

**FACTORS INFLUENCING PROCUREMENT OF MATERIALS IN PARASTATALS,
A CASE STUDY OF KENYA MEDICAL SUPPLIES AGENCY KEMSA**

BY

RICHARD NYAGA WAKUTHII

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DECLARATION

This research project is my original work and has not been presented for award of a degree or for any similar purpose in any other institution

Signature: _____

Date: _____

Richard NyagaWakuthii,

BUS-4-2276-17

Supervisor: This research project has been submitted with my approval as University supervisor

Signature: _____

Date: _____

Madam Irene Kinyua

School of Business

Gretsa University.

DEDICATION

I dedicate this research project to my beloved mum and my family for great support in my success and to Almighty God for the gift of life.

ACKNOWLEDGEMENT

I wish to thank God almighty for the gift of life and strength to go through the entire course and in particular this research. I am grateful to my supervisor Madam. Irene Kinyua who has been professionally and skillfully supporting me in this research project with his input. I thank him for always being there to offer his guidance even when so busy with other tasks .My sincere gratitude goes to the management and staffs of the Gresta University for this patience and efforts to guide me through this course. I would not forget to salute my colleagues and friends who has been assisting and advising me towards success and completion of this research project.

May God bless you all.

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LIST OF ABBREVIATIONS AND ACRONYMS

EOQ: Economic Order Quantity

MRP: Material Requirement Planning

JIT: Just in Time

TOC: Theory of Constraints

MRO: Maintenance Repair and Operations

WIP: Work in Progress

OPERATIONAL DEFINITION OF TERMS

Material Requirement Planning – This is a schedule showing the components required at each level of the assembly and based on lead times, calculates the time when these components will be needed.

Economic Order Quantity – This is the optimal ordering quantity for an item of stock that minimizes cost.

Just - In -Time elimination of waste and continuous improvement of the products and efficiency

ABSTRACT

The study was to investigate factors influencing the procurement of materials in PARASTATALS that would assist in the study, particularly the department concerned. The objectives of the study were outlined in chapter one. They include the effects of Economic order quantity in procurement of materials in PARASTATALS, the effects of Material Requirement Planning in relation to procurement of materials and the effects of Just in Time in relation to procurement of materials in PARASTATALS. In chapter two details and literature review are highlighted in including past studies, critical review of major issues and gaps to fill by the study.

Details of the tendering system as outlined by various scholars and local government act are quoted. The procedures for open tendering system and competence of the tendering committee members are heighted under critical review; a target population of 400 staffs was used because they are the ones involved in inventory control of the organization. The data collection instrument that was released to the respondents is also outlined. The data collected was analyzed using descriptive analysis.

CHAPTER ONE INTRODUCTION

1.1 Background to the study

All businesses and institutions require inventories. As inventories are used, their value is converted into cash, which improves cash flow and return on investment. There is an expense for conveying inventories which expanded working expenses and diminished benefits.

Total stock administration solicitations: stream of sorts of stock required, free market activity designs, works that inventories perform, destinations of stock administration and expenses related with inventories. Stock isn't just overseen at the total level yet additionally at the thing level. Decision rules about inventory include: Which individual inventory are most important how individual items are to be controlled, how much to order at one time, and when to place an order. One often used inventory classification is related to the flow of materials into, through and out of manufacturing organization. Raw materials are purchased items received which have not entered the production process.

Work in-progress (WIP) is crude materials that have entered the assembling procedure and are being chipped away at or hanging tight to be dealt with. Completed merchandise are the completed result of the creation procedure that are prepared to be sold as finished things. Appropriation inventories are done products situated in the dissemination framework. Upkeep, fix and operational supplies (MRO) are things utilized underway that don't turn out to be a piece of the item. In clump fabricating, the essential motivation behind inventories is to decouple free market activity.

Stock fills in as a cushion among free market activity, client request and completed merchandise, completed products and segment accessibility, necessities for a task and the yield from the former activity, and part and materials to start creation and supplies of materials. Expectation inventories are developed fully expecting future interest. Wellbeing stock is held to cover arbitrary capricious vacillations in free market activity or lead-time. Its motivation is to avoid interruptions in assembling or conveyances to clients.

As indicated by Laimaru S. (2012) Security stock is likewise called cradle stock or hold stock, Things buy or made in amounts more prominent than required promptly make part size inventories, in some cases called cycle stock, It is the bit of stock that drains step by step as clients requests come in and is recharged consistently when providers requests are gotten. Transportation inventories exist in view of the time expected to move products starting with one area then onto the next, for example, from plant to a circulation focus or a client. They

are at times called development inventories. Fence stock is bought to limit the market variances of crude materials exchanged on the overall market. M.R.O things are utilized to help general tasks and upkeep, yet which don't turn out to be legitimately parts of an item.

A firm wishing to amplify benefit will have at any rate the accompanying target: most extreme client administration, ease plant task, and least stock venture. Inventories help to amplify client administration by ensuring against vulnerability. Stock is conveyed, there has to an advantage that surpasses the expenses of conveying that stock. As indicated by Kotler P, (2015) who referenced that the main valid justification for conveying stock past current needs is it costs less to convey it than not. Inventories help make an assembling task progressively beneficial in four different ways: Inventories permit activities with various rates of creation; assembling can ceaselessly deliver a sum equivalent to average interest. Inventories enable assembling to run longer creation lines.

As indicated by Laimaru S. (2012) Inventories enable assembling to buy in enormous amounts which results in lower requesting costs per unit and amount limits costs utilized for stock administration choices: thing cost the examination by Olungu second release conveying costs, requesting costs, stock out expenses, and limit related expenses.

An advantage is something that has esteem and is relied upon to profit the future tasks of a business. Liabilities are commitments or sums owed by an organization. Owner's equity is the difference between assets and liabilities. The accounting equation: $Assets = liabilities + owners' equity$. The balance sheet is usually shown with the assets on the left side and liabilities and owners' equity on the right side. Capital is the amount of money the owners have invested in the company. Retained earnings are increased by the revenue a company makes and decreased by the expenses incurred

Income (profit) -The primary purpose of businesses is to increase the owner's equity by making a profit. $Income = revenue - expenses$ revenue comes from the sale of goods or services and often is made as a promise to pay at a later date, called an account receivable. Costs are the expenses acquired during the time spent making income, typically ordered into expense of products sold and general and regulatory costs as per Armstrong (2011).

Expenses of merchandise sold are the expenses brought about to make the item. General and managerial costs incorporate every other expense in maintaining a business. At the point when stock is obtained as crude material it is recorded as a benefit. When it enters creation, it is recorded as work in advancement stock (WIP) and, as it is prepared, it worth increments by

the measure of direct work connected to it and the overhead ascribed to its handling. The material is said to ingest overhead, when the products are prepared available to be purchased, they don't progress toward becoming income until they are sold. Businesses develop financial statements showing the cash flows into and out of the business. Any shortfall of cash must be provided for, perhaps by borrowing. This type of analysis is called cash flow analysis. From a monetary perspective, stock is a benefit and speaks to cash that is tied up and can't be utilized for different purposes. Stock has a conveying cost the expense of capital, stockpiling and hazard. Two estimates that amount stock speculation and identify with deals are the stock turns proportion and long stretches of supply.

Logistics or the routine system for the time of receipt of issue notes, the selection of what is required and marshalling of the needs of each customer.

Kenya Medical Supplies Agency (KEMSA) is responsible for purchasing process which involves maintaining the economic order quantity, Material Requirement Planning and also the Just I time philosophy. These activities in turn influence the procurement of materials in parastatals.

1.2 Statement Problem

Kenya Medical Supplies Agency is affected by Economic Order Quantity, Material Requirement Planning and Just In time purchasing systems.

Therefore, the study seeks to establish the factors affecting procurement of materials in parastatals.

1.3 Objectives of the study

1.3.1 General Objective

To establish the factors affecting procurements of materials in parastatals.

1.3.2 Specific Objectives

The researcher seeks to meet the following objectives:

- i. To determine how economic order quantity affect procurement of materials in Parastatals.
- ii. To investigate how material requirement planning affect procurement of materials in Parastatals.
- iii. To establish how just in time services influences procurement of material in Parastatals.

1.4 Research Questions

- i. How does economic order quantity influence procurement of materials at KEMSA?
- ii. How does material requirement planning affect procurement of materials at KEMSA?
- iii. Does just in time services influence procurement of materials at KEMSA?

1.5 Significance of the Study

The researcher's main aim was to establish the importance of purchasing systems to the performance of organizations both private and public. The research study will enable the organization under study realize whether the method being used while purchasing are effective or not. The findings will also help the government to put up strategy in planning the budget of purchasing.

The study also help future researchers who wish to take study in purchasing and supplies management and also to organization carrying out purchasing procedures. The information offered in the study will assist the government in implementing its policies to safeguard organizations and consumers. Cultures of some organizations, some aspects may be overtaken by current events or may require updating for the benefit of the stakeholders. Hence such a study may present an opportunity. Other researchers may use it as a stepping stone for other advanced studies. Also other areas not studied by the researcher can be identified and hence taken up for study.

1.6 Limitations of the Study

While carrying out the study the researcher encountered problems of delays in receiving duly completed questionnaire, confidential policies in the organization worked against the wishes of the researcher. Some respondents were not willing to cooperate in areas affecting management aspects citing violation of such guidelines. The problems were overcome by having repeated visits, convinced them the information was for research basis.

1.7 Scope of the Study

The study involved Kenya Medical Supplies Agency Nairobi where the target population was forty respondents who were managers, workers and also the drivers.

The scope of the study was on factors influencing procurement of materials in parastatals. The study took six months to be completed that is from January to June 2013.

1.8 Conceptual framework

This was a hypothesized model identifying the concepts or variables under study and their relationships between the dependent variable and the independent variables which include: lead time, economic order quantity, and material requirement planning & just in time variables.

In this case, these variables affect logistics management. The diagram shows the conceptual model, which encompasses the major variables and their possible patterns of influences. In this context of the below conceptual framework, the theoretical underpinning of the study is that the procurement of materials in the lead time is a complex multi affected concept that involves an inter-play of various factors.

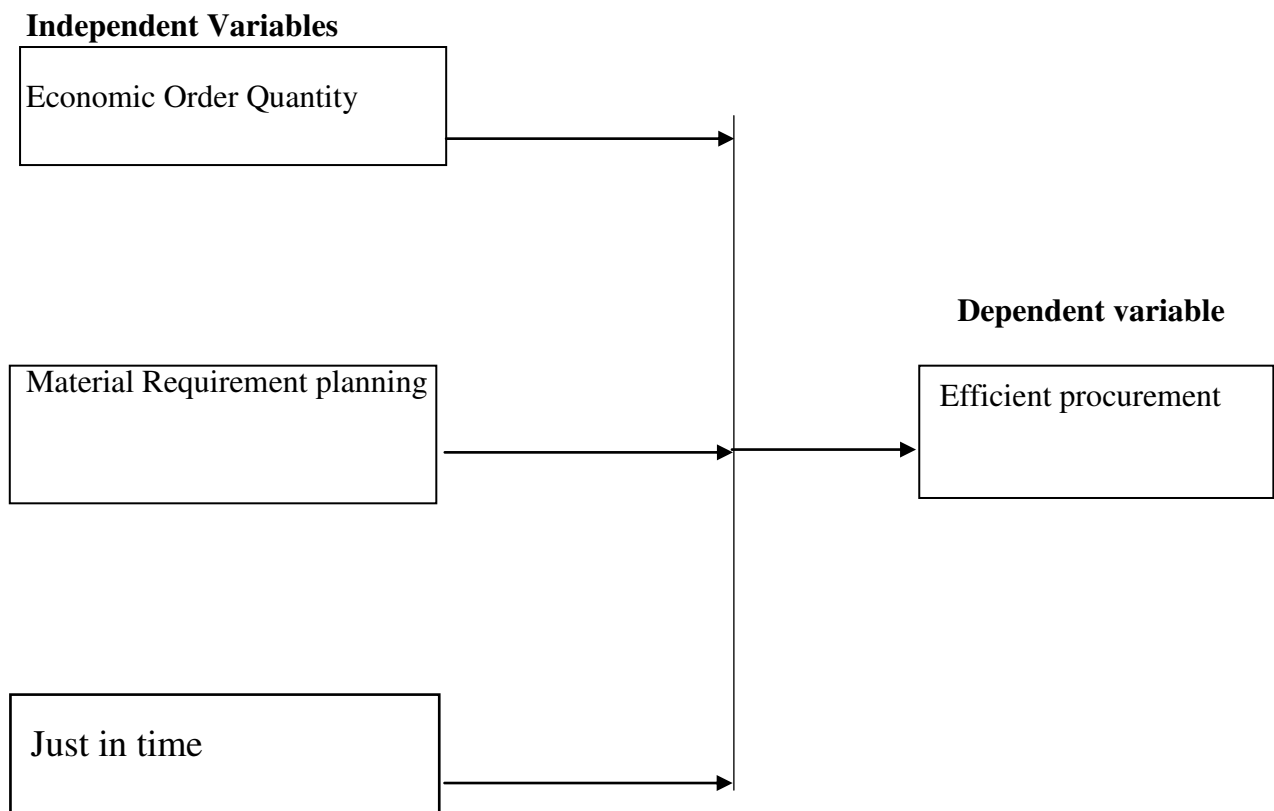


Figure 1 conceptual framework

Source (author, 2019)

1.9 Operational Definition of Variables In The Conceptual Framework

The Economic Order Quantity (EOQ) is the optimal ordering quantity for an item of stock

that minimizes cost.

Material Requirement Planning (MRP) is a plan (need plan) demonstrating the parts required at each degree of the get together and boned on lead times, figures when these segments were to be required

Without a moment to spare (JIT) fabricating is the end of all waste and consistent improvement of efficiency. Waste methods something besides the base measure of gear, parts, space, material and specialists' time totally important to increase the value of the item. Lead time is time between ordering of goods and receiving of goods from supplier. According to CK Armstrong (2017), lead time is the period taken to obtain a requirement from the time the need is ascertained to its fulfillment.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter was aimed at identifying what other researchers had done in the area of factors influencing procurement of materials. The review was meant to enhance an understanding of contribution to the problem. The findings of review helped the researcher to note the gaps in the knowledge and create an entry point of the study. It also sharpened and widened the conceptual framework of the research by examining certain drivers that have possible influence on the lead time and their effects on procurement of materials. This review also helped in discovering the connection, analogies, or other relation between different research results by comparing various related studies in the area.

2.2 Overview of Procurement of Materials

Material control is the process of providing quantity and quality of materials needed in the manufacturing process with an eye on economy in storage and ordering cost, purchase price and working capital. It involves assessments of stock to be as per the production schedule decision of the extent of the stock to be held procurement of stock from suppliers, storage facilities available for materials carried into the storehouse, issue of materials as per the requisitions of various departments of the organization and follow up at the various levels. On the other hand Michael (2012), inventory refers to the process whereby the investments in materials and parts received in stock is regulated within pre-determined limits set in accordance with inventory policy established by the management.

Benefits of management inventories include, it results in more profit margin, reduces the operational and inventory cost resulting in reduction of production cost, more competitive capacity, heavy turn-over and increase in profitability. Eliminates surplus that cause financial hardships because they tie up capital and shortages leading to poor operational results. After profitability of organization which has adapted perfect purchasing systems, the researcher intends to know whether this will match with other researcher's.

According to Nazia Kevah (2011) proper purchasing systems led to effective systems of performance of organization. He hesitated that the globalization rapid technological change, shorter product life cycle are some of the factors which greatly influence purchasing system

to bring out positive growth to the organizations. Naziah Kevah gave out the following advantages of purchasing systems to an organization. There is total reduction on cost as barriers to an effective purchasing system are deducted. An organization is able to meet and achieve its goals of growth and prosperity in the market competences and can outsource what is relevant to be purchased.

2.3 Past Studies

According to Johnson T. (2016) stated that globalization rapid technological change short product life cycle growing of E-procurement, internet use, have an effect on the procurement of materials in organization. The purchasing system when considering these issues may bring about effective procurement of materials in parastatals.

According to Armstrong (2011) stated that for many manufacturers, wholesalers, inventory is their largest investments of incorporate assets and thus problems such as stock and bull whip affect due to poor purchase systems of stocks. He also stated that necessary activities in the purchasing process internally and externally such as double order to handling cost both money and time in the purchasing procedure. He stated that to avoid these problems, organizations should not isolate their suppliers and other entities. OningBaiand Ying (international University of Hoyskoan, 2011) they found out that there is growth of small businesses that adopt between purchasing systems in purchasing inventory which emphasize an efficient and effective purchasing procedures. The researchers found that organizations that carry effective and efficient purchasing have enormous growth due to reduced delay in purchasing.

2.4 Economic Order Quantity

The Economic Order Quantity (EOQ) is the optimal ordering quantity for an item of stock that minimizes, cost. To calculate the EOQ a mathematical model of reality must be constructed. The expense of putting in a request is autonomous of the size of the request; the conveyance charge is likewise free of the amount requested.

EOQ can be utilized to figure out what things fit into the without a moment to spare model and what level of JIT is monetarily beneficial to a specific association. They ought to be considered for dreary buying and MRO things. The expense of requesting and the expense of conveying stock both rely upon the amount requested. The requesting choice guidelines will limit the aggregate of these two expenses. The best realized framework is the financial

request amount (EOQ) According to Hellen Keller (2012).

The suppositions on which the EOQs based are: Demand is generally consistent and is known. The thing is created or obtained in parts or clusters and not consistently. Request planning expenses and stock conveying expenses are steady and known. Substitution happens at the same time. There are numerous circumstances where the presumptions are not legitimate and the EOQ idea is or no utilization.

The normal, stock and yearly expense of conveying stock increment, yet the quantity of requests every year and the requesting cost decline. Try to locate the specific request amount in which the all-out expense of conveying stock and the expense of requesting will be limited. Stock is expensive to hold it is advantageous to reduce levels. EOQ results in the lowest total costs. This technique works well for minor items used on a variety of products but makes limiting assumptions that price is stable and usage is ready. It ignores lead time. EOQ approach has several limitations in practice, these are; it requires the cost of ordering or acquisition to be input.

The cost is somewhat difficult to determine accurately. It requires the cost of carrying to be an input which is also difficult to determine accurately. It requires the cost of carrying to be an input which is also difficult to determine. It does not cope well with varying demand patterns. It does not also relate well to the economics of manufacturing or supply. Thus economic order quantity has a great influence on procurement of materials.

Analysis of the costs involved led by the devising of formulae which enable an economic order quantity to derived for any combination of the variable of price, rate of usage or demand and internal cost. EOQ is the quantity that results is the lowest total of variable costs. The economic order quantity attempts to minimize the total costs of ordering and carrying inventory and is based on the assumption that demand is uniform. Often demand is not uniform particularly is material requirement planning and using the EOQ formula to calculate an economic time between orders.

This is calculated by dividing the EOQ by the demand rate. This produces a time interval for which orders are placed. Instead of ordering the same quantity (EOQ) orders are placed to satisfy requirements for the calculated time interval. The number of orders placed in a year is the same as for an economic order quantity, but the amount ordered each time varies. Thus, the ordering cost is the same but, because the order quantities are terminated by the actual demand, the carrying cost is reduced. The calculation is approximate Precision is not

important order requisition can bring about an effective purchasing system in an organization.

2.4.1 Material Requirement Planning (M.R.P)

According to Lyson2011, MRP serves a batch or job production environment where the schedule (priority plan) showing the components required at each level of the assembly and, based on lead times, calculates the lead time when these components will be needed. The two types of demand are independent and dependent. Independent demand is not related to the demand for any other product. Master production schedule items are independent demand items. Since independent demand is not related to the demand for any other assembly or product, it must be forecast. Dependent demand is directly related to the demand for higher level assemblies or products and can be calculated. MRP is designed to do this calculation. An item can have dependent and independent demand. A service or replacement part may have both. Dependency can be both horizontal and vertical product tree. Planners are concerned with horizontal dependency when a part is delayed or there is a shortage and other parts will have to be rescheduled.

Material requirement Planning has two major objectives; determine requirements and keep priorities current. The material requirement plan's objective is to determine components are needed to meet the master production schedule and, based on lead time, to calculate the periods when the components must be available. It must determine what to order, how much to order, when to order and when to schedule delivery.

The demand for, procurement of components change daily. It must be able to add and delete, expedite, delay and change orders. The master production schedule drives the material requirements plan. The MRP is a priority plan for the components needed to make the products in the MPS. The plan is valid only if capacity is available when needed to make the components, and the plan must be checked against available capacity.

MRP's major disadvantage is that it is highly data dependent, both accurate and timely. JIT and Kanban work best in a highly stable and predictable environment. They are not as effective in highly volatile environments. Theory of Constraints (TOC) works best when the constraint can be identified and will be a constraint long enough to be managed effectively.

TOC is not as effective in a less stable environment where the constraint changes and is not easily identified. Hybrid systems like Kanban and MRP are successful when MRP is used for advanced planning and Kanban is used as an execution system. JIT and TOC can be used

together where TOC prioritizes the areas of improvement based on knowing the constraints and the JIT continuous improvement efforts follow that lead.

Material requirements planning drive, or are input to, production activity control and purchasing. MRP plans the release and receipt dates for order. Production activity control and purchasing must plan and control the performance of the orders to meet the due dates. The three inputs to the MRP system are the master production schedule, the inventory records and the bill of materials. There are two kinds of inventory records and the bills of material. The first is called arranging factors and incorporates data, for example, request amounts, drives times, wellbeing stock and scrap which don't change oftentimes The second sort of data vital is on the status of everything what amount is accessible, what amount is apportioned, and what amount is accessible for future interest. These are kept up in a stock record document or thing expert record.

Material necessity arranging is likewise a generation arranging and stock control framework used to oversee assembling forms. Most MRP frameworks are programming based, while it is conceivable to direct MRP by hand too. A MRP framework is planned to at the same time meet three goals: Guarantee materials are accessible for creation and items are accessible for conveyance to clients. Keep up the most reduced conceivable material and item levels in store arrangement producing exercises, conveyance calendars and acquiring exercises. History preceding MRP, and before PCs ruled industry, reorder-point/reorder – amount (ROP/ROQ) type strategies like EOQ (Financial Request Amount) had been utilized in assembling and stock administration.

As per create material necessity arranging. The main organization to utilize MRP was Dark and Decker in 2011, with Dick Alban as venture pioneer. According to Wight (2017) developed MRP into manufacturing resource planning (MRP II).

2.4.2 Just in Time (JIT)

According to Kysons (2011) Just in Time manufacturing is the elimination of all waste and continuous improvement of productivity. Waste means anything other than the minimum amounts of equipment, parts, space, and material and workers time absolutely necessary to add value to the product. The long term result of eliminating waste is a cost efficient quality oriented fast response organization that is responsive to customer needs. Such an organization has a huge competitive advantage in the market place.

Value satisfies the actual and perceived needs of the customer and does it at a price the customer can afford and considers reasonable. Another word for this is quality. Quality is meeting and exceeding customers' expectations. Adding value to a product does not mean adding cost. Users are not concerned with the manufacturer's cost but only with the price they must pay and the value they receive. Many activities increase cost without adding value and, as much as possible, these activities should be eliminated.

According to Kaiser Family Foundation (2014) waste is anything in the product cycle that does not add value to the product is waste. Waster making parts with the policies set by management in responding to the needs of the market place. Management in responding for establishing policies for the market segments the company wishes to serve and for deciding how broad or specialized the product line is to be the greater the diversity of products, the more complex the manufacturing process becomes and the more difficult it is to plan and control.

Standardization reduces the planning and control effort needed, the number of items required and the inventory that has to be carried. The "ideas" product is one that meets or exceeds customer expectations makes the best use of materials and can be manufactured with a minimum of waste. As well as satisfying the customer, the products design determines both the basic manufacturing processes that have to be used the cost, and the quality of the product.

The product showed the designed so it can be made by the most productive process with the smallest number of operations, motions and ports and includes all the features that are important to the customer.

Group products together into product families. Products were to be in the same family if they use common workflow or routing, materials, tooling, setup procedures and cycle times. Workstations can then be set in work cells. The work centers required to make this family can be laid out according to the steps to make that family. Parts can now pass one by one, or in very small lots, from one workstation to the next (Cellular manufacturing) Work cells permit high-variety, low-volume manufacturing to be repetitive. Procedure adaptability is attractive so the organization can respond quickly to changes in the volume and blend of their items. To accomplish this, administrators and hardware must be adaptable. See machine adaptability, speedy changeover, and administrator adaptability.

Quality was significant for two reasons. In the event that quality is absent in what is provided

to the client and the item is investigator, the client was disappointed. If a procedure produces scrap; it makes disturbed calendars that defer providing the client expands the expense of the item. Assembling must guarantee that the procedure is fit for creating the required quality reliably and with as near zero deformities as could be expected under the circumstances. The advantages of a decent quality program are less piece, less modify, less stock, better on time generation, opportune conveyances, and progressively fulfilled clients. Ultimately, the use is the company's customer, but the user is also the next operation in the process.

Quality at any one work center should meet or exceed the expectations of the next step in the process. Quality at the source means doing it right the first time and if something does go wrong, stopping the process and fixing it. Total productive maintenance is "preventive maintenance plus continuing efforts to adopt, moiety and refine equipment to increase flexibility, reduce material handling, and promote continuous how" several conditions are needed to achieve uninterrupted flow of materials : uniform plant loading, a pull system, valid schedules, and linearity.

Uniform plant loading means that the work done at each workstation on should take about the same time. In repetitive manufacturing this is called balancing the line, which means that the time taken to perform tasks at which workstation on the line is the same or very nearly so. The result were not bottlenecks and no build-up of work-in-process inventory.

According to pulls product from the preceding operation and needed. The preceding operation does not produce anything unless a signal is sent from the following operation to do so. The framework for flagging interest relies upon the physical format and conditions in the plant. The most outstanding framework is the Kanban framework. The subtleties differ, yet it is essentially a two-container, fixed request amount, request point framework. There should be a valid schedule. The schedule sets a flow of materials coming into the factory and the flow of work through manufacturing. To maintain an even flow, the scheduled must be level. In other words, the same amount should be produced each day. Mixed model scheduling means that some of everything is made each day in the proportions to meet demand. A demand shifts between models, the assembly lines can respond daily.

The emphasis on JIT is on achieving the plan no more no less. The concept is called linearity and usually reached by scheduling to less than full capacity. A successful JIT environment can be achieved only with the cooperation and involvement of everyone in the organization (total employee involvement). Operators take responsibility for improving processes,

controlling equipment, correcting deviations, and becoming vehicles for continuous improvement. Employees must be flexible in the tasks they do. Managers and supervisors must become coaches and trainers, develop the capability of employees, and provide coordinating and leadership for improvement.

The major effect that JIT has no forecasting is shortened lead-time. If lead times are short enough that production rates can be matched to sales rates, forecasting for the master production schedule becomes less important. The JIT process has the potential for reducing those lead times.

MRP is a push system, meaning that the material needs are calculated ahead of time and pushed out to the production systems as a production order. The pull system underlying concept is not to pre-plan and generate schedules, but to react to the final customer order and produce only what is needed to satisfy demand and then only when it is needed. If it is a purchased item, the major effort is to work with suppliers to reduce the cost and time of purchase order and delivery. Because of the forward looking nature of MRP, it can be over effective in an environment with a great deal of variability and uncertainty. MPP's major disadvantage is that it is highly date depend, both accurate and timely JIT and Kanban work best in a highly stable and predictable environment. They are not as effective in highly volatile environments. According to Armstrong (2011) Theory of constraints (TOC) works best when the constraint can be identified and will be constraint long enough to be managed effectively. TOC is not as effective in a less stable environment where the constraint changes and not easily identified.

Hybrid systems like Kanban and MRP are successful when MRP is used for advanced planning and Kanban is used as an execution system. JIT and TOC can be used together where Toc priorities the areas of improvement based on knowing the constraints and the JIT continuous improvement efforts follow that lead.

2.5 Critical Review

Not all the purchasing departments' budget for the purchase requisition of materials thus his research was ineffective to organizations that the purchasing department does not budget.

According to Armstrong (2011) research on appraisal on performance, they found that performance of an organization grows if the purchasing function is core process of the organization. Criticism; The two researchers failed to indicate that strikes by employees may

bring down the performance of the organization. Characteristic catastrophes may likewise influence.

They additionally neglected to show that Administration confinements on the associations, for example, on expenses may influence the exhibition of the association if very forced.

As per Boyd H.W (2018) the approach is hypothetically engaging for a few reasons.

To start with, pooling lead-time vulnerability among a few providers is an approach to diminish the security stock expected to meet administration targets. Second, progressive conveyances of littler "split" requests will lessen cycle stock. Third, the gradual requesting cost of the second and resulting requests might be moderately little in an assortment of settings.

2.6 Ends and holes to be filled

The previous writing survey indicates procurement of materials in parastatals can make upper hands, support deals and benefits, while setting aside cash, time and stress. It wraps lead time around the association which causes it travel through the different phases of the purchasing procedure. This ensures that goods are in the organization when required. Therefore, there was a lot that was needed to be done in this area to have good for the organization to conduct and carry out its businesses very easily and also to facilitate the environment for the organization to carry out this business in order to have more customers which in turn affect the prosperity of the organization. However, this research attempts to fill this gap and discuss the challenge in general. The study was to bridge the gap that exists between the present knowledge in the field and the research findings.

2.7 Conceptual framework

This was a hypothesized model identifying the concepts or variables under study and their relationships between the dependent variable and the independent variables which include: lead time, economic order quantity, and material requirement planning & just in time variables.

In this case, these variables affect logistics management. The diagram shows the conceptual model, which encompasses the major variables and their possible patterns of influences. In this context of the below conceptual framework, the theoretical underpinning of the study is that the procurement of materials in the lead time is a complex multi affected concept that involves an inter-play of various factors.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter identifies the specific strategies and procedures the researcher used in data collection, analysis and presentation. This chapter focuses on research designs target population, sampling techniques and description. Proposed research instrument, data collection procedures and analysis criteria.

3.2 Research Design

The researcher used descriptive design to study factors affecting procurement of materials in parastatal the study was to describe how economic order quantity, material requirement planning and lead time affects procurement of materials in parastatal. The survey design was the research instruments which included questionnaires, observations and interviews to answer the research questions.

Survey design refers to the strategy used in collecting data from large population by selecting representative's sample for observation and analysis.

3.3 Target Population

The study targeted both skilled and non-skilled, permanent and non-permanent employees of Kenya Medical Supplies Agency. The target a population was 400 employees within the organization.

Table 3.1 target population

Level	Size
Top management	100
Middle level	120
Low level	180
Total	400

3.4 Sample Size and Sampling Techniques

The target population was 400 employees consisting of junior staffs, the clerks from procurement offices and the senior management staff. The sample size was to be 10% of target population according to Mugenda and Mugenda (2011). The sample size was 40 staffs. Simple random sampling technique was used and thus making each respondent to have equal opportunities of being considered in the study.

3.5 Data Collection Instruments

The research instruments were questionnaires and interviews. A questionnaire was carefully designed instrument written types or printed for collecting data directly from the respondents. An interview was direct face to face attempt to obtain reliable and valid information in form of verbal from respondents.

I preferred the above methods since majority of respondents were literate and the methods was appropriate for such a study. The questionnaire was both structured and instructed to capture as much details as possible.

3.6 Data Analysis Method and procedure

Data collected was analyzed and coded the key variables using descriptive statistics by applying both quantitative and qualitative methods. The findings was presented using tables, pie charts and graphs. Ethical considerations was observed during the research process.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND PRESENTATION

4.1 Introductions

This chapter describes how the information collected was analyzed. A number of tables were drawn which showed how different kinds of results were interpreted. All tables were labeled clearly to enable any future researchers to understand. Thus under data analysis' and presentation of the results study used both qualification and quantitative analysis.

4.2 Quantitative Analysis and Result

4.2.1 Response Rate

The researcher obtained a 100% response rate from all the respondents

4.2.2 Data on the gender proportion of respondents

Table 4.1 Gender of the Respondents

Gender	Frequency	Percentage (%)
Male	28	70
Female	12	30
Total	40	100

Source: Author, 2019

Gender of the respondents

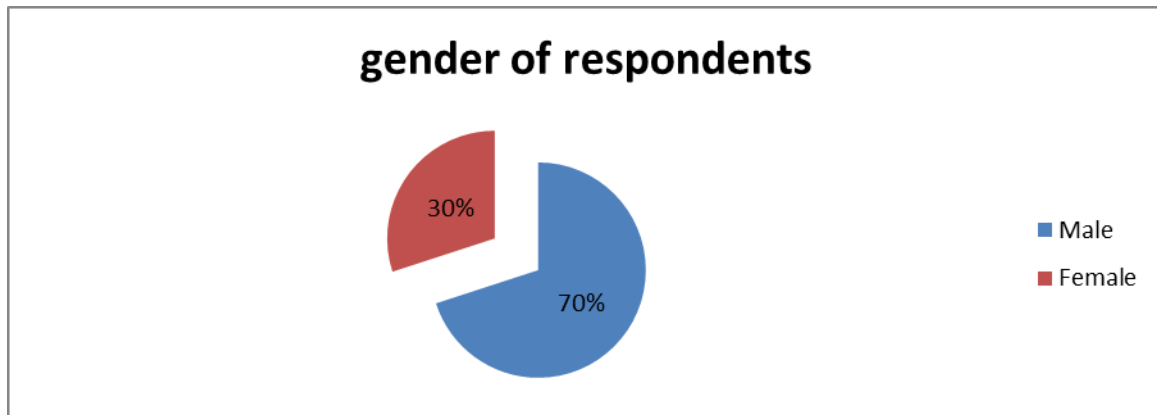


Figure 4.1 Gender of Respondent

Source: Author, 2019

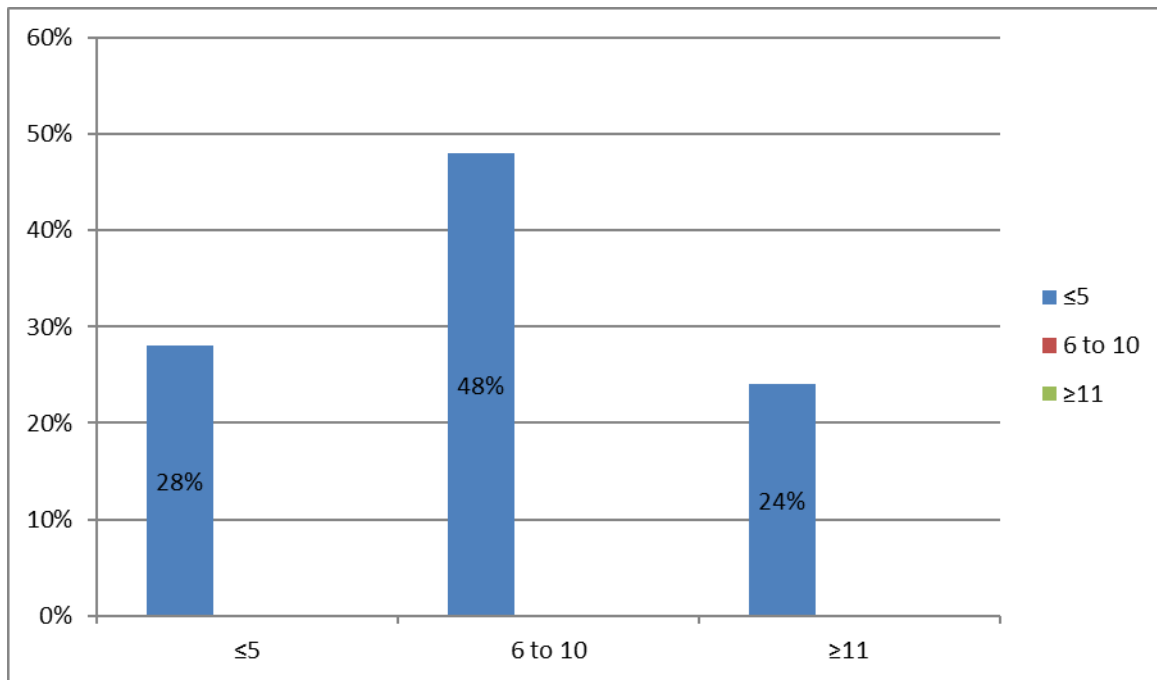
From the table and figure 4.1 above male comprised of 70% which females accounted for 30%. This means that males dominated material management activities composed to female.

4.2.3 Length of services for the respondents

Table 4.2 Duration of services at work.

Year	Frequency	Percentage
≤5	7	28
6-10	12	48
≥11	6	24
	40	100

Source: Author 2019



Source: Author, 2019

From the above table and figure 4.2, about half of the respondents, 45% had between 6 to 10yrs of experience in material management activities. Those with less than 5yrs of experience accounted for 28% those with a decade of experience accounted for 34%

Table 1

4.2.4 Table 4.3 professional competences

Level	Frequency	Percentage
Secondary	6	24
Diploma	15	60
Bachelors	4	16
Masters	0	0
Total	40	100

Source: Author, 2019

Figure 4.3 Professional competences

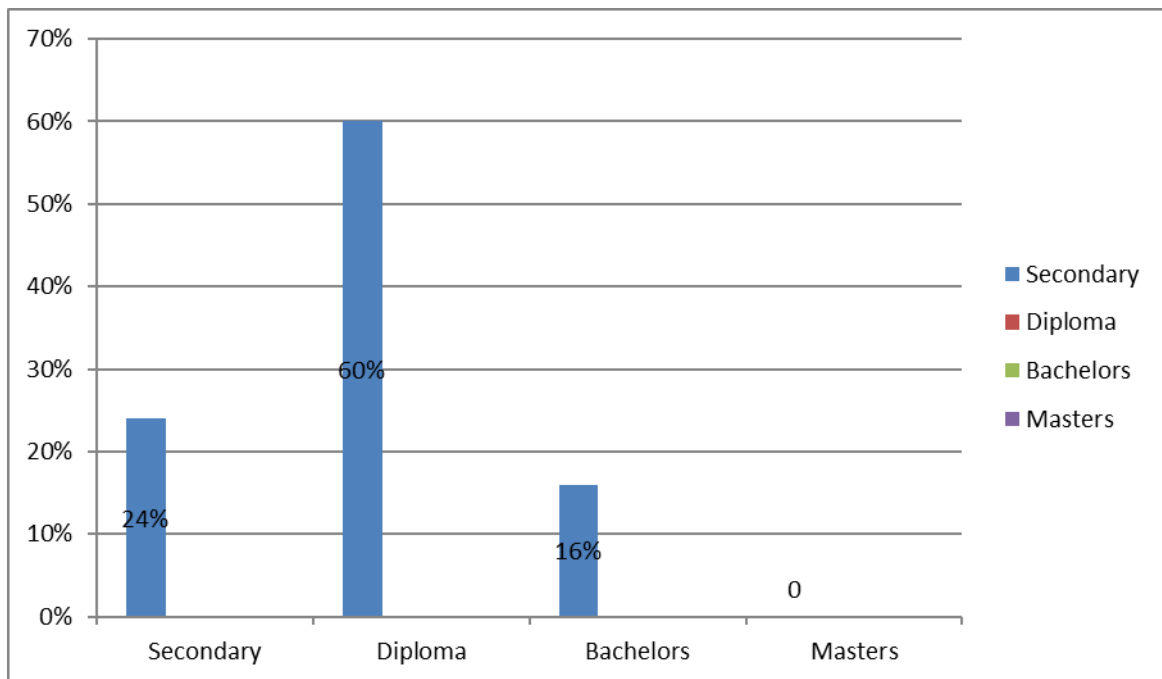


Figure 4.3: Professional Competence

Source: Author 2019

From the above table and figure 4.3, 60% of the respondents had college or Diploma qualification. Those with university education accounted for 16%, while those with secondary level of education were 34%

4.2.5 Full Knowledge about lead time.

Table 4.4 Full understanding of lead time

Response	Frequency	Percentage
Very knowledgeable	8	32
Fairly	12	48
Unfamiliar	5	20
Total	40	100

Source: Author 2019

Full understanding of lead time

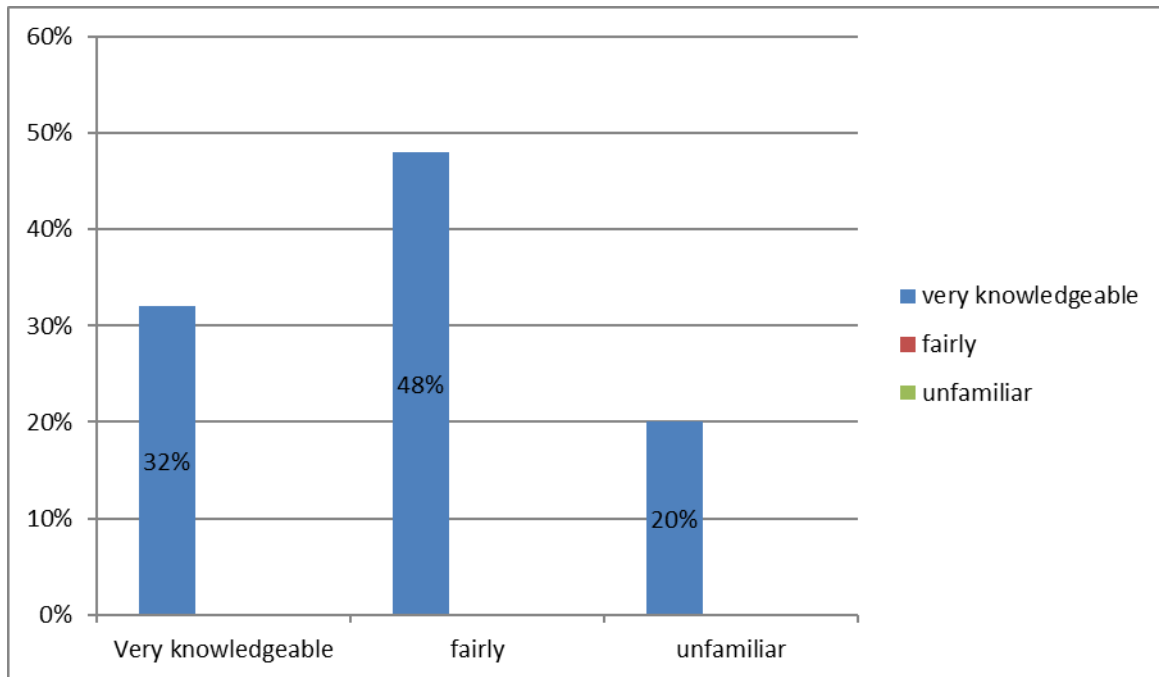


Figure: 4.4 Full understanding of lead time.

From the table 4.4 above 48% were only fairly conversant with the detail of lead time. Those who claimed to be fully knowledgeable comprised 32% which 20% admitted limited knowledge in this area.

4.2.6 Ratings of Economic Order Quantity on procurement of materials in KEMSA.

Table 4.5: Ratings of Economic Order Quantity on procurement of materials in KEMSA.

Ratings	Number indicated	Percentage
Excellent	20	40
Good	15	20
Fair	5	8
Total	40	100

Ratings of economic order quantity on procurement of materials in KEMSA

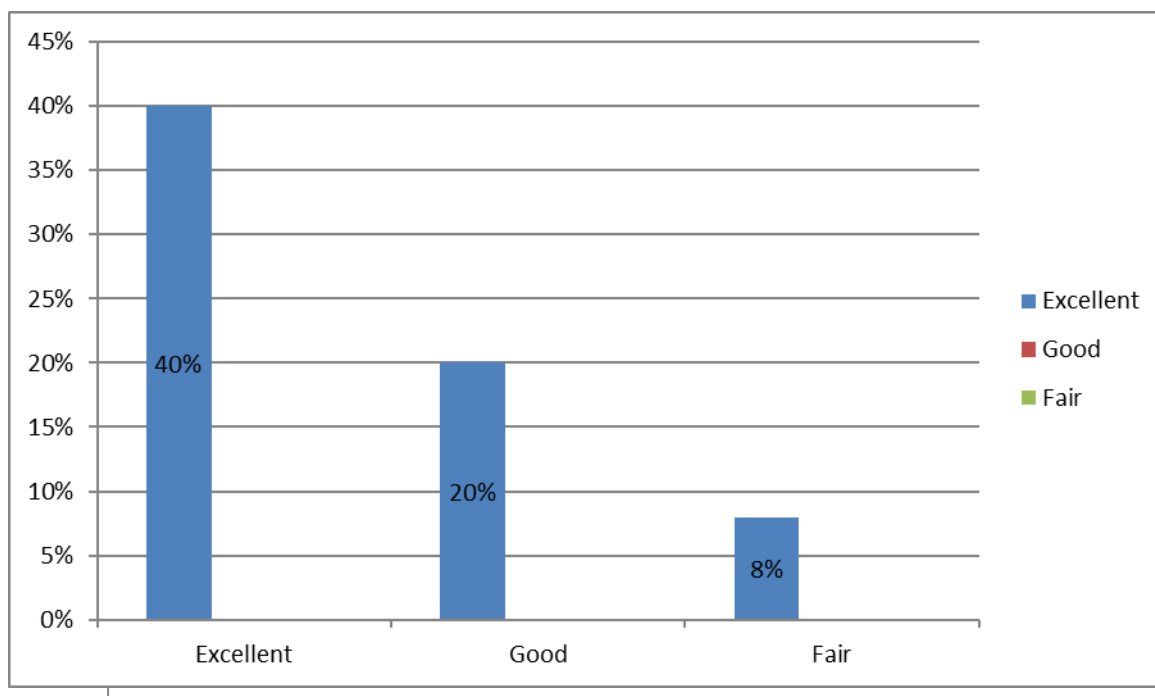


Figure 4.5: Ratings of Economic Order Quantity on procurement of materials in KEMSA.

Source: Author 2019

40% of the respondents said that the economic order quantity affects the procurement of materials as excellently. 32% said it affects as very good. 20% said that it affected procurement of materials as good, while the rest 8% said that it affected fairly

4.2.7 Effects of E.O.Q on procurement of materials in parastatals.

Table 4.6 Effects of E.O.Q on procurement of materials in parastatals.

Effects	Number indicated	Percentage
Very strongly	15	60
Strongly	25	40
No effect	0	0
Total	40	100

Source: author, 2019

Figure 4.6: Effects of E.O.Q on procurement of materials in parastatals.

Source: Author, 2019.

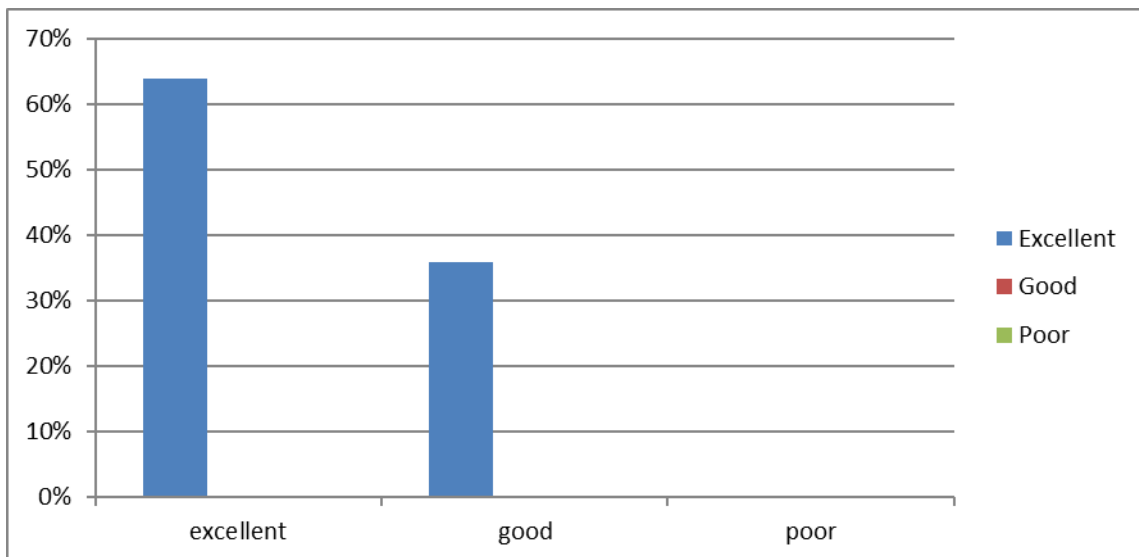
According to table and figure 4.5, 60% of the number said that Economic Order Quantity affects the procurement of materials in the organization very strongly. 40% of the number said Economic Order Quantity affects the procurement of materials strongly and none said it affects procurement of materials to no effect.

4.2.8 Ratings of material Requirement Planning on procurement of materials in KEMSA.

Ratings	Number indicated	Percentage
Excellent	25	64
Good	15	36
Poor	0	0
total	40	100

Source: Author, 2019

Figure 4.7 Ratings of material requirement planning on procurement of materials in KEMSA



Source: Author, 2019

64% of the respondents said that material requirement planning affects procurement of materials excellently. 36% said it affects goodly while none said it affected poorly.

4.2.9 Effect of material requirement planning on procurement of material requirement planning in parastatals.

Table 4.8: Effect of material requirement planning on procurement of material requirement planning in parastatals.

Effects	Numbers indicated	Percentage
Strongly agree	16	40
agree	12	30
No idea	8	20
disagree	4	10
Strongly disagree	0	0
Total	40	100

Source: Author, 2019

Effect of MRP on procurement of material requirement planning in parastatals

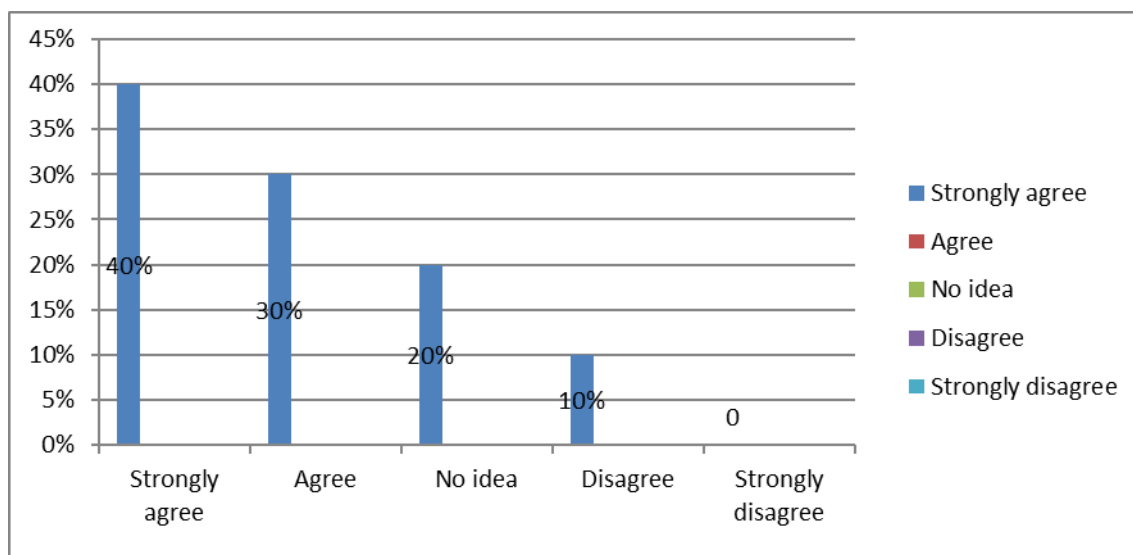


Figure 4.8: Effect of material requirement planning on procurement of

Material requirement planning in parastatals.

Source: author, 2019

According to **table and figure 4.8 above** 64% of the respondent admitted that material requirement planning influences the procurement of material as to so excellent while 36% claimed that it affect procurement of materials goodly while none else had objections.

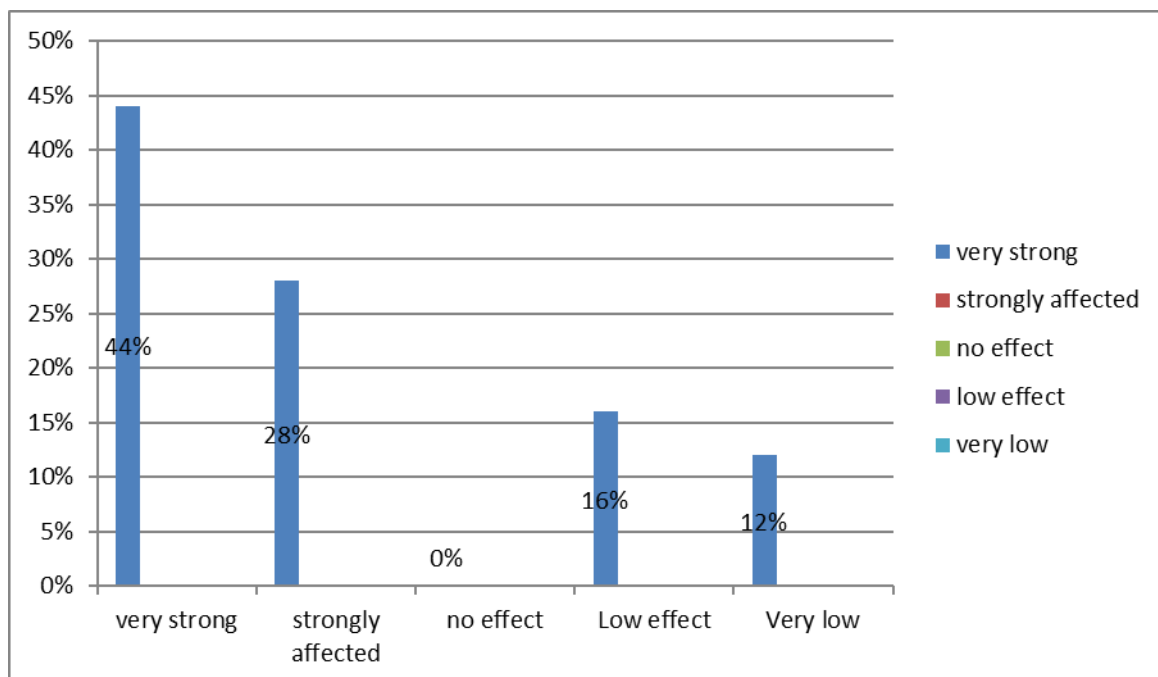
4.2.9 Ratings of Just-In-Time on procurement of materials in KEMSA

Table 4.9 Ratings of Just-In-Time on procurement of materials in KEMSA

Ratings	Number indicated	Percentage
Very strong	11	44
Strongly affected	7	28
No effect	0	0
Low effect	4	16
Very low	3	12
Total	40	100

Source: Author 2019

Figure 4.9 Ratings of Just-In-Time on procurement of materials in KEMSA.



Source: Author 2019

44% of the respondents said that Just-In-Time affect the procurement of materials very strongly. 28% said it affects as strongly 1% said that is affected procurement of materials as low as 12% said that it affected it very low

4.2.10 Effect of Just-In-Time on procurement of materials in parastatals.

Table 4.10 Effect of Just-In-Time on procurement of materials in parastatals.

Ratings	Number indicated	Percentage
Very strong	11	44
Strongly affected	8	32
No effect	0	0
Low effect	4	16
Very low	2	8
Total	40	100

Source: author, 2019

Effect of Just-In-Time on procurement of materials in parastatals.

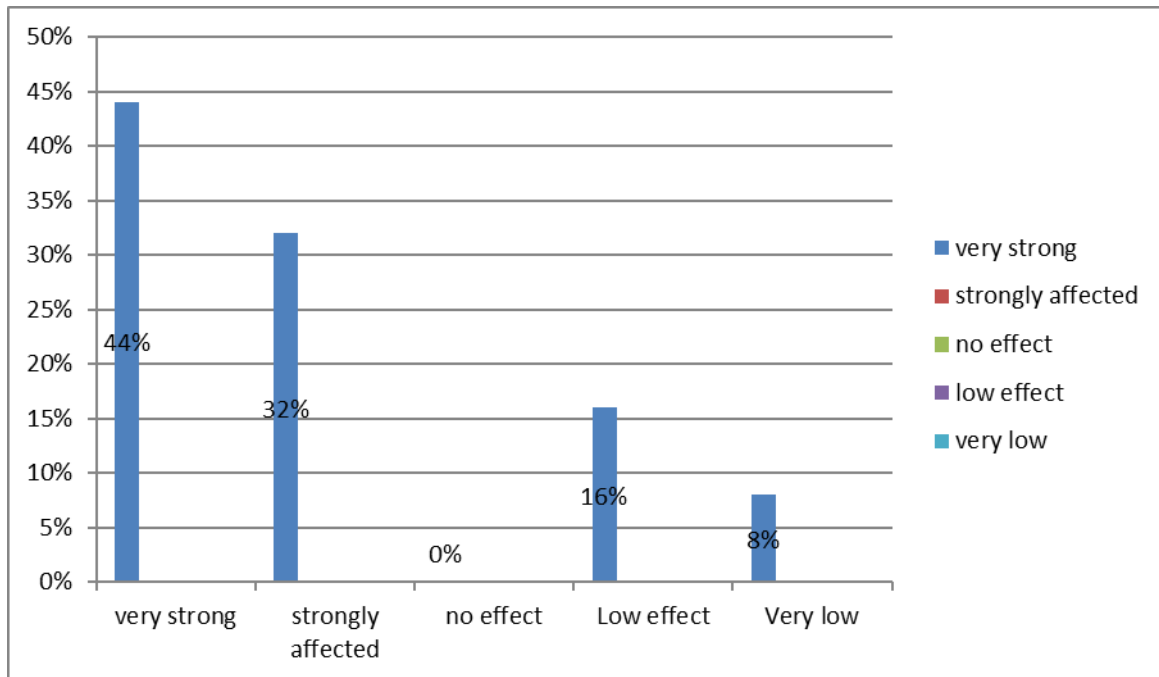


Figure 4.10 Effect of Just-In-Time on procurement of materials in parastatals.

Source: Author, 2019

According to table and figure 4.10 above 44% of the respondent admitted that Just-In-Time influences the procurement of materials as very strong. Another 32% claimed that it affected procurement of materials strongly 8% maintained that it affected procurement of material very lowly while the rest 16% of the respondents indicated that affected procurement of materials to a low extent.

CHAPTER FIVE

SUMMARY CONCLUSIONS AND RECOMMENDATION

5.1 Introduction

5.1.1 Summary of findings.

This chapter attempted to summarize findings from literature review and actual data analyses taken from the respondent.

The findings reveal that material control and management minimizes idle time taken by shortage of inventories as per requirements and also eliminates surpluses that causes financial hardships because they tie up capital and shortage that results in parastatals.

The researcher found that management did not follow all the procedure in material management because some did not have proper knowledge of the existence of lead time and content.

The researcher found out that although most of them were learned, they lack knowledge in the Just-in-time philosophy. This made them feel nagged since they did not have the technical knowledge.

The researcher found that economic order quantity was rated as having excellent effects on procurement of materials due to its stress at minimization of the total inventory holding cost and ordering cost. Material requirement planning had very positive and due to stress on minimization of set up cost and inventory cost.

5.2 Answers to Research Questions

In order to achieve the objectives of the set, study was guided by a series of research questions. The study realized the following questions;

5.2.1 How does economic order quantity influence procurement of materials at KEMSA?

The study's findings indicate that economic order quantity influence procurement of materials. Majority of the respondents felt that the management at the KEMSA, Nairobi needs to pull up its socks in this area.

5.2.2 How does material requirement planning affect procurement of materials at KEMSA?

Majority of the respondents felt that the material requirement planning affects the procurement of materials. According to the respondents, this makes the stakeholders build confidence on the procurement practices.

5.2.3 Does just in time services influence procurement of materials at KEMSA?

Just in time was indicated as very strongly affecting procurement of materials. The respondents indicated that more attention should be given to just in time. Most of the people's opinion was that this would enhance delivery and dispatch.

5.3 Conclusions

In conclusion the analysis shows that many organizations were affected very positively by economic order quantity in procurement of their material. Most of the respondent agreed that material requirement planning affects the procurement and performance of the organization positively and just in time philosophy.

The research concluded that economic order quantity had the greatest positive effects at the organization and least effects on procurement of materials while material requirement planning had the highest negative effects with the least positive on procurement of materials.

5.4 Recommendations

Since economic order quantity is major determinant of organization performance the organization should properly adopt and practice the system for excellent performance in procurement of materials in the organization. Material requirement planning should be educated to the procurement employee so as to have quick provision of materials and maintaining low inventory levels.

Just-In- Time philosophy should be implemented since it encompasses the successful execution of all manufacturing activities required to produce a final product in design engineering to procurement of final product including all stages of conversion from raw material onward.

5.5 Suggestions for further studies

Other areas of research can be undertaken by other researchers in this important and sensitive exercise. These areas include:

- i. Procurement procedures in organization in relation to organization performance.
- ii. Stock review system in relation to effective purchasing procedure.
- iii. Inventory control techniques in relation of performance in organization.

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APPENDIX I:

INTRODUCTION LETTER

RICHARD NYAGA WAKUTHII

P.O Box 3-0100

THIKA.

Cell phone: +254 (0) 714710950

Email: richardnyaga91@gmail .com

1ST Feb, 2019

The Procurement Officer

KEMSA

Nairobi

Dear Sir/madam

RE: PERMISSION TO COLLECT DATA FOR ACADEMIC RESEARCH

I am a student at Gretsia University Pursuing Bachelor of Commerce in Human Resource Management. Part of the requirement of the course is to undertake a research project within my area of study.

I humbly request to be allowed to conduct a study on factor influencing procurement of materials in your esteemed organization as a partial fulfillment of the award of the degree of bachelor of commerce in human resource management. The instruments that I will use for study will be questionnaires that will be distributed randomly to the staff and selected subscribers as well as one on one interview. Any information obtained in the course of the study will be solely used for academic purposes and will be treated as confidential.

Any effort by you to assist in this process will be highly appreciated.

Thank you in advance.

Yours sincerely,

Richard Nyaga Wakuthii

APPENDIX II
QUESTIONNAIRES

Please fill in the following questionnaire by answering all the questions given as instructed. All information will be treated in high confidence and shall only be used for the purposes of research. Please do not indicate your name anywhere in the questionnaire

SECTION A

Personal data

(Tick appropriately)

1. What is your gender?

a. Male

b. Female

2. What age bracket are you within

a. Below 30 years

b. 30-40 years

c. 40-50 years

d. Over 50 years

3. What is your level of education?

a. Primary

b. Secondary

c. Tertiary

d. University

4. Occupation _____

(specific) _____

5. How many years have you been in firm?

- a. 0-5 years
- b. 6-10 years
- c. 11-15 years
- d. 16-20 years
- e. Over 20 years

SECTION B

6. How do you rate the application of economic order quantity in your organization?

- Excellent
- Good
- Fair

7. How does EOQ affect the procurement of materials in your organization?

- Very strongly
- Strongly
- No effect

8. How does you rate the application of Material Requirement Planning in your organization?

- Excellent
- Good
- Poor

9. To what extent do you agree or disagree MRP affect the procurement of materials in your organizations?

- Strongly agree

Agree

No idea

Strongly disagree

Disagree

10. In your opinion how do you rate the application of Just In Time in your organization?

Excellent

Good

Poor

11. How does Just In Time affect the procurement of materials in your organizations?

Strongly affect

Affects

No effect

1.2 What is your understanding of the effect of procurement of materials in parastatals?
