and based on team work. Externally relationships with suppliers, as shown later, may represent a continuum from arm's length to supplier's alliances. Many organizations now rely on suppliers to design, develop and manufacture items that they would previously have produced themselves. As Ford et al observe. The main issue facing managers is no longer about 'buying the right products at the right time, at the right price' but of handling and developing relationships with key suppliers over long periods Farrington (2006).

According to IMP (industrial marketing and purchasing group) customers are not looking for a product from a manufacturer. Instead they seek a solution to a problem from a supplier. Business purchases are problem driven problem may relate to the customer's need to carry out its basic activities efficiently and economically. Examples in cluded the problems of wastage of materials, poor utilization of staff or an unacceptable failure rate in components. One would refer to these as problems of 'rationalisation'. A problem can also arise for positive reasons such as when a company is trying to develop relationships with new customers or enhance the performance of a product. We refer to these as problems of 'development'. Farrington (2006).

Farrington (2006) states that a discipline is a branch of knowledge; an area of study the academic content of purchasing lacks the clearly defined focus associated with other fields of study, such as mathematics, economics and law, and draws heavily on other subjects to build its knowledge base. Purchasing as a sub area of study is often included in wider ranging courses, including logistics management, operations management and marketing. Lyson (2006) argues that procurement is a wider term than purchasing, which implies the acquisition of goods or services in return for a monetary or equivalent payment. Procurement however is the process of obtaining goods or services in anyway including borrowing, leasing and even force or pillage. As procurement is strictly a more accurate term, it is unsurprising that the word procurement is often supplanting 'purchasing' in job titles such as 'procurement manager' procurement agents and head of procurement Fearon (1994).

Purchasing is one of the important functions in all types of business organizations, be it either a small, medium or large-scale commercial or manufacturing unit. No business can think of operating effectively without functions related to purchasing. In a sense no operation is possible without going through the purchasing process. All business is administered or managed by co-ordinating and integrating the six functions;

- a) Creation, the idea or design function,
- b) Finance, the capital acquisition and financial record,
- c) Personnel,
- d) The human resource and labour relations functions, purchasing of required equipment, material and services,
- e) Conversion, the changing of materials to economic goods and
- f) Distribution, the selling of marketing of goods produced.

To this an added function of research which in today's world has acquired important role to play in shaping the business decisions. By its nature, purchasing as a function becomes an integral part of any business activity. Purchasing function is developing sources of supply, finalizing prices, placing orders, obtaining materials by the right time, contributing to standardization, value analysis and affecting disposal of surplus and scrapes. The action of the purchase section is to provide and procure goods against purchase requisition received from stock control or rather department. It keeps record of the sources of supply of various items by very often new sources of supply of various items by very often new sources will have to be developed, prices of several items are negotiated and predetermined out for other tenders are

invited on receipt of purchase requisition. The questions are tabulated and approved in accordance with the procedure held down by the management orders are placed on the basis of quality price placed on the basis of quality and delivery time. The responsibility of the purchasing section does not stop at placing orders; it has to ensure that materials do arrive at the right time; various follow-up methods are used for this purpose. It also contributes to cost reduction through value analysis and standardization. The disposal of surplus is another function handled by the purchasing department (Fearon, 1994).

According to Lamar (1990) purchasing functions today include a wide range of activities. Purchasing has acquired the status of a dynamic management activity. The work of purchasing is performed by the purchasing section and in broader sense. Their function and responsibilities include; - Obtaining the right quantity and quality of materials at the right time so that the production is not affected (Baily, 2005). The purchasing section ensures and sees that the purchases are made at the most competitive price. Nearly 50percent of the annual expenses of a factory represent purchases. it is therefore the responsibility of the purchasing section to see that the funds are utilized on purchases with the utmost discretion. Cost reduction is another responsibility implied in the purchasing function. This can be achieved not only by competitive buying and negotiation but also by techniques such as standardization and value analysis. See if the materials intended can be manufactured in the plant by utilizing spare capability. See that purchases are made only against authorized purchase requisition and proper sanctions. Inform stock control of any changes on the delivery time and of the most economical quantities. In delay cases in obtaining supplies against any purchase requisition. Keep the department concerned informed of the progress, and Suggest latest and more economical materials for use by the manufacturing department (Jessop, 2006). Jessop (2006) notes the main stages in purchasing process are presented as follows;

- a) Recognition of need,
- b) Specification,
- c) Make or buy decision,
- d) Source identification,
- e) Source selection,
- f) Contracting,
- g) Contract management,
- h) Receipt, inspection, verification,
- i) Payment, and

j) Fulfilment of needs.

Purchasing cycle indicate the main activities in which purchasing might be involved. The activities included in the cycle do not include all those that a purchasing staff might be involved with their many activities such as negotiation, vendor rating and source development that are not specifically included. Oakland (2000) the usual duties that are assigned to a purchasing department are: Acting as a window on the world purchasing. Brings continual contact with outside organizations and this can prove a valuable channel of communication whereby news of novel processes, materials, services and equipment is brought to the notice of departments. Most concerned with these matters. Advising on prices for materials or services to be used in new markets or in modified designs.

This activity can be of substantial value since it may help to decide major policies, questions for example the feasibility of meeting a marketing requirement on price or the likely cost of reequipping a unit. Speculative buying is sometimes a duty of purchasing and implies the purchase of goods, not from reasons of immediate need but because it appears that market conditions are particularly favourable. It will be found that departments such as design will need to meet suppliers and discuss problems with them and while in many cases the only persons competent to carry out 'technical' discussions with suppliers are within the knowledge of purchasing. Verifying invoices presented by suppliers. This task is carried out by the purchasing department, sometimes by a customer service department. It is necessary to check that the prices quoted on all invoices agree with those negotiated and this can be done by a direct comparison with the purchase order if the price is quoted there. The absence of prices from purchase orders is to be avoided if possible since it restricts the task of verification of invoices. a further and more real need for verification of invoices arises from the problem of incorrect quantities invoiced or prices perhaps caused by the return of defective material to the supplier to help resolve this problem a note of every rejection should be passed to purchasing. The recording of these rejects will also help to build up a picture of the reliability of the supplier and this may well affect the placing of future orders (Bailey, 2006). warning all concerned if deliveries are not going to be met, it is evident that a delivery date is not going to be met the appropriate departments must be informed in order that work can, if necessary and possible be re-scheduled.

Ensuring delivery of goods and services at the right time. This involves contracting suppliers before the due dates and seeking assurances that these dates will be maintained. A formal

progress system may be set up to do this and a convenient method is to log all delivery requirements in diary form, perhaps raising an enquiry before the due date following this up by a final enquiry just before the date to confirm. Purchasing at least total cost. While the quality and quantity of goods and services may be specified elsewhere, the purchaser must purchase, these at the most advantageous terms. Whenever possible, price should be fixed by competitive tender, if possible by comparison with a target purchase price. Finding and approving suppliers. Suppliers must be taken to include both those who supply goods and those who supply services. This should be done not only by discussion with representatives and examination of catalogues and samples, but also by visits to the vendors' product or service may be the responsibility of the quality or design departments, but the purchaser should be confident that the source of supply is stable, reliable and able to fulfil the demand upon it Baily (2005). According to Berry (2005) purchasing will buy the largest quantities possible. This result in large amounts of raw materials inventory. The manufacturing group desires to maximize production volume in order to spread the significant fixed cost of production over as many units as possible. These large lot sizes results in high amount of work in process, inventory with large quantities of goods pushed into finished goods, whether we therefore responses times to unexpected demand increase. Of course this may result in large amount of inventory in distribution centers (Perhaps the wrong ones) and might not match well with what customers really need. Given the opportunity the sales group might even sell product that cannot possibly be desired on time. After all, they are evaluated on sales, not deliveries, and a more coordinated approach is facilitated by the use of the ERP system.

2.6 Measuring Purchasing Performance

Baily (2005) examines efficiency in purchasing in relation to its stage of evolution at every Baily stages of development, purchasing invariably has a low status and is reactive in operation. Its effectiveness or otherwise is seen in terms of its ability to handle transactions. While it is important that transactions are handled efficiently, achieving strategic purchasing objectives can often assist in simplifying or reducing them. Measurements that centers on the generation of transactional activities in itself often clerical function. One might find for the finance director. This person's view of purchasing may be that the function should: Encourage competition by placing numerous enquiries, Change supplier regularly, Pay the lowest, and Delay paying suppliers for as long as possible. These objectives could in-turn lead to the

following results. Too many suppliers offering materials at the lowest price with no incentive to look at long-term aspects that could to strategic savings, an enormous amount of expediting time is spent by the buyer because suppliers are not paid on time. Too many short duration orders, again increasing administrative effort rather than longer term arrangements that could perhaps core a number of years. Buyers wastefully involved in routine ordering rather than the computer-scheduling suppliers when required. More advanced purchasing organizations would argue that the buyers time is much better spent on such tasks as negotiation, supplier development, cost reduction and internal interface development than on routine administrative activity (Baily, 2005).

Baily (2005) show the likely measurements criteria as the purchasing activity changes so the methods used to evaluate performance also change. Initially measurement is clerically oriented and superficial as the function develops measurement criteria become more tactically and strategically based and the range of measurement criteria increases. This framework of criteria is based on work undertaken by Van Weel (1995) and allows for five stages of development. Where purchasing is essentially reactive and fragmented, performance criteria are few or even non-existent. The main objective for the activity is a convert requisition into orders and gets the supplier in. As the function develops it is likely to be given the responsibility for handling the paperwork involved in the purchasing system. At this point in judging the functions contributing clerical efficiency is probably the main criterion. In the third stage of development the role is being viewed more in respect of its commercial usefulness to the organization. At this stage a chief buyer or a purchasing manager might be appointed while crucial and system efficiency are being measured the function would also be expected to begin to show savings against budget or costs. At this stage savings or cost reduction are likely to be measured. At the next important stage of development purchasing is seen as being of more strategic importance. At this point measurement criteria are established to assess key suppliers' developments through vendor rating schemes.

At the profile of purchasing becomes higher its interface with other functions becomes more significant and this may also be measured. At this stage the purchasing manager is reporting to the chief executive of the organization. Almost certainly concern will be shown for total acquisition costs and there will be emphasis on lowest price. Finally, the fifth stage purchasing is recognized as being of strategic importance with the head of the function probably of director level. Here measurement is centered on strategic effectiveness (bailey, 2005). Purchasing ability does make world class concepts work would be measured and thus there would be

considered interest in for example; Improving the strategic profile of suppliers, Improvement in the supply chain, Education of the supplier base, Moves towards co-maker ship and strategic, suppliers alliances, each supplier's adoption of JIT, TQM & Zero defects philosophies. Measurement criteria are dynamic and must develop as the organization develops clerical efficiency gives way to cost efficiency and eventually strategic effectiveness. (Baily 2005) Lyson (2006) defines purchasing performance evaluation as the quantitative assessment over a given time towards the achievement of corporate or operational goals and objectives relating to purchasing economics, efficiency and effectiveness.

Quantitative assessment is objective and measurable using such measurements as number of orders placed, reduction in lead time, price savings and reduced administrative costs and will tend to be used where purchasing is regarded as a mainly clerical or transactional activity. Quantitative assessments are judgmental impressions regarding the contribution of purchasing to suppliers good will, partnership sourcing, value analysis and internal customer satisfaction and is applicable when procurement regards strategic function (Mugenda and Mugenda 2006). Evaluation is a more accurate term than performance measurement by definition measurement implies quantification or the expression of a quality or attribute in numeral terms. Although the performance of purchasing managers is usually assessed by means of objective, quantified measures such as cost price reduction and contribution to added value or profitability, performance evaluation frequently uses subjective, quantitative assessment approaches. Progress over a given time Evaluation may relate to long (over one year) or short term performance.

Long term objectives frequently extend several years into the future. Periodic reviews look at progress and outstanding actions needing in a past period and targets set for future period. For this purpose, evaluation should always relate to specific objectives (Jessop, 2006). Goals or objectives are basic to performance evaluation if we don't know where we are going we shall not know when we arrive. Corporate objectives will usually be at board level such goals are relatively permanent expressed in broad terms and derived from the mission statement of the organization. Today most corporate objectives relate to the provision of customers' satisfaction.

Organizational goals must be congruent that is consistent with corporate goals, not only overtime but also vertically and horizontally that the objectives set for different activities concerned with delivering value to the ultimate customers as in a supply chain must be

consistent and integrated (Jessop 2006). Corporate objectives usually expressed in broad qualification terms must be turned into specific for operational purposes thus the general strategy of delivery and cost effectiveness procurement service may, for the next financial year require purchasing to;

- a) Achieve earnings of 3percent on purchasers;
- b) Award contracts for an e- tendering and supplies information database not later than done-subject to availability of future and ensure that not less than 10percent of purchasing staff are working towards an approved purchasing qualification.

Operational goals shown above can be expressed as quantified (SMART) objectives that are they should be specific, measurable, attainable, results oriented and time based and these are meant for the following:

- a) To ensure a consensus btw individual, functional and corporate aims and objectives,
- b) To improve actual results with planner performance,
- c) To ascertain preventable and non-preventable reasons for sub-standard performance and provide a basic where required for improvement,
- d) To improve decision making,
- e) To identify and make visible the contribution of the purchasing function to organizational competitive advantage and
- f) To improve feedback to staff which can improve motivation, encourage the search for improvement and the more efficient and effective discharge of purchasing responsibilities (Lysons, 2000).

Saunders (1997) what is measured not only provide data that can inform judgments about the standards of performance achieved but also provide signals about what is important measurement have a motivational influence, therefore, and they help to shape perceptions of what is important and to concentrate charges on actions relevant to them. Schemes are needed to cover the performance of suppliers, the performance of individual personnel. Choice of wrong factors for measurement may divert attention away from important goals, union have not been covered. Lyrics might say the same companies which claim that quality is important are only paying up services to what is fashionable unless they monitor and report equally performance along with other data such as financial performance.

The conclusion of this discussion is that measures should be related to the objectives chosen for the function and then an array of measures should relate to performance at both operational

and strategic levels. conventional measures of quality delivery and availability as well as costs of the activities in different parts of purchasing and supply management may be appropriate with regard to current performance but others need to be devised to monitor strategic development programme with regard to supplier and product development are concerned more with capabilities of the supplier than with product deliveries (Gartner, 2008). Total costs of supply are a more relevant measure in the analysis of supply chains than a focus which emphasizes only the purchase price, weighted points plan and cost ratio approaches are based upon the recognition that problems of quality and delivery can offset and benefits achieved from a lower priced supplier (Morrison, 1994; Baily 1998; David, 2004; Menzer, 2006; Rudl, 2006).

This brings us to supply management. Supply management deals primarily with the oversight and management of materials and services inputs, management of the suppliers who provide those inputs, and support of the process of acquiring those inputs. The performance of supply management departments and supply management professionals is commonly measured in terms of amount of money saved for the organization. However, managing risk is one of the other critical aspects of supply management; especially the risk of non-availability at the required time of quality goods and services critical for an organization's survival and growth (Gartner, 2008).

The importance of supply management in global business has prompted the formation of professional organizations to address the need for higher levels of supply management skill and expertise. One of the largest of these is the Institute for Supply Management, a United States not-for-profit association that includes more than 40,000 members. It is affiliated with the International Federation of Purchasing and Supply Management, a union of local and national purchasing associations with approximately 200,000 members. For companies seeking to fulfil diversity supplier spend commitments, the National Minority Supplier Development Council with 39 affiliated nation-wide councils, was established in 1972 to assist in promoting supplier diversity, and also provides management training and access to viable minority business enterprises (Wilson, 2008). Many certification programs are relevant to the supply management profession. Some are offered through non-profit associations, such as the Certified Purchasing Manager (CPM) and Certified Professional in Supply Management (CPSM) through the Institute for Supply Management. There are also for-profit companies who offer certification programs, such as Next Level Purchasing, Inc. who offers the Senior Professional in Supply Management (SPSM) Certification (Gartner, 2008).

According to Gartner, the research firm, leading providers of supply and contract management software include SAP, Ariba, Bravo Solution, and Emptoris (Wilson, 2008). According to Jessop (1994) the purchasing function has the responsibility for the receipt, custody and distribution of very large sum of appropriate quantities of the materials to be held in order that the operations needs may be met in economic matters as it is possible, purchasing function may be managed and operated in and highly efficiency way. The contribution that a good supply function can be made to the success of an organization is today almost universally recognized. Most organizations adopt these practices alongside their own purchasing procedures. This has enhanced the creating of harmonious and supportive environment that fostered the efficiency of purchasing within the organization. The procurement of supplies and equipment is a potential instrument of environment policy. Careful purchasing gives full weight to environment considerations in the selection of products and can help improve environment standards by reducing pollution and waste. It can also help through natural operation of the market influence purchases and suppliers in their pricing policies and product ranges (Lysons, et al., 2006).

2.7 Gaps from Reviewed Literature

A review of relevant literature has shown seven types of research gaps that have informed this study and these are:

Evidence Gap

There has been an evidence gap exhibited with a provocative exception that has arisen as current research excludes the informal construction of financial inclusion. This gap involves allows for conclusions in their own right, but are contradictory when examined from a more abstract point of view. There is need for subsequent inclusion of the arising from the review of this study to be synthesized in order to reveal contradictory evidence (see Müller-Bloch & Kranz, 2014).

Knowledge Gap

The knowledge gap is a common gap in the prior research. There are two settings where a knowledge gap (knowledge void) might occur. First, knowledge exists in the actual field of financial inclusion to epistemic positions and literature from related research domains (see Müller-Bloch and Kranz, 2014; Miles, 2017).

Practical-Knowledge Gap

This kind of gap has shown a discrepancy that can motivate new research in financial inclusion in a constructivist direction. A practical–knowledge (action-knowledge) conflict arises when the actual behavior of professionals is different from their advocated behavior. In this case, research seeks to determine the scope of what ought to be done (Jacobs, 2011; Müller-Bloch & Kranz, 2014; Miles, 2017).

Methodological Gap

A methodological gap is the type of gap that deals with the conflict that occurs due to the influence of methodology on research results. Most studies fall within the quantitative domains and in this study, this gap addresses the conflicts with the research methods in the prior studies and offers a new line of research that is divergent from those research methods (Jacobs, 2011; Müller-Bloch & Kranz, 2014; Miles, 2017).

Empirical Gap

An empirical gap is the type of gap that deals with gaps in prior research. This conflict deals with the research findings or propositions need to be evaluated or empirically verified. For example, the empirical gap often addresses conflicts that no study to date has directly attempted to evaluate the subject or topic from a qualitative approach (see Jacob, 2011; Müller-Bloch & Kranz, 2014).

Theoretical Gap

The theoretical gap is the type of gap that deals with the gaps in theory with the prior research. Financial inclusion has been examined from a positivist point and using a wide range of variables and constructs and this is similar to a methodological gap conflict. The researcher in this study desires to employ phenomenology as one of those epistemological and methodical approaches in terms of the gap in the prior research. Theoretical gaps are a common occurrence in examining prior research on a phenomenon (Jacobs, 2011; Müller-Bloch & Kranz, 2014; Miles, 2017).

Population Gap

A population gap is a common gap recognized among researchers. The cited studies do not cover research in Zambia and the public sector. This over score the need for this study. This gap is the type of research regarding the population that is not adequately represented or under-researched in the evidence base or prior research (see Robinson, et al, 2011).

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter presents the research design which was influenced very strongly by both Crotty's (1998) four elements of research: the epistemology, theoretical perspective, methodology and methods, and Creswell's (2009) view on research design. It covers the type of research design, how sampling was done, data collection and analysis. Ethical issues form part of this chapter.

A research design is created by the researcher and in essence is moulded (rather than dictated) by the ontological as well as epistemological assumptions guiding the inquiry (Blaikie, 2010). From these two philosophical assumptions, the methods are selected which are responsive to the research questions, context and the participants. When weaving a research design, it involves seeing the research project at different levels and these are:

- 1) At the level of research question and corresponding objective;
- 2) At the level of ontology, epistemology and human nature assumptions;
- 3) At the level of population and sampling;
- 4) At the level of data collection;
- 5) At the level of data analysis;

Once the researcher has addressed the five levels, one would be in a position to appreciate the design of the project as a whole.

The question in this section relating to identifying the research design is "Where to start?" What is the scope of this project and "What is the nature of the data required?" In order to answer these questions, we then link up with Creswell (2003). Creswell advises case study researchers to first develop a research design matrix to ground their studies.

The research design matrix shows how each research question is welded ontologically and epistemologically by describing how the researcher will approach the research question piecemeal and how the whole project will be approached. A research design and research strategy follow from the development of research matrix. The matrix eventually points to the logic(s) or research strategy and the selection of methods that are appropriate for sampling, data collection and analysis in the research. Below (table 3.1) is the research design matrix that points to how each research question has been designed and how it will be answered and

linking each one epistemologically to an appropriate sampling, data collection and analysis technique.

Table 3.1 Research Design Matrix

RESEARCH QUESTIONS	OBJECTIVES	SAMPLING AND DATA COLLECTION	DATA COLLECTION METHODS	DATA ANALYSIS
What is the current state of procurement of barriers of functions in the Ministry of Health?	To explore the current state of barriers of procurement functions in the Ministry of Health.	Staff involved in procurement functions to be enlisted by maximum variation sampling.	Survey questionnaire	Univariate, bivariate analysis
What is the current state of procurement function efficiency in the Ministry of Health?	To describe the current state of procurement function efficiency in the Ministry of Health?	Staff involved in procurement functions to be enlisted by maximum variation sampling.	Survey questionnaire	Univariate, bivariate analysis
Why are there barriers in the state of procurement functions efficiency in the Ministry of Health?	To test the assumptions of the systems theory if they hold in explaining the role of barriers in the state of procurement function efficiency in the Ministry of Health.	Staff involved in procurement functions to be enlisted by maximum variation sampling.	Survey questionnaire	Regression analysis
How can procurement function in the health sector be improved	To develop a framework that could be used to enhance procurement function in the Ministry of health	This is an analytic outcome		

3.2 Research Design

Looking at the research matrix, this was a case study approach guided by the pragmatic research strategies according to Norman Blaikie's assumptions of designing social research (Blaikie, 2000:78; 2010:79). The case study of the Ministry of Health is an in-depth investigation of an individual group phenomenon or institution. The researcher opted to undertake a case study approach as it allows consensus building since the learner is able to relate real life and work issues to the theoretical knowledge and empirical results (Kangethe, 2002). The case study is to determine factors and relationships that have resulted in the behaviour under study. It also describes and explains rather than to predict.

3.3 Research Dimension

This was a one-shot or cross-sectional study design. The design was aimed at finding out the prevalence of a phenomenon, problem, by taking a snap-shot or cross-section of the population. This obtains an overall picture as it stands at the time of the study.

3.4 Population and Sampling

This study drew the following as units of analysis using maximum variation sampling. Recognizing that there is no single sampling frame of persons that deal in procurement, but categories of persons are involved, the researcher opted to use maximum variation sampling. In essence, a maximum variation sample contains cases that are purposefully as different from each other as possible. This type of sampling is useful for enlisting members in the study that are different with a view to examine a range of viewpoints relating to the thing that the researcher is interested in studying; that is, maximum variation sampling is a search for variation in perspectives (see Batchman et al., 2009). From a target population of 125 employees with purchasing functions from various departments the researcher selected 96 employees using the formula below.

$$n = \frac{N}{1 + N(e)^2}$$

Where n is the desired sample size, N is the population size, and e (0.05) is the level of precision.

According to Mugenda and Mugenda (1998) suggest that when dealing with heterogeneous members that is population with different characteristics the sample size should be at least 30percent of the total population so as to adequately capture the heterogeneity of the population or the variability in the population. The study applied stratified random sampling technique to select respondents. Stratified random sampling method was used to administer questionnaires to all employees in various departments (see table 3.2). Stratified random sampling technique selects a sample from each stratum without biasness from accessible population. The advantage of simple random sampling technique is that it ensures that each member of the target population has an equal chance of being included in the sample. The reason for adopting stratified random sampling is because it is more reliable and detailed and that information can be obtained easily.

Table 3.2 Strata of Sample from the Target Population

Strata	Sample
Purchasing and supply	40
Public relations	10
Information technology	10
Audit	6
Human Resource	30
Total	96

3.5 Data Collection Procedures

Once the items (Questions) of the questionnaire were appraised, a pilot study was done at the Ministry of labor. This Ministry was considered one of the best simulators in terms of operations culture. The pilot study was done with 15 staff. This pilot study was also used to validate the questionnaire (Polit et al., 2001; Teijlingen et al. 2001). Apart from validating the questionnaire, the pilot experience helped in assessing the feasibility of a (full-scale) study (Polit et al., 2001; Teijlingen et al. 2001). The pilot helped in determining that the research project was realistic and workable as it uncovered potential logistical problems which most pilot tests tend to show (Teijlingen et al. 2001). The researcher had an opportunity to perfect

the questionnaire with a view to determine whether or not the items (questions) are inappropriate or too complicated (de Vaus, 2014; Baker 1994). During the pilot study, the researcher was in a position to eliminate or refine or re order the questions/items (van Teijlingen et al. 2015). The pilot exercise also allowed the possibility to test the recording process as well as the transcription.

After the pilot, the researcher personally administered the questionnaires and this helped to clarify difficult questions, saved time and ensured quick response. The researcher picked the completed questionnaires from the respondents the very day or on a day promised by respondents.

3.6 Identification and Operationalization of Variables

Independent variables

In this study, the current state of barriers of procurement function as an activity composed of arranging material, acquiring goods and services for smooth production at the best possible quality, opportunity and cost is operationalized in six ways as:

- a) Availability of materials from suppliers,
- b) Ideal Lead Time,
- c) Efficient personnel
- d) Professionally qualified and experienced employees
- e) Type of management
- f) Availability of enough financial resources

Each variable was measured on a five-point ordinal scale as follows 1 for strongly disagree, 2 for disagree, 3 for somewhat agree, 4 for agree and 5 for strongly agree. A decision point was made such that for barriers to be present, a person ought to score below the median which is 14 to indicate that there are barriers. For barriers to be absent, a person needed to have a composite score more than the median value.

Dependent variables

The dependent variable (Ideal role of procurement function) being acquiring goods and services for an entity and was operationalised as being effective in five subordinated functions as follows:

- a) Obtaining materials without fraud
- b) Delivery of right material/services (quality wise)
- c) Delivery of material/services at right time,
- d) Delivery of material/services in right quantity
- e) Delivery of Material/services in optimum cost

Each variable was measured on a five-point ordinal scale. To determine if procurement function was associated with procurement function effectiveness, a median score above or equal to was set *a priori*. For the procurement function to be effective, a person needed to have a composite score above or equal to the median being 13. A composite score ≤ 13 was regarded as effective procurement function and above 13 as ineffective procurement function.

3.8 Data Analysis

Data was collected using the questionnaires and sorted out to check completeness and clarity. The data was analyzed using SPSS version 22. Descriptive analysis like the mode, mean, median and range and regression are used to show the results.

3.9 Validity and Reliability of the Instruments

Validity is the accuracy and meaningfulness of inference which is based on the research results. It is also the degree to which results obtained from analysis of the data actually represent the phenomenon under study. Validity was guaranteed as the researcher used constructs from previous research.

According to Mugenda (1999) reliability is the degree to which research instruments yield consistent results of data after repeated trials. In testing reliability errors are the deviation from true measurements due to the fact that have not been effectively addressed by the researchers. To ascertain the reliability of questionnaires pre-testing method is subjected on the respondent

that is not part of the study to determine consistency of results. The survey instrument was initially pre-tested on a small sample in the Ministry of Home Affairs to help all the questionnaires to have same meaning of questions to all the respondents.

Following the pilot study reliability of the questionnaire was evaluated through Cronbach's Alpha which measures the internal consistency. The value of the alpha coefficient ranges from 0-1 and may be used to describe the reliability of factors extracted from dichotomous and or multi-point formatted questionnaires or scales. In this study, Cronbach's Alpha was used for testing the reliability of the questionnaire responses, using SPSS software. The Alpha test was run on the different sections of the questionnaire. The critical point for Cronbach's Alpha is 0.7 (see Cooper & Schindler, 2008), and in this case the average score for all the IVs variables was found to be 0.858 and for the DVs was 0.762. From the test, one can safely say that all the four scales were reliable as their reliability values exceeded the prescribed threshold of 0.7.

Table 3.3: Reliability analysis Alpha co-efficient of IVs

Scale	Alpha coefficient
Availability of materials from suppliers,	0.836
Ideal Lead Time,	0.788
Efficient personnel	0.702
Professionally qualified and experienced employees	0.721
Type of management	0.812
Availability of enough financial resources	0.775

Table 3.4: Reliability analysis Alpha co-efficient of DVs

Scale	Alpha coefficient
Obtaining materials with no fraud	0.721
Delivery of Right material/services (quality wise)	0.883
Delivery of material/services at right time,	0.711
Delivery of material/services in right quantity	0.800
Delivery of Material/services in optimum cost	0.762
Obtaining materials with no fraud	0.733

3.10 Ethical Considerations

Ethics are an important part of the process of making scientific decisions in research (Smith, 1999) and should be a priority on any researcher's research design agenda (Eide and Kahn, 2008). Different ethical considerations must be considered on the basis of the type of research undertaken; however, all studies should follow the same ethical standards. Creswell (2009) argues that ethical practices require a lot more than a set of static guidelines; they should be seen in the research problem, in research questions, objectives and problems, in data collection, analyses, and research writing and dissemination. Discussions on and perhaps, more precisely, breaches of ethical standards in social research appear to revolve around particular problems that recur in various ways (Creswell, 2009). Ethical principles have been divided into four key areas that overlap (Bryman & Bell, 2011); (Patton, 2002). Different views about ethical principles are next discussed.

Harm to Participants

In different contexts, there are different meanings for the word harm. For example, Bryman (2008) stated that study participants may experience various types of harm through research: physical harm, harm for participants' development; loss of self-esteem, stress, and inducing subjects to conduct reprehensible actions. The nature of this research could not physically harm the participants nor perform actions that could damage them. Before the survey, the researcher will provide as much detail as possible in the form of an information pack to make the participants very clear about the research purpose. During the surveys, considerable attention was paid to educating participants about the research goals and pointing out that participants were not expected to be harmed.

The question of harm to participants is further tackled in ethical codes by the enforcement of diligent preservation of confidentiality of individual information (Bryman, 2008) and thus the names of individuals were revealed in the presentation.

Informed Consent

The researcher included a participant information kit as part of these ethical requirements and was sent out before the surveys. These packages will contain study details and obtained the consent of the participant, including a consent form. Participants was given an opt-out clause if they reconsidered participating in the study, and will also be provided a form to sign. Smith (1999) recommends that informed consent is a safeguard that provides participants with adequate

information on the study to make informed choices regarding their participation. A clear, written agreement (the consent form) was obtained before the survey or after the survey between the researcher and the participant. The consent will also include a clear agreement about how much time the survey would take and provide the surveyees with the information necessary for their informed decision on whether to participate (Bryman, 2008). Bryman (2008) argues that researchers can not intentionally reveal the right amount of time or any research information to avoid having a negative impact on their decisions to participate.

Invasion of Privacy

Privacy issues are related to anonymity and confidentiality concerns. Bryman (2008) claims that the study participant would not revoke the right to privacy by giving informed consent in its entirety. The nature of this research will not require personal confidential information from participants that is regarded as sensitive.

Deception

"Deception happens when researchers represent their work as something else than what it is" (Bryman, 2008: 124), and Bryman further argues that the ethical objection against deception is based on two aspects: first, it's not good to do and secondly, it would threaten the reputation of social research and mutual trust between society and researchers. The researcher was truthful with respect to the scope of the study and its aims.

CHAPTER 4

FINDINGS

4.1 Introduction

The findings are from a cross sectional study which data was collected in the months of January to March 2021 from staff at the Ministry of health Headquarters. The case study was designed to answer three research questions which are:

- a) What is the current state of procurement of barriers of functions in the Ministry of Health?
- b) Why are there barriers in the state of procurement functions in the Ministry of Health?
- c) How can procurement function in the health sector be improved?

The answers to these research questions are presented below following the description of the sample.

4.2 Demographics

Of the 96 public servants who participated in the study, $n = 70$ (72.9 percent) were males and $n = 26$ (27.1 percent) were females and their mean age was 38.2 (SD \pm 4.5) years. The oldest was 61 and the youngest was 21 years. The mean service years of the respondents were 18 (\pm SD 5.2). The levels of education were high for the jobs they were performing as almost every one $n = 90$ (93.7 percent) had at least a diploma and $n = 6$ (6.3 percent) had a college certificate. Table 4.1 shows some socio-demographic characteristics of the public servants who were studied.

Table 4.1: Demographic profile

<i>Social demographic Characteristic</i>	<i>f</i>	<i>percent</i>
<i>Sex</i>		
a) Male	70	72.9
b) Female	26	27.1
<i>Level of education</i>		
a) College Certificate	6	6.3
b) Diploma	67	69.8
c) Bachelor's degree	18	18.8
d) Masters and above	5	5.2

4.3 The Current State of Procurement

In this section, the researcher desired to establish what the current state of procurement functions in the Ministry of Health was looking at the process of selecting vendors, establishing payment terms, strategic vetting, selection, the negotiation of contracts and actual purchasing of goods. Four parameters were assessed as shown in Table 4.2. It is evident that the current state of procurement is more on the negative as shown by the accentuating the costs of doing business, activities are not done on schedule and procurement is riddled with barriers.

Table 4.2: State of Procurement Functions

<i>State of Procurement Functions</i>	<i>Yes</i>		<i>No</i>	
	<i>F</i>	<i>percent</i>	<i>F</i>	<i>percent</i>
The current state of procurement is accentuating the costs of doing business	78*	81.2	18	18.8
The current state of procurement is such that activities are not done on schedule	69*	71.8	27	28.2
The current state of procurement is riddled with barriers	89*	92.7	7	7.3
The current state of procurement is limited by availability clients to provide the scope of goods and services we need	23	23.9	73*	76.1

4.4 Current State of Procurement Function Effectiveness

In this section, the researcher desired to establish what the current state of procurement function effectiveness is in the Ministry of Health. This was assessing the extent of deliverables when the Ministry performed its roles in meeting the procurement functions. Procurement effectiveness was assessed using five sub variables of procurement effectiveness. Respondents were expected to indicate their extent of agreement on a five-point scale as follows: 1 for strongly disagree, 2 for disagree, 3 for somewhat agree, 4 for agree and 5 for strongly agree and these are shown in Table 4.3 below. Generally, the Ministry of Health had met with effectiveness its procurement functions as shown in Table 4.3.

Table 4.3: State of Procurement Function Effectiveness

<i>Procurement function effectiveness Variables</i>	<i>SDA</i>	<i>DA</i>	<i>SWA</i>	<i>A</i>	<i>SA</i>
Our Ministry has been obtaining materials without fraud	0	1	0	24	71
Our Ministry has been receiving deliveries of Right material/services (quality wise)	0	2	2	59	33
Our Ministry has been receiving deliveries of material/services at right time	0	13	20	28	35
Our Ministry has been receiving deliveries of material/services in right quantities	5	6	2	35	48
Our Ministry has been receiving deliveries of material/services at an optimum cost	18	18	12	21	27

In order to determine the overall procurement effectiveness, the researcher computed the composite score. The ideal composite score for procurement function effectiveness was supposed to be ≤ 13 and the outcome was 9.27 implying that there was effectiveness of the procurement functions looking at the process of selecting vendors, establishing payment terms, strategic vetting, selection, the negotiation of contracts and actual purchasing of goods (Table 4.3b).

Table 4.3b: Descriptive

<i>Mean</i>	<i>Median</i>	<i>Mode</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
9.27	9	9	2.6	6	18

4.5 Reasons for the observed procurement function effectiveness in the Ministry of Health

In this section, the researcher desired to link the two variables. This relates to answering the research question ‘Why is the procurement function yielding the observed procurement function effectiveness in the Ministry of Health?’ Before demonstrating the linkage, the researcher has considered to show the descriptives of the independent variables being the barriers. The barriers were assessed using six variables. Respondents were expected to indicate their extent of agreement on a five-point scale as follows: 1 for strongly disagree, 2 for disagree, 3 for somewhat agree, 4 for agree and 5 for strongly agree and these are shown in Table 4.4 below. Generally, the Ministry of Health had met limitations with its procurement functions as shown in Table 4.4b.

Table 4.4: State of Barriers

<i>Procurement function effectiveness Variables</i>	<i>SDA</i>	<i>DA</i>	<i>SWA</i>	<i>A</i>	<i>SA</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Our Ministry has been experiencing challenges in availability of materials from our suppliers*	2	19	23	32	20
The set Ideal Lead Time in our Ministry has not been met most of the times in our procurement process*	1	16	22	33	24
Our personnel in the Ministry are efficient	2	8	24	30	32
Our Ministry has professionally qualified and experienced employees to undertake procurement activities	1	15	17	29	34
Type of management in our Ministry is such that it has negatively affected our procurement process*	2	1	3	69	21
Our Ministry has insufficient financial resources to procure goods and services*	0	0	0	21	75

In order to determine the overall procurement effectiveness, the researcher computed the composite score. The ideal composite score for barriers was supposed to be ≤ 14 and the outcome was 12.39 implying that the barriers at a general level are on the lower side to affect the observed effectiveness of the procurement functions. However, the barriers include challenges in availability of materials from our suppliers, failing to meet the set ideal times in the procurement processes, the type of management and insufficient financial resources to procure goods and services (see table 4.4b).

Table 4.4b: Descriptives

<i>Mean</i>	<i>Median</i>	<i>Mode</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
12.39	12	9	3.7	7	22

In order to demonstrate the linkage between the barriers and procurement function effectiveness, linear regression was done. Multiple regression was used as the researcher desired to predict the value of procurement function effectiveness and barrier to procurement function a variable based on the value of another variable. All the independent variables were entered and none was removed as shown in Table 4.5

Table 4.5: Variables Entered/Removed^a

<i>Model</i>	<i>Variables Entered</i>	<i>Variables Removed</i>	<i>Method</i>
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1 Our Ministry has enough financial resources to procure goods and services, Our Ministry has been experiencing challenges in availability of materials from our suppliers , Type of management in our Ministry is such that it has positively affected our procurement process, Our Ministry has professionally qualified and experienced employees, The set Ideal Lead Time in our Ministry has not been met most of the times in our procurement process, Our personnel in the Ministry are efficient^b Enter

a. Dependent Variable: Effectiveness of procurement function

b. All requested variables entered.

This table provides the R and R^2 values. The R value represents the simple correlation and is 1 (the "R" Column), which indicates a very low degree of correlation. The total variation in the dependent variable (procurement function effectiveness) as shown by the R^2 value (the "R Square" column) indicates how much this dependent variable can be explained by the independent variables. In this case, 100 percent can be explained, which is very large (Table 4.6).

Table 4.6 Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000 ^a	1.000	1.000	.000

a. Predictors: (Constant), Our Ministry has been receiving deliveries of material/services at an optimum cost, Our Ministry has been Obtaining materials with no fraud, Our Ministry has been receiving Deliveries of Right material/services (quality wise), Our Ministry has been receiving deliveries of material/services at right time, Our Ministry has been receiving deliveries of material/services in right quantities

In order to show how well the regression, fit the data, ANOVA was computed and Table 4.7 below reports how well the regression equation is exacted to fits the data i.e., how it predicts the dependent variable procurement function effectiveness.

This table indicates that the regression model predicts the dependent variable significantly well. How do we know this? We look at the "Regression" row and go to the "Sig." column. Here, p is > 0.05 (0.719), which indicates that, the overall, the regression model is not statistically significant to predict the outcome variable effectiveness of procurement function (i.e., it is not a good fit for the data).

Table 4.7: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	27.182	6	4.530	.614	.719 ^b
Residual	657.057	89	7.383		
Total	684.240	95			

a. Dependent Variable: Effectiveness of procurement function

b. Predictors: (Constant), Our Ministry has enough financial resources to procure goods and services, Our Ministry has been experiencing challenges in availability of materials from our suppliers , Type of management in our Ministry is such that it has positively affected our procurement process, Our Ministry has professionally qualified and experienced employees, The set Ideal Lead Time in our Ministry has not been met most of the times in our procurement process, Our personnel in the Ministry are efficient

Further in discussing the model, the coefficients table below provides us with the necessary information to predict effectiveness of procurement function from the barriers, as well as determine whether the barriers contribute statistically significantly to the model (by looking at the "Sig." column). Furthermore, we can use the values in the "B" column under the "Unstandardized Coefficients" column, as shown below in Table 4.8. None of the predictor variables show any statistically significant effect as p values are ≥ 0.05 .

Table 4.8: Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0percent Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	12.036	2.070		5.814	.000	7.923	16.150
Our Ministry has been experiencing challenges in availability of materials from our suppliers	-.426	.477	-.174	-.893	.375	-1.374	.522
The set Ideal Lead Time in our Ministry has not been met most of the times in our procurement process	.368	.408	.146	.901	.370	-.443	1.179
Our personnel in the Ministry are efficient	-.195	.427	-.076	-.456	.649	-1.043	.654
Our Ministry has professionally qualified and experienced employees	-.051	.382	-.021	-.133	.894	-.809	.707
Type of management in our Ministry is such that it has positively affected our procurement process	-.578	.499	-.159	-1.160	.249	-1.569	.412
Our Ministry has enough financial resources to procure goods and services	-.428	.887	-.066	-.483	.631	-2.190	1.334

a. Dependent Variable: Effectiveness of procurement function

4.6 Summary of findings

The Ministry of Health experiences three barriers in meeting its procurement functions and these include challenges in availability of materials from our suppliers, failing to meet the set ideal times in the procurement processes, the type of management and insufficient financial resources to procure goods and services. In spite of these barriers, at a general level, the Ministry of Health has demonstrated that its procurement functions are effective as the regression model does not demonstrate a statistically significant outcome to predict the outcome variable effectiveness of procurement function (i.e., it is not a good fit for the data) as p is > 0.05 (0.719). Further, none of the four predictor variables show any statistically significant effect as p values are ≥ 0.05 .

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter looks at what similarities exist with previous studies and renders the limitations as well as significances. Notable recommendations for practice and research are made.

5.2 Analysis of the Findings

The researcher sought to determine the barriers that could be linked to performing an effective procurement function with a view to develop a framework of actions that could be applied to improve the current procurement functions in the health sector. The barriers do exist however; they do not have an effect on procurement functions to create ineffectiveness in the system.

In spite of these findings, the researcher would like to moreover emphasise the three barriers especially challenges in availability of materials from our suppliers, failing to meet the set ideal times in the procurement processes, the type of management and insufficient financial resources to procure goods and services.

Research has demonstrated the need for managements to embrace an institutional culture of transparency and fairness so as to reduce corruption and restore public confidence. It would be prudent to have staff trained in change management and involving them in key decision making so as to reduce resistance to change and associated unintended consequences. Bureaucracy in the public intuitions has tendency to affect the effectiveness of procurement function, hence there is need to streamline government operations by eliminating non value adding procedures.

The findings in this study that are not consistent with findings previously established (Kithiia, 2015). The present study therefore adds to existing findings by negating those of Kithiia by showing that the same cannot be realized from a different context. Moreover, the finding confirms that effectiveness of procurement function could be attributed to personnel that are efficient and professionally qualified and experienced to undertake procurement activities.

The finding that transport management could affect performance adds to existing literature which does not take the health sector into consideration (Mukolwe and Wanyoike, 2015). Perhaps background characteristics also do not moderate the relationship between procurement function effectiveness and barriers. Flanigan et al. (2017) for instance found that experience

and age do not moderate the relationship between leadership and performance. Indeed, most studies point to background characteristics as having direct impacts on organizational performance rather than play moderating roles (Grimm & Smith as cited in Flanigan et al., 2017; Magoshi & Chang, 2009; Sakuda, 2011).

5.3 Significance of the Study

The findings of this study may help fill existing information gaps on implementation of procurement strategy and its barriers in the Ministry of Health. The findings will further provide information to future scholars who might need to research on the barriers to procurement strategy implementation Ministry of health. The study has bridged the gap in knowledge on procurement strategy implementation in this public sector and to enhance practice. The study will assist the Ministry of Health in policy development for the top management to adopt, formulate and implement the best policies and practices to help the Ministry in improving service delivery. Based on the study, the top management ought to address the observed weak are in the implementation of procurement strategy and take necessary steps to address the problem.

5.4 Limitations of This Study and Research Implications

The study has its own limitations. The study did not focus on supply chain determinants of organizational performance but looked t procurement function outside the supply chain. The study could have generated helpful evidence if it had looked at supply chain information system, inventory management, transport management, warehouse management and customer supplier relationship. The finding that the barriers have no influence on procurement functions calls for future research to interrogate other possible supply chain drivers. The current study was restricted to the Ministry of Health and as such, the findings may therefore have been influenced by the context in which this study was conducted. The researcher therefore recommends that similar studies should be replicated in other public sectors so as to improve the external validity of the findings.

5.5 Recommendations

The study has established that institutional culture may affect procurement function effectiveness but in a non-significant way. However, the Ministry may have to adopt a culture of transparency and fairness so as to mitigate any room for corruption and restore public

confidence. The study further recommends the training the staff on change management and involving them in key decision making so as to reduce resistance to change and associated unintended consequences. Bureaucracy in the public intuitions affected the procurement function effectiveness, hence there is need to streamline government operations by eliminating non-value adding procedures.

5.6 Conclusion

In view of the findings made, the following conclusions were made. It is not possible that the procurement function in the Ministry of Health takes large amounts of revenue and there is no evidence that it is becoming an expensive. The concerns raised are unfounded as then barriers have no influence riddled with barriers such that the sourcing of goods and services poses a challenge. Hence this study recommends sustaining the current procurement processes.

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APPENDIX I - SURVEY QUESTIONNAIRE



THE UNIVERSITY OF ZAMBIA SCHOOL OF GRADUATE STUDIES

Questionnaire Identification Number|_|_|_|_|

TOPIC: Improving The Procurement Function in the Public Sector: A Case Study of Ministry of Health

Dear Respondent,

In reference to the above topic, you have been randomly chosen to help in this research. I am a student from the University of Zambia conducting a research on improving the procurement function in the Public Sector: A case study of Ministry of Health

INSTRUCTIONS

1. Do not indicate your name on the questionnaire.
2. Tick the answer that expresses your view as shown:
3. Only one response is required for each question and where you have to write your response, you may be brief as possible by filling in the space provided.

DATE OF INTERVIEW...../...../.....

LOCATION OF THE INTERVIEW: Ministry of Health.

Please Note: the research is purely for academic purpose. Therefore, you are assured that the information obtained will be treated confidentially. Your cooperation will be appreciated.

Section A: Respondent's Bio Data

1. Kindly indicate your gender (a) Male (b) Female

2. What is your age as of last birthday?

3. What is your highest-level education?

College Certificate

Diploma

Bachelor's degree

Masters and above

4. Kindly indicate the Department/Unit you belong to.

Purchasing and Supply

Public Relations

Audit

Human Resource

Finance

Planning and Research

Information Communication and Technology

Section B: Current State of Procurement

What are current state of procurement? Kindly indicate the extent to which you agree on a five-point scale as follows: 1 for Strongly Disagree, 2 for Disagree, 3 for somewhat agree, 4 for agree and 5 for strongly agree

The current state of procurement is accentuating the costs of doing business	
The current state of procurement is such that activities are not done on schedule	
The current state of procurement is such that it is free from corruption	
The current state of procurement is riddled with barriers	
The current state of procurement is limited by availability clients to provide the scope of goods and services we need	

Section C: Challenges faced by the Public Sector in relation to Procurement

What are the challenges in procurement? Indicate the extent to which you agree on a five-point scale as follows: 1 for Strongly Disagree, 2 for Disagree, 3 for Somewhat Agree, 4 for Agree and 5 for Strongly Agree

Our Ministry has been experiencing challenges in availability of materials from our suppliers	
The set Ideal Lead Time in our Ministry has not been met most of the times in our procurement process	
Our personnel in the Ministry are efficient	
Our Ministry has professionally qualified and experienced employees	
Type of management in our Ministry is such that it has positively affected our procurement process	

Section D: Barriers with Procurement

What are the barriers with procurement? Indicate the extent to which you agree on a five-point scale as follows: 1 for Strongly Disagree, 2 for Disagree, 3 for Somewhat Agree, 4 for Agree and 5 for Strongly Agree

Our Ministry has enough financial resources to procure goods and services	
Composite score for barriers	
Our Ministry has been Obtaining materials with no fraud	
Our Ministry has been receiving Deliveries of Right material/services (quality wise)	
Our Ministry has been receiving deliveries of material/services at right time,	
Our Ministry has been receiving deliveries of material/services in right quantities	
Our Ministry has been receiving deliveries of material/services at an optimum cost	
Composite procurement function efficiency scores	

THANK YOU FOR YOUR CO-ORPERATION