EFFECTS OF INVENTORY LEVELS AND STOCK OUTS ON PROCUREMENT PERFORMANCE AT KENYA FORESTRY RESEARCH INSTITUTE

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ABSTRACT

The purpose of the study was to identify the effects of Inventory levels and stock outs on procurement performance at Kenya Forestry Research Institute. The study figured out on how to improve causes of stock outs and under stocking and realization of the laid down objectives. The data was collected using questionnaire administered to the relevant employees of procurement, stores, stock control and other user departments at Kenya Forestry Research Institute. Different questions were asked based on the objectives. The targeted population constituted the staff members of the procurement, stores, stock control and other user departments at Kenya Forestry Research Institute. The data collected was analyzed using tables, graphs, percentages and frequency. The data was later on processed after collection with major key findings and recommendations made at the end of the research study. The researcher of the study then came up with findings, conclusions and recommendations on how to overcome the effects of inventory levels and stock outs.

Keywords: *procurement, stock outs, under stocking, Inventory, procurement performance*

Introduction

An Inventory refers to a detailed list of all the items in stock in an enterprise or in an organization. Baily and Farmer (1998) defines inventory as a list of goods and materials held available in stock by a business or an organization Inventory levels refer to the stock level in place; either minimum stock level, maximum stock level or the re-order inventory level.

Lysons K. (2003) defines under stocking as a state of running out of inventory. The aspect of lead time is quite significant in regard to purchasing and supply. In most cases the purchasing division urges early requisition since it acts as a buffer from unexpected delivery and delay in lead time. The importance of stock in an organization or institute is to provide both internal and external customers with the required services in level of terms of quality and order rate fill. It also creates customers goodwill because of the ability to supply and also to avoid stock outs which are difficult to estimate. It also enables acquiring of stock at the right place and the right time.

There is an incidence of availability required for an item to be set. Market conditions for example political, financial and other considerations that will determine whether requirements shall be purchased on "hand – to – mouth" or "forward" basis.

The risk of running out of stock is created by variations in usage time, late deliveries delay of purchases requisition from user department.

Aristopher (1998) states that the achievement of delivery on time is standard. If any stock is delivered late this would hinder the work of the departments in the institutes and the work will not run smoothly as required. Stock out will lead to loss of customer goodwill because of the ability to supply or late deliveries, often costs of stock outs are hidden in overhead cost. Stock out would result in great expenses through production delays for example in Kenya forestry research institute. Where the cost of stock out are computed these should be expressed in annual figures to ensure compatibility with acquisition and holding costs. Costs of stock outs are difficult to estimate or incorporate into inventory models. Lastly stock outs may lead to stoppage of work or slow down production process in the production and user departments.

Problem Statement

Government Institutes for a long time have not been able to provide the required materials and services to its customers thereby affecting the performance due to lack of the required materials and services. According to Lysons K. (2003) inventory control refers to techniques used to ensure that stocks of raw materials or other supplies work in progress and finished goods are kept at levels, which provide max service level at minimum cost. The procurement department at Kenya forestry research institute is

responsible of providing the necessary goods and services to all the members of the public and individuals by keeping the stock levels at most economical costs possible.
There has been an outcry from the members of the public that government institutions do not meet the stipulated customer service levels. The effectiveness of stock control is directly measurable by how successful an organization is providing services to its customer. There have been a lot of difficulties in determining the desired stock levels that ensures a free flow of materials without incurring heavy expenses in stocking those materials and without any stock being rendered obsolete.

There is some evidence of suppliers who cannot meet delivery schedules and thus cause delivery uncertainty. The procurement department at Kenya forestry research institute often provides the supplier with short notices of delivery hence causing uncertainty and affecting the quality of materials to be delivered. This shows that the procurement department has not determined its maximum, minimum and re-orders levels, which is the major determinant of stock control within a procuring sector of the economy.

Stock outs and under stocking has led to the user departments buying materials and services they require by use of imprest which according to PPDA 2005 is not a recommended way of procurement in government institutions. The study therefore intends to establish the effects of inventory levels and stock outs at Kenya Forestry Research Institute.

Literature Review

Baily and Farmer (1998) argue that every organization or institute holds inventory. They state that inventory can be a nuisance, a necessity, or a convenience, organizations such as manufacturers, health care institutions and other service providers place stock in a subsidiary rather than a central position but it is still important element in operational effectiveness and often appears on the balance sheet as the biggest of current assets locking up a lot money.

Baily and Farmer (1998) observes that institutions control the inventory levels due to the convenience of having things available as and when required without making special arrangements. Another reason is Cost reduction through purchase or production of optimum quantities protection against the effects of forecast error and inaccurate records.

Lastly Mistakes in planning and Provision for fluctuations in sales or production so as to cater for any emergency orders.

Jessop and Morrison (1994) argue that user's desire is for immediate availability of all materials, stores and spares which may be required under any circumstances with no risk whatever of failure of supply. From an operational point of view the efficiency of the stores department is judged by whether material is forthcoming or not when it is required, in event of a "stock out" (i.e. no stock available in store) the consequences may be very serious. Failure to supply some stores may result merely in an irritating delay but if there is a run-out of vital production material the whole of a production line may be stopped and a great expense incurred.

Lysons (1996) states that cost of stock outs are hidden in overhead costs where the costs of individual stock outs are computed these should be expressed in annual figures to ensure compatibility with acquisition and holding costs. Costs of stock outs are difficult to estimate or incorporate into inventory models.

Saleemi (1997) observes that stock out means the non availability of the stocks, the consequences of which are serious and may result in break down of production operation or delaying the operation. In both the cases the loss to the production department is inevitable. The loss may be multi sided i.e. the loss of machine and man hours the loss of service to customers the loss of goodwill the loss of lagging behind in competition the loss through losing profit and incurring losses.

Saleemi (1997) continues to say that stock outs will increase the inventory carrying costs besides there are certain losses which are intangible but when taken into account may form a major part of the stock out costs.

Problems of inventory management

Stored material acts as a buffer between the demands of production activities and purchasing or between stages of production. Supplies cannot always be purchased or produced as needed; lead time is a normal delay in receiving purchased goods, and set up times are frequently required to get facilities ready to produce a desired item. Although a sense of maintaining an inventory of supplies is apparent, it is not obvious how much it will cost if supplies are not available when needed, or which procedures to follow for recording, checking and issuing material. (Production Systems by James L. Riggs)

Inventory, in a production context, is an idle resource. The resource can be animate or inanimate. Most commonly it is production material: tools, purchased parts, raw materials office supplies, products in process and so forth. The resource serves as an insurance policy against unexpected breakdowns, delays and other disturbances that would disrupt ongoing production. Insurance is not free. The idle resource can be damaged or become obsolete before it serves any purpose. The task is again to secure and economic balance between the cost of loss and the cost of preventing it. (Production Systems by James L. Riggs)

The most important function of inventories is insulation. A reserve of material can be tapped whenever a delay in a preceding stage threatens to curtail operations in the following stage. Material buffers are used to cushion the production process from the uncertainty of material deliveries, to decouple progressive stages of product development from disruption in earlier stages and provides a steady supply of finished output for the unsteady demands of customers.

Lysons and Gillinham (2003) states that materials management is concerned with the flow of materials to and from production or manufacturing and has been defined as: the planning organization and control of all aspects of inventory embracing procurement warehousing work in progress and distribution of finished goods.

Fearon (1997) describe the concept of materials management (MM) as follows: an organization that has adopted the materials management organizational concept will have a single manager responsible for planning organizing motivating and controlling all activities principally concerned with the flow of materials into an organization materials management views materials flows as a system.

They also state that the specific functions that might be included under the materials manager are material planning and control, production scheduling, material and purchasing research, purchasing incoming traffic inventory control receiving incoming quality control stores in-plant materials movement and scrap and surplus disposal.

Lysons (2003) states that materials management is concerned with the flow of goods from receipt of an order until the goods are delivered to customers. It is concerned with the input phase of moving bought out items such as raw materials and components from suppliers to production. It also relates to the output phase of moving finished goods from production department to finished goods stores and through the appropriate channels of distribution to ultimate consumers.

Developments such as just in time (JIT) where both producers and distributors carry only few hours' stock and rely on their suppliers to meet their production or sale requirement have greatly enhanced the importance of material flow.

According to Lysons (2003) the three aims of inventory management are:

To provide both internal and external customers with the required service levels in terms of quantity and order rate fill. To ascertain present and future requirements of all types of inventory to avoid both overstocking and bottlenecks in production. To keep costs to a minimum by variety reduction economical lot sizes and analysis of costs incurred in obtaining and carrying inventories.

Staff competences

Saleemi (1997) observes that purchasing personnel consist of purchasing manager, assistant purchasing managers, receiving officers, inspection officers, procurement officer, supplies officer, and clerical staff and so on. He says that the management of purchasing personnel is concerned with the acquisition, development and maintenance of an efficient and satisfied team of executives in a purchasing department.

Today the human factor is considered to be the most important resource because the effective utilization of other resources depends upon the managerial personnel of an organization. Lysons and Gillingham (2003) state that professionalism may be provisionally regarded as the expertise, commitment, responsibility and ethics demonstrated by purchasing and supplies management personnel. The more purchasing and supplies management staff is perceived both by top management and colleagues to demonstrate such attributes, the greater will be the status ascribed to them.

Lysons and Gillingham (2003) states that the establishment of institutions concerned with promoting the concept of 'professional' purchasing, such institutions include the chartered institute of purchasing and supply (CIPS) in Great Britain and the institute of supply management in the USA.

Baily and Farmer (1998), state that, since it is difficult to make silk purses out of cow's ears it makes great sense to attempt to recruit good people in the first place. So, what kind of people should a purchasing manager is looking for? A particular business environment may suggest specific requirements.

A piece of research by Reck (1978) considered the question of what differentiates more effective from less effective purchasers? He concentrated on personality and socio-economic factors. Among other things the study concluded that effective purchases tend to have a more positive self image. A second finding was that the purchaser tends to have a superior ability to communicate with others. A third finding was that the effective purchaser tends to have superior ability to use interpersonal skills, among areas cited in this respect was departmental co-ordination, negotiation and inter-firm co-ordination.

Finally Reck (1978) found that more effective purchasers tended to be more interested in developing themselves personally.

Baily & Former (1998) stated that having selected the right people and established a helpful environment, systems & organization, it is important to ensure that purchasing staff are well trained.

Purchasing procedures

Morrison and Jessop (1991) states purchasing procedures as the responsibility of the source, receipt, custody and distribution of very large sums of money in form of stocks and for determination of appropriate quantities of materials to be held in order that operational needs may be managed and operated in highly efficient way.

Baily and Farmer (1998) observes that to have procedures which consist of the integration of purchasing, inventory management and warehousing activities to provide cost reduction measures and effective means of meeting the requirements, the task is to provide what is required when it is required and the condition in which it is required.

Lammimg (1999) observes that the primary function of purchasing procedures as to obtain materials of the right quantity in the right quality from the right source delivered to the right place and at the right time. Other duties involve forming company organization and should provide information on any new products process material and service and be able to advice on probable prices deliveries and performance of items under consideration.

Lysons and Gillingham (2003) saw purchasing procedures as a system of sub sequential steps of techniques describing how a task or a job is done. They are also formal arrangements through which policies linking strategy formation at all levels are implemented.

Inventory level control

Jessop and Morrison (1998) defined stock control as the operation of continuously arranging flows of materials so that stock balances are adequate to support current rate of consumption with due regard to economy.

Saleemi (1990) observed that material control is of great importance in any business organization. He says that material control means making sure that business has the right quantity of goods in the right place and at the right time. He also says that inventory levels should neither be kept too high or too low and hence the need to re-order when the inventory reaches the re-order level.

Lysons and Gillingham (2003) observes that inventory (or stock) control refers to techniques used to ensure that stocks of raw materials or other supplies work in progress and finished goods are kept at levels which provide maximum service levels at minimum costs.

Baily and Farmer (1998) observes that a continuing drive to reduce stock without reducing service is needed to combat the natural tendency of stock to increase. Constructive approaches to stock include the following:

Arranging for things to be delivered just in time instead of stock piling just in case a need arises. Devising ways to reduce ordering costs set-up costs and lead times so that optimum quantities are smaller. Making forecasts more accurate ensuring that records are right and better planning.

The author further observed that the two common measures of stock control performance are service level and stock turn rate. Service level measures success in meeting demand off the shelf. Stock turn measures not the effectiveness of stock control in meeting demand but its efficiency in doing so economically. It relates the amount of money invested in stock to the use that is made of it, achieving a high service level by amps of everything that could be achieved by hardly stocking anything except the essential very frequently used items – with of course a low service level as a result.

Stock turn rate is calculated by dividing average stock for a period of time into total usage for the same period. Individual item is down to a quantity called reorder level (or order level or order point) an order is initiated to obtain more stock.

Methodology

The researcher used a case study to carry out the research to provide an understanding on the effects of inventory levels and stock outs on procurement performance at Kenya Forestry Research Institute. The study employed both qualitative and quantitative approaches. The population of the study included the procurement division at Kenya forestry research institute made up of 100 members of staff. The key instruments for the data collection were semi structured questionnaire which were be based on simple and understandable questions in order to obtain a reliable accurate and perhaps updated data.

For the qualitative analysis, the data received from the open ended questions was coded then analysed using content analysis. Data analysis was accomplished using statistical package for social scientists (SPSS) computer software.

Conclusions

The study found out that at Kenya Forestry Research Institute (KEFRI) the staff working in supplies department are not well trained and this in some ways leads to under stocking and stock outs of materials required by user departments.According to the study it showed that, long procurement procedures and long head times are major causes of stock outs and under stocking at Kenya forestry Research Institute (KEFRI) and therefore there is an alarming demand to review them so as to give fair view of roles and execution of duties . Also the study shows that there is conflict of interest in exception duties by the finance and supplies leading to conflicting orders from finance section hence bringing confusion and consequently results to stock

Respondents drawn from user department felt that the old methods of sourcing supplies and inexperienced staff in the line of purchasing lead to stock outs and under stocking.

They felt that if the organization recruits trained staff in areas of purchasing and supplies could improve the efficiency of the work in the organization.

The long procurement procedures and long lead times are also major causes of stock outs and under stocking in Kenya Forestry Research Institute (KEFRI).

Procurement staff who are not well trained may cause frustrations to suppliers as they are not able to prepare their documents on time to enable them get paid by the accounts department, because of delayed payments suppliers may delay delivery insisting on payment on delivery.

Ordering of goods in small quantities is another cause of under stocking and stock outs this is done deliberately by the supplies staff so that they can create a shortage of materials required which will result in imprest buying.

Imprest as a method of buying is not recommended by government because the staffs buy materials at exorbitant prices as compared to other methods of buying recommended by government. Imprest buying is one way in which supplies staff gets money dishonestly from the organization in the pretence that they are going to buy materials but at the end they buy low quality materials at exorbitant prices.

The study also concluded that staff motivation is lacking which makes the staff not to be concerned about stock outs and under stocking. The system of motivating staff is not very effective according to most respondents.

The study also concluded that the long procurement procedures introduced by government are major causes of stock outs and under stocking this is because before an item is bought takes time due to the many stages that the procurement documents must go through.

These procedures are very long and bureaucratic such that a document must for example a Local purchase order must be signed by so many people before it reaches a supplier making the process unnecessarily long and tedious.

Respondents from procurement said that the leads times are too long because suppliers take their time before delivering arguing that the organization also delay in paying them so to improve on the long lead times the organization should pay the suppliers on time.

Recommendations

The following are the recommendations made from the research study.
Personnel in supplies department should be professionally qualified to ensure competency in procurement, supplies, and management of materials.

The supplies department should employ techniques of managing stock and control of materials so as to realize value of money spent as well as reducing money spent on material ordering,

There should be refreshers training of all procurement and supplies staff.

Reduction of procurement process, this can be done by reviewing the current procurement manual and implementing the procurement Act 2005.

There should be employment of qualified staff in the procurement and supplies department. To decentralize some services which do not require long ordering procedure and which could be handled by the immediate department.

The procurement procedures should be reviewed with a view of shortening them.

There should be set codes that govern the conduct of officers in supplies department rules and regulations that govern staff should be put in place.

The suppliers should be paid in time to avoid them delaying in supplying of goods and services.

The institute should adopt E- procurement or E- Auction that is buying on line

It is highly recommended that the organization employ the use of the latest information technologies for example the use of electronic data interchange to communicate with suppliers.

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