



**INFLUENCE OF INVENTORY MANAGEMENT PRACTICES ON PERFORMANCE OF COMMERCIAL STATE CORPORATIONS IN KENYA: A CASE OF KENYA ELECTRICITY GENERATING COMPANY**

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**ABSTRACT**

*The purpose of the study was to examine the influence of inventory management practices on performance of commercial state corporations in Kenya. It was notable that there exist strong positive relationship between the independent variables and dependent variable as shown by R value of 0.792. The coefficient of determination ( $R^2$ ) explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable and the four independent variables that were studied explain 62.70% of the performance in the commercial state corporation. This therefore means that other factors not studied in this research contribute 37.30% of the performance in commercial State Corporation. This implied that these variables were very significant therefore need to be considered in any effort to boost performance of the commercial State Corporations in the study area. The study therefore identified the variables as critical inventory management practices that influence performance of the commercial state corporations in Kenya. The study recommended for the better management of inventories would release capital for use elsewhere productively. Hence Inventory control implied the coordination of materials accessibility, controlling, utilization and procuring of material. The inventory control includes cost minimization, profit maximization, avoidance of running out of stock and to prevent surplus stock that are unnecessary. Process auditing is important for the source error identification and should be done often. Process auditing should take place at every transactional step from receiving and to shipping inventory including all the inventory transactions that takes place in between the processes. It is necessary to allocate warehouse resources efficiently and effectively to enhance the productivity and reduce the operation costs of the warehouse. There should be proper storage locations for easy order and material handling. There is need for selecting appropriate storage assignment policies and routing methods with regards as a possible solution to improve the efficiency.*

**Key Words:** Inventory Control, Process Auditing, Inventory Investment, Warehouse Management, Performance

## INTRODUCTION

Increasing focus on global expansion in the marketplace has fostered greater attention on streamlining the supply chain management functions of business. The issue of sustainability in inventory management is gaining attention in both academic literature and industry practice as an area of opportunity. Companies and public sector across geographical and industry boundaries are implementing sustainability initiatives in the inventory management in response to pressures from customers, regions of operation, investors and even employees (Melnyk, Davis, Speakman & Sandor, 2010).

Inventory management has been variously defined as an attempt to balance between costs of inventory and customer satisfaction. Wild (2012) can inventory management as an activity which organizes the availability of items to customers. Through coordination of purchasing, manufacturing and distribution function. Leenders and Flynn (2011) saw inventory management as involving managing the flow of information and establishing operational design of the physical flow of goods and services. Lysons and Farrington (2006) write that inventory control is an important element in supply chain optimization.

Worldwide the situation has not been different as the state corporations have continued to face inventory management challenges. Based on the premise that inventory management is an important factor in service delivery, customer satisfaction and improved performance. Further, organizations, whether large or small, public or private, local or global are in one way or another concerned about inventory management; It has been the attempt of most organizations striving to achieve optimal inventory control while minimizing inventory costs (Swaleh & Were, 2014) .

Many organizations in the private and public sector use inventory control not only to ensure materials and products timely availability but also to ensure superior customer service and to achieve competitive advantage. While many organizations use internal inventory practices as a way to achieve organizational objectives such as enhanced efficiency and improved procurement operations, adoption of effective internal inventory control practices have been a challenge to many( Onchoke & Wanyoike, 2016). In recent years, a number of organizations have faced numerous challenges especially in inventory management or material control, thus affecting the performance of companies. There have been cases of materials overstocking which eventually get expired or out dated, under stocking, lack of stock-taking, theft of materials by workers and delays in deliveries of materials into the organizations among others. Over the years, companies all over the world had adopted the concept of inventory management as a way of improving their supply chain performance. In America, inventory contributes to almost sixty percent 60% of the annual turnover in the manufacturing firms (Seungjae, Ennis & Spurlin, 2015). This shows clearly that a lot of concern should be given to inventory management to avoid unnecessary costs. Actually any function of the firm which accounts for well over half of its receipts certainly deserves a great deal of managerial attention.

In Nigeria, Augustine and Agu (2013) found that irrespective of the fact that most organizations in Nigeria attempt to apply the tenets of good inventory management, they from time to time run into the problems of inventory inadequacy. This consequently affects their production, leading to the scarcity of one brand of their products or the other, thereby affecting their profitability and consequential effectiveness negatively. Inventory management has a significant effect on organizational effectiveness, productivity and

profitability. In addition, the entire profitability of an organization is tied to the volume of products sold which has a direct relationship with the quality of the product.

A study conducted by Swaleh and Were (2014) on factors affecting effective implementation of inventory management systems in the Public Sector of Kenya revealed that to Kenyan organizations, the main aim of inventory control is holding the right quantity of inventory and containing inventory costs minimum. Study revealed that organizations are increasingly developing inventory control systems and adopting inventory control practices that can resolve the challenges currently faced in inventory management. Most of the organizations in Kenya use inventory control systems as a competitive tool and to improve financial performance (Nyabwanga, 2012).

State corporations in Kenya have gone under a lot of reforms through government task forces and session papers to make them more efficient, effective in the performance of their mandate and to reduce the financial burden of the corporations on the public coffers. A lot of effort has gone in trying to make these corporations not only self-reliant but to make sure they can fund the government through the residual surplus after covering their costs of operations from the revenue they earn. Effective and functioning corporate governance is at the core in ensuring this is achieved as this would be to the benefit of the whole country as it moves towards the achievement of Vision 2030 (SCAC, 2010).

A Commercial state corporation is a statutory entity created by the government to conduct commercial activities on behalf of the government. It is also referred to as a parastatal or state business because it is the part of the economy that is entirely controlled by the government for the purpose of

providing essential government services. Kenya has one hundred and twenty two parastatals that are categorized according to their functions that is regulatory, service, and commercial and manufacturing, and so on. According to the act of Parliament, State Corporations Act Cap 446, established to aid in the creation, regulation and connection of state corporations. Section 3 of the President act, the president, can through the order, creates an organization state mandated for the performance of roles specified in that act. He then assigns ministerial responsibility for any the corporation and all issues that relate to it directly to the Deputy-President and other cabinet secretaries. In section 5 of the same act, every state enterprise shall be empowered by the existing authority to enable it to perform its functions. State Corporations Act (2010). Moreover, the constitution created State Corporations Advisory Committee (SCAC) that was given the mandate to provide advice to the government on matters pertaining general administration of State Corporations as clearly spelled out in section 27 of the Act. ([www.scac.go.ke](http://www.scac.go.ke)).

Kenya Electricity Generating Company or simply KenGen is a state-owned company in Kenya with an installed capacity of 1,631MW and is the leading power producer in the Eastern African region. The Company commands market share of about 69% and generated 74% of national energy consumption in the financial year ended 30 June, 2017 (Integrated annual report & financial statements for the year ended 30 June, 2017). The other 31% is produced by independent power producers (IPPS). KenGen produces 50% of the power from hydroelectric power plants, Geothermal 32%, Thermal 16% and Wind 2%. Increased industrialization has seen Kenya's power demand hit 1,620 MW. The break demand is estimated to grow 72 per cent to 2,259 megawatts by 2020 and 5000+MW in 2030.

## Statement of the Problem

Commercial State corporations in Kenya have performed poorly compared to their private counterparts. The problem of poor performance of commercial Parastatals represents a drain on the exchequer and also results into non delivery on intended services. This has a negative implication on the welfare of Kenyan Citizens and may also imply that Vision 2030 is not met. The Presidential Task Force on Parastatal Reforms (PTPR) of 2013 identified 17 commercial state corporations that made losses in the Financial year 2011/12 compared to twelve in 2010/11 and sixteen in 2009/10 (PTPR, 2013). This represents 24%, 27% and 35% respectively of all commercial oriented state corporations. The pattern of stock of publicly guaranteed debt to State Corporations in Kenya shows a decline in 2015 from 2016, but has been on an upward trend since then. The increase in this stock of debt is largely attributed poor inventory management practices in the state corporations (Mukunga & Karanja, 2017). According to Dimitrios (2008) inventory management practices have come to be recognized as a vital problem area in the public sector needing top priority. Inventory management practices thus deserve utmost attention (Rajeev, 2010).

According to Score (2014), inventory control accounts for 45% to 90% of total commercial state corporations expenses. The productivity of commercial state corporations was quite low in 2016 while at the same time they continued to absorb excessive portion of the budget, becoming a principal cause of long term inventory management related problems. Commercial state corporations' operations had become inefficient and non-profitable, partly due to the government to shoulder major inventory management burdens (McCrudden, 2014).

Inventory management is a key facet of effective and efficient supply chain management at KenGen, as stocks form a large category of assets in the company's balance sheet. Inventory accounts for a high percentage of the company's invested capital and is currently standing at approximately Kenya Shillings 4.9 Billion (GoK, 2016). Kengen has been experiencing challenges affecting its performance due to inventory related challenges such as overstocking, under stocking affecting sustainable production of electricity leading to penalties and loss of revenue collection. In the financial year 2013/14, the company's procurement budget on plant and machinery was 2.4 Billion Kenya shillings. Machine spares and GRD materials account for 4.3 Billion of the total inventory held by the company. Approximately KSh. 1,438,710,188.00 worth of spares was imported towards the end of the same financial year. The same year consignments cleared at the port attracted demurrage in the value of KSh. 4,632,933.74. This is less total demurrage for the bulk of imports from projects and GRD materials due to the exemption applications processes. The above bring forth several consequences to the company which plays key role in bringing down the operational excellence and ultimately revenues of the company. They include; loss in revenue, high stock holding costs, concentration on transactional instead of strategic initiatives and increased costs associated with working capital.

Various studies have been conducted on inventory management in the state corporations in Kenya (Lwiki et al., 2013; Oballah, Waiganjo & Wachiuri, 2015; Karanja & Mukunga, 2017; Lwamba, Bwisa & Sakwa, 2014; Mokaya, 2012; Mayaka, 2006; Ongore & K'Obonyo, 2011; Miring'u & Muoria, 2011; Mang'unyi, 2011) have been conducted on factors that influence performance of enterprises; however, they fail to address commercial state corporations. that lead to good performance of the

enterprises and specifically commercial state corporations. From afore mentioned studies, none has tackled the issue of inventory management practices and performance of the commercial state corporations in Kenya It is against this background that the study sought to examine the influence of inventory management practices on performance of the commercial state corporations in Kenya with a specific reference to Kengen.

### **Objectives of the Study**

The general objective was to examine the influence of inventory management practices on performance of the commercial state corporations in Kenya. The specific objectives were:-

- To examine the influence of inventory control on performance of the commercial state corporations in Kenya
- To determine the influence of process auditing on performance of the commercial state corporations in Kenya
- To establish the influence of inventory investment on performance of the commercial state corporations in Kenya
- To assess the influence of warehouse management on performance of the commercial state corporations in Kenya

## **LITERATURE REVIEW**

### **Theoretical Review**

#### **Stochastic Inventory Theory**

This theory relates to the inventory control on the service delivery in the public sector in Kenya. In 1958, Stanford University Press published *Studies in the Mathematical Theory of Inventory and Production* (edited by Kenneth J. Arrow, Samuel Karlin, and Herbert Scarf), which became the pioneering road map for the next forty years of research in this area. One of the outgrowths of this research was development of the field of supply-

chain management, which deals with the ways organizations can achieve competitive advantage by coordinating the activities involved in creating products — including designing, procuring, transforming, moving, storing, selling, providing after-sales service, and recycling.

According to Odadi (2012) for most order quantity/reorder point inventory systems, the stochastic model, which specifies the demands as stochastic processes, is often more accurate than its deterministic counterpart the EOQ model. However, the application of the stochastic model has been limited because of the absence of insightful analytical results on the model. This paper analyzes the stochastic order quantity reorder point model in comparison with a corresponding deterministic EOQ model. Based on simple optimality conditions for the control variables derived in the paper, a sensitivity analysis is carried out, and a number of basic qualitative properties are established for the optimal control parameters.

The main results include the following: in contrast to the deterministic EOQ model, the controllable costs of the stochastic model due to selection of the order quantity (assuming the reorder point is chosen optimally for every order quantity) are actually smaller, while the total costs are clearly larger; the optimal order quantity is larger, but the difference is relatively small when the quantity is large; the cost performance is even less sensitive to choices of the order quantity; the relative increase of the costs incurred by using the quantity determined by the EOQ instead of the optimal from the stochastic model is no more than 1/8, and vanishes when the ordering costs are significant relative to other costs (Padget, 2016).

#### **Just In Time (JIT) Model**

This model relates to the inventory investment on service delivery.. JIT is a Japanese management

philosophy which has been applied in practice since the early 1970s in many Japanese manufacturing organizations. It was first developed and perfected within the Toyota manufacturing plants by Taiichi Ohno as a means of meeting consumer demands with minimum delays. Taiichi Ohno is frequently referred to as the father of JIT. Toyota was able to meet the increasing challenges for survival through an approach that focused on people, plants and systems. Toyota realized that JIT would only be successful if every individual within the organization was involved and committed to it, if the plant and processes were arranged for maximum output and efficiency, and if quality and production programs were scheduled to meet demands exactly (Yin, 2014)

JIT manufacturing has the capacity, when properly adapted to the organization, to strengthen the organization's competitiveness in the marketplace substantially by reducing wastes and improving product quality and efficiency of production. When first developed in Japan in the 1970s, the idea of just-in-time (JIT) marked a radical new approach to the manufacturing process. It cut waste by supplying parts only as and when the process required them. The old system became known (by contrast) as just-in-case; inventory was held for every possible eventuality, just in case it came about. This is an inventory management systems method whose goal is to maintain just enough material in just the right place at just the right time to make first the right amount of the product (Lewin, 2012). This was pioneered by the Japanese manufacturing firms where inventory is acquired only when required in business for production process and this aimed at improving the return on investment of the business by reducing in-process inventory and its associated costs (Leonard, 2000). In this system, the supplier has the responsibility of delivering the components and part to the production line "Just in Time" to be assembled.

Other names for just in time system is Zero stock inventory and production. For the just in time method to work successfully the quality of the parts must be very high because defective materials could up halt the operations of the assembly line, there must be dependable relationships and smooth co-operation with suppliers, ideally this implies that the supplier should be located near to the company with dependable transportation available (Hendrick & Signhal, 2005).

Just in time inventory management systems system helps in reducing inventory costs by avoiding carriages of excess inventories and mishandling of raw materials. According to Lewin (2012), Just in time purchasing recognizes high costs associated with holding high inventory level and as such it has become important in most organizations to order inventory just in time for production so as to cut costs of holding inventory like storage, lighting, heating, security, insurance and staffing (Lewin, 2012)).

### **Transaction Cost Theory (TCT)**

Transaction Cost Theory was first developed by Ronald Coase in 1937. TCT states that a firm's ownership decision is based on minimizing the sum of its transaction and production costs. Transaction costs occur in the exchange between client and vendor. Williamson (1994) also asserts that transaction costs are comprised of the costs of seeking the suppliers, inspection of goods and establishing and formalizing the terms of agreement, including the means to both guarantee compliance with the terms and protect against the potential expropriation of the investments made, to ensure that contract conditions are fulfilled. These aspects form the pillar to successful outsourcing from third party providers given the delivery by each party to the relationship.

According to Espino-Rodriguez and Gil-Padilla (2006) the greater the transaction costs, that is, the costs of information, negotiation and supervision of compliance entail, the less the tendency to outsource the activity. The primary factors producing transactional difficulties include: bounded rationality; opportunism; small numbers bargaining; information impactedness (McIvor, 2003). This theory implies that firms should consider cost implications of outsourcing initiatives for appropriateness. Management should outsource if the cost of doing the process is expensive than can be done by a service provider. According to the transaction cost theory, firms do exist to maximize profit by reducing their transaction costs; outsourcing to third party logistics service providers helps to minimize a firm's costs because as they grow in their capability they offer services at lower costs to their clients (Bolumole *et al.*, 2007). It is generally accepted that transaction cost analysis is useful for assessing and taking a decision concerning outsourcing in logistics (Andersson, 1997).

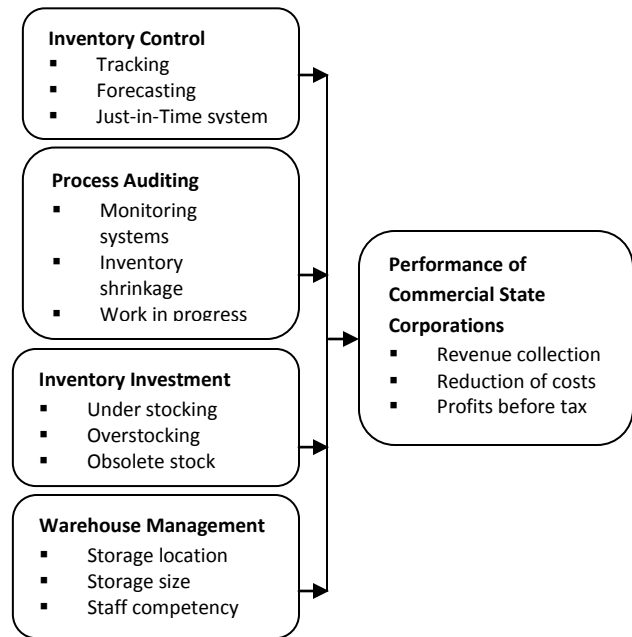
### Queuing Theory

According to Sundarapandian (2009), queuing theory is a mathematical study of waiting lines or queues. The theory enables mathematical analysis of several related processes, including arriving at the back of the queue, waiting in queue (a storage process) and being served in front of the queue (Sundarapandian, 2009). The theory permits the derivation and calculation of several performance measures including the average waiting time in the queue or the system, the expected number waiting or receiving service, and the probability of encountering the system in certain states such as empty, full having an available server or having to wait a certain time to be served (Boucher & Couture-Piché, 2015).

Queuing model can be utilized to model the material handling system variations and genetic

algorithm can be implemented to solve the integrated optimization problem. It is also demonstrated that the proposed optimization approach can significantly improve a production system with respect to total travelling time, total work-in-progress in the system, utilization and quantity of material handling equipment and required area (Sundarapandian, 2009). In this study, the queuing theory is used to explain the association between warehouse management and organizational performance. The use of the queuing theory helps organization to optimize facilities layout design and material handling systems while minimizing storage cost (Sundarapandian, 2009). Warehouse management in an organization helps to reduce the number of staff required, storage area as well as time taken to store or retrieve various materials for use.

### Conceptual Framework



**Independent Variables**      **Dependent Variable**

**Figure 1: Conceptual Framework**

### Inventory Control

Inventory control is a reliable means in which businesses are been managed to ensure customers



are satisfied and organization remains in operations via minimization of losses. Inventories are basically stocks of resources held for the purpose of future production and/or sales. Inventories may be viewed as an idle resource which has an economic value. Better management of inventories would release capital for use elsewhere productively. Hence Inventory control implies the coordination of materials accessibility, controlling, utilization and procuring of material. Throughout the inventory chain from raw material through to retail stocks, inventories are planned and controlled item by item. For each item in every inventory, two questions must be answered again and again: How many of this item should be ordered and when should it be ordered? (Borade & Sweeney, 2015).

According to Chalotra (2013) the purposes of inventory control include cost minimization, profit maximization, avoidance of running out of stock and to prevent surplus stock that are unnecessary. One of the most efficient ways of inventory control is the use of Just-in-Time system. This system is explained by Borade and Sweeney (2015) as the inventory control method designed to minimize inventory, and move it to the field for use exactly when needed. The key principle with this system is to eliminate excess inventory. By using this system, a manufacturing company for instance, stays lean by minimizing waste wherever possible.

### **Process Auditing**

Proactive source error identification starts with process auditing. One of the most important principles of inventory management is process auditing which should be done often. Process auditing should take place at every transactional steps from receiving and to shipping inventory including all the inventory transactions that takes place in between the processes (Oballah, Waiganjo & Wachiuri, 2015). In most firms, optimal production management aims to minimize work in

process. Work in process requires storage space, represents bound capital not available for investment and carries an inherent risk of earlier expiration of shelf life of the products (Ogbo, Onekanma & Ukpere, 2014).

A queue leading to a production step shows that the step is well buffered for shortage in supplies from preceding steps, but may also indicate insufficient capacity to process the output from these preceding steps. Work in progress (WIP) is a stage in between the raw material and finished goods. It is no longer raw material because it has undergone some processing in the production process. It is also not yet finished goods because more processing has to be done to put it into its salable condition. WIP includes the items that are being fabricated or waiting in a queue for further processing or in buffer storage (Seungjae, Ennis & Spurlin, 2015). The aim of optimal production management is to minimize the work in progress because it has costs associated with it (Muller, 2011).

Work in progress requires storage space, represents tied-up funds not available for investment and carries an inherent risk of earlier expiration or damage of shelf life of the products. The accounting of work in progress is similar to the accounting of inventory. Like any other stock it is valued at the lower of cost and net realizable value (Seungjae, Ennis & Spurlin, 2015). Cost includes the cost of the raw materials, labor cost and other processing costs. Net realizable value is the price for which an item could be sold less costs involved in selling.

### **Inventory Investment**

The objectives of inventory management practices are to minimize inventory investments and to maximize customer service. It is a plan to see that, the goals can be inconsistent or even indirect conflicts the role of the materials management is

thus to balance the objective in relation to the existing conditions and environmental limitations (Thummalapalli, 2010). The basic object of inventory management is to maximize customer service through maintaining appropriate amount of inventory with minimum possible cost. Inventory costs are costs associated with the operation of an inventory system. According to Chopre et al (2007) in order to achieve a strategic fit between supply chain and competitive strategies, a business must understand the customer. The characteristics which need to be understood include: time required, quality of the item required, quantity of the item required, and price of the item. Information sharing is a powerful tool in effective inventory management at all levels of supply chain network. Information must be accurate on stock levels, costs, decisions, shipment, customer preferences.

According to Chopre et al (2007) customer forecast, sales history, print of sale, ordering costs, quality and quantity are some of the quality information required. Hamisi 2010, Chopra et al (2007) Timely and accurate information enhancing coordination which is intern aligns demand patterns, orders, inventory levels and price. Currently proper and accurate information sharing, flow reduces inventory costs. These are costs of holding goods in stock which are usually expressed in a percentage of the inventory value. It includes capital, warehousing, depreciation, insurance and shrinkage. Inventory management is associated with costs of procurement which are ordering costs, hold (2015) ordering, holding and shortage costs make up three categories of inventory related costs. Scope (2010) indicated that a lot of working capital is kept in inventory. Inventory costs come about from holding costs, stock out acquisition costs for example preliminary costs, for preparing requisitions, vendor selection, regulation cost order preparation, inspection costs. Holding costs may also be storage costs, cost of space, electricity, labour costs, handling costs clerical costs

deterioration costs, obsolescence and pilferage. According to Tersire (2012) demand variations affect inventory levels, costs and profits. When demand forecast is low and demand is high then stock out arises therefore realized by customers' responsiveness (Hamisi 2010). High stock levels during low demand period may result high inventory costs. Therefore demand variability is due to inaccurate information on supplies inaccurate demand forecast, batch ordering price variation which stimulate formed buying (overstocking). Hamisi (2010) has indicated that inadequate information flow allows various partners to coordinate their long term and short term plan. Information sharing is key to supply chain coordination which maximizes supply chain profitability through cost containment and responsiveness.

### **Warehouse Management**

The principles of any inventory management require a proper, formal standardized process to ensure correct results (Lwiki *et al.*, 2013). It is necessary to allocate warehouse resources efficiently and effectively to enhance the productivity and reduce the operation costs of the warehouse. One vital area determining the efficiency of warehouse is the determination of the proper storage locations for potentially thousands of products in a warehouse (Seungjae, Ennis & Spurlin, 2015). Various factors affecting the storage assignment like order picking method, size and layout of the storage system, material handling system, product characteristics, demand trends, turnover rates and space requirements are been extensively studied. It has been suggested that selecting appropriate storage assignment policies (random, dedicated or class-based) and routing methods (i.e. transversal, return or combined) with regards to above factors is a possible solution to improve the efficiency (Muller, 2011)

## **Performance of State Corporations**

Other researchers such as Galbraith and Schendel (2013) support the use of return on assets (ROA), return on equity (ROE) and profit margin as the most common measures of performance. Return on Assets (ROA) is derived by dividing net income of the fiscal year with total assets. Return on Equity (ROE) means the amount of net income returned as a percentage of shareholders equity. It measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested. Ricardo (2011) emphasize that successful organizations are those with the highest return on equity and those who have established performance management system "aligning" every aspect of the organization from top management to the factory floor. On the other hand, Nicholas (2008) argues that many organizations do not give a balanced picture of organizational performance. There is an over-emphasis on financial criteria, with pre-occupation with past performance. Performance measures are usually not linked to strategies and goals of the overall organization and they are inward looking and do not capture aspects of performance necessary to gain and retain customers or build long term competitive advantage.

The operational indicators in this study include such measures as new product introduction, product quality, personnel activities coordination, internal process coordination, sales/revenue growth, profitability/ROA, personnel absenteeism, productivity, employee satisfaction, labour turnover and overall corporation performance. These operational measures reflect the competitive position of the firm in its industry space and might lead to financial performance. Hence, using a multiple indicator approach to operationalize firm's performance would be superior to using only a single indicator.

## **Empirical Review**

This section entails a review of the research work done by other scholars on the influence of inventory control management practices on performance of commercial state corporations in Kenya. The findings from data that is collected analyzed and reports from past studies will be presented. This provides a broader understanding of the topic being researched and guides the path for research.

### **Inventory Control**

Onkundi and Bichanaga (2016) sought to establish factors influencing inventory management in Public Health Hospitals in Kisii County. The objectives of the study were: to find out the influence of stock replenishment on inventory management performance Public Health Sector; establish how information sharing influences effective inventory management performance of the Public Health Sector; find out the influence of inventory costs on inventory management performance of the Public Health Sector and establish influences of demand variability on inventory management performance of the Public Health Sector in Kisii County, Kenya. Findings of the study were overstocking and under stocking of inventory of the Public Health Sector in Kisii County was due to inadequate forecasting of requirements, Scheduled time for deliveries, insufficient staff, scheduled time for receiving, issuing and unorganized storage facilities affect information sharing between the customer and supplier thus is affecting effective inventory management of the Public Health Sector; demand variability rating greatly influence inventory management.

### **Process Auditing**

This study therefore sought to investigate on the influence of inventory management on the performance of the energy sector in Kenya with a

special focus on Kenya Power Limited. The study also sought to establish the influence of process auditing on the performance of Kenya Power Limited. The study found that inventory control influences the performance of Kenya Power especially the lack of process auditing. The study recommends that organization should enhance process auditing in the inventory control to enhance efficiency in service delivery. Onchoke and Wanyoike (2016) sought to establish the Influence of inventory control practices and procurement performance of Agrochemical Distributors in Nakuru Central Sub-County.. Findings of the study revealed that Internal Inventory Security Procedural Practices, Inventory Auditing and Computerized Inventory Control both individually and collectively have significant positive influence on Procurement Performance.

### **Inventory Investment**

A significant amount of investment can be saved when organizations have no obsolete and excessive inventory. Any decrease in these numbers can reduce the operational costs and most importantly taxes paid due to inventory stored in the warehouse will also decrease (Van Weele & Van Raaij, 2014). Many business owners have difficulty throwing away products they paid good money for. But holding on to obsolete products just burns up even more investments. Eliminating obsolete stock promptly, and use the cash and space you save for something more profitable. Naudeand Badenhorst-Weiss(2011) argues that once these items have diminished in value, the company must discount the product or discard them, which can cause large losses for a company. A number of organizations collapse due to poor planning and corruption which drives firms to closes down their operations. This can be stopped if proper inventory management is practiced and the technique thoroughly utilized for the benefit of the firm. Liu et al., (2010) noted that management and staff have minimal knowledge on

how to apply the economic order quantity which negates the success of an organization

### **Warehouse Management**

Njoroge (2015) sought to determine the inventory management practices used by Public hospitals in Kenya.. The study further concludes that the main challenges that hindered implementation of inventory management practices in public hospitals were: failure to invest more in the warehouse management especially with modern technologies. Akintonye (2014) found that inventory management led to improved performance of German Service firms. Mehra (2014) and Lapide (2010) also concluded that use of technology in warehouse inventory management improved efficiency of manufacturing firms and service firms. Gakuru (2012) found that the major factor hindering the application of inventory model is frustrations by the ordering system. Lack of computers to keep track of inventory levels and lack of awareness on how best to implement the models were also cited as constraining factors.

### **RESEARCH METHODOLOGY**

The study used descriptive research design because according to Mugenda & Mugenda (2008), the purpose of descriptive research is to determine and report the way things are and it helps in establishing the current status of things and helps the study to observe, analyze and draw reliable findings. The study collected primary data though a questionnaire. The analyzed quantitative data was presented using tables, charts and graphs. The regression model took the form:

$$Y = \beta_0 + \beta_1 \chi_1 + \beta_2 \chi_2 + \beta_3 \chi_3 + \beta_4 \chi_4 + \epsilon_i ; \text{ Where:}$$

Y = Performance of the commercial state corporations;

$\chi_1$  = Inventory control

$\chi_2$  = Process auditing;

$\chi_3$  = Inventory investment;

$\chi_4$  = Warehouse management

$\beta_0$  = the intercept (value of EY when X = 0);

$\beta_{1-n}$  = the regression coefficient or change included in Y by each  $\chi$ ;

$\epsilon_i$  = error term

## FINDINGS AND DISCUSSIONS

### Inventory Control

The study sought to assess the influence of inventory control on performance of the state corporations in Kenya. This section presents findings to statements posed in this regard with responses given on a five-point likert scale (where 5 = Strongly Agree; 4 = Agree; 3 = Neutral; 2 = Disagree; 1= Strongly Disagree). Table 4.5 presents the findings. The scores of 'strongly disagree' and 'disagree' have been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of 'Neutral' has been taken to represent a statement agreed upon

moderately, equivalent to a mean score of 2.6 to 3.4. The score of 'agree' and 'strongly agree' have been taken to represent a statement highly agreed upon equivalent to a mean score of 3.5 to 5.0. Table 1 presents the findings.

As tabulated, a majority of respondents were found to be neutral that the organization had ensured that there was tracking of inventory to enhance coordination of materials accessibility, controlling, utilization and procuring of materials (3.2345); They had correct forecasting methods thus reduction of stock outs in the organization (3.2190); The original equipment manufacturer was used to predict demand beyond a 4 week horizon (3.4908); The forecasting accuracy demonstrate improvements and related observations results in inventory markdowns (3.6723); The organization has advanced forecasting tools that can enable improvements in cost reduction (3.5689). The forecasting tool accuracy tools synchronizes the supply and demand cycle than the use of real time information (3.2248); The organization had adopted Just-in-Time system as the inventory control method designed to minimize inventory, and move it to the field for use exactly when needed(3.5232).

**Table 1: Influence of Inventory Control on Performance of State Corporations**

Inventory Control	Mean	Std. Dev
The organization has ensured that there is tracking of inventory to enhance coordination of materials accessibility, controlling, utilization and procuring of materials.	3.2345	.3312
We have the correct forecasting methods thus reduction of stock outs in the organization	3.2190	.6792
The original equipment manufacturer is used to predict demand beyond a 4 week horizon	3.4908	.1463
The forecasting accuracy demonstrate improvements and related observations results in inventory markdowns	3.6723	.2210
The organization has advanced forecasting tools that can enable improvements in cost reduction	3.5689	.2351

The forecasting tool accuracy tools synchronizes the supply and demand cycle than the use of real time information	3.2210	.3490
The organization has adopted Just-in-Time system as the inventory control method designed to minimize inventory, and move it to the field for use exactly when needed.	3.5232	.6823

### Process Auditing

The study sought to assess the influence of process auditing on performance of the state corporations in Kenya. This section presents findings to statements posed in this regard with responses given on a five-point likert scale (where 5 = Strongly Agree; 4 = Agree; 3 = Neutral; 2 = Disagree; 1= Strongly Disagree). Table 1 presented the findings. The scores of 'strongly disagree' and 'disagree' have been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of 'Neutral' has been taken to represent a statement agreed upon moderately, equivalent to a mean score of 2.6 to 3.4. The score of 'agree' and 'strongly agree' have been taken to represent a statement highly agreed upon equivalent to a mean score of 3.5 to 5.0. Table 2 presented the findings.

As tabulated, a majority of respondents were found to be neutral that the organization has ensured that there adequate monitoring systems for source error identification (3.2573); The organization has ensured that monitoring systems enhance optima production to minimize work in process related costs (3.1802); The organization work in progress tracking reduces fabricated and waiting queues for reducing production costs (3.8902); The organization has ensured that inventory shrinkage has reduced stock shortages this reduced lead times (4.2173); The organization has ensured that the replenishment is not done hurriedly leading to costly inventory management and likewise low performance standards (4.2910). The organization has ensured that there is inventory shrinkage since customers will be satisfied instantly leading to improved performance rating (3.2802).

**Table 2: Influence of Process Auditing on Performance of State Corporations**

Process Auditing	Mean	Std. Dev
The organization has ensured that there adequate monitoring systems for source error identification	3.2573	.4521
The organization has ensured that monitoring systems enhance optima production to minimize work in process related costs	3.1802	.7832
The organization work in progress tracking reduces fabricated and waiting queues for reducing production costs	3.8902	.5621
The organization has ensured that inventory shrinkage has reduced stock shortages this reduced lead times	4.2173	.4523
The organization has ensured that the replenishment is not done hurriedly leading to costly inventory management and likewise low performance standards.	4.2910	.8762
The organization has ensured that there is inventory shrinkage since customers will be satisfied instantly leading to improved performance rating.	3.2802	.4901

### Inventory Investment

The study sought to assess the influence of inventory investment on performance of the state corporations in Kenya. This section presents findings to statements posed in this regard with responses given on a five-point likert scale (where 5 = Strongly Agree; 4 = Agree; 3 = Neutral; 2 = Disagree; 1= Strongly Disagree). Table 3 presents the findings. The scores of 'strongly disagree' and 'disagree' have been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of 'Neutral' has been taken to represent a statement agreed upon moderately, equivalent to a mean score of 2.6 to 3.4. The score of 'agree' and 'strongly agree' have been taken to represent a statement highly agreed

upon equivalent to a mean score of 3.5 to 5.0. Table 3 presented the findings. As tabulated, a majority of respondents were found to be neutral that the organization has ensured there is no obsolete and excessive inventory to reduce operational costs (3.5678); The organization has ensured that there is no overstocking to reduce taxes paid to the inventory stored (3.4252); The organization has ensured that there is no holding on to obsolete products in the stores (3.2180); The organization has ensured that there is elimination of obsolete stock promptly and use of space for something more profitable (3.3316); The organization ensure that there is inventory management staff are properly trained on the inventory management practices (3.2056).

**Table 3: Influence of Inventory Investment on Performance of State Corporations**

Inventory Investment	Mean	Std. Dev
The organization has ensured there is no obsolete and excessive inventory to reduce operational costs	3.5678	.3218
The organization has ensured that there is no overstocking to reduce taxes paid to the inventory stored	3.4252	.3568
The organization has ensured that there is no holding on to obsolete products in the stores	3.2180	.3218
The organization has ensured that there is elimination of obsolete stock promptly and use of space for something more profitable	3.3316	.4218
The organization ensure that there is inventory management staff are properly trained on the inventory management practices	3.2056	.4321

### Warehouse management

The study sought to assess the influence of warehouse management on performance of the state corporations in Kenya. This section presents findings to statements posed in this regard with responses given on a five-point likert scale (where 5 = Strongly Agree; 4 = Agree; 3 = Neutral; 2 = Disagree; 1= Strongly Disagree). Table 4 presents the findings. The scores of 'strongly disagree' and 'disagree' have been taken to represent a statement not agreed upon, equivalent to mean

score of 0 to 2.5. The score of 'Neutral' has been taken to represent a statement agreed upon moderately, equivalent to a mean score of 2.6 to 3.4. The score of 'agree' and 'strongly agree' have been taken to represent a statement highly agreed upon equivalent to a mean score of 3.5 to 5.0. Table 4 presents the findings.

As tabulated, a majority of respondents were found to be neutral that the organization has ensured that there is the use warehouse management system to improve cost reduction (3.2180); The organization has installed storage locations to enhance timely

deliveries (3.2168); There is the use of automated tools and techniques for order processing to enhance timely deliveries in the organization (2.8902); The organization has ensured that there is staff competency so that there can be timely deliveries (3.2180); The organization ensure that

there is use of stock cycle counts of the items in the storage locations (2.9902). The supply chain department has ensured that there is Integrated warehouse management to enhance cost reduction, timely deliveries, improve customer satisfaction and increase profits for the organization (3.2180)

**Table 4: Influence of Warehouse Management on Performance of State Corporations**

<b>Warehouse Management</b>	<b>Mean</b>	<b>Std. Dev</b>
The firm has ensured that there is the use warehouse management system to improve cost reduction	3.2180	.2168
The firm has installed storage locations to enhance timely deliveries	3.2168	.3128
There is the use of automated tools and techniques for order processing to enhance timely deliveries in the organization	2.8902	.9032
The firm has ensured that there is staff competency so that there can be timely deliveries	3.2180	.2568
The organization ensure that there is use of stock cycle counts of the items in the storage locations	2.9902	.2360
The supply chain department has ensured that there is Integrated warehouse management to enhance cost reduction, timely deliveries, improve customer satisfaction and increase profits for the organization	3.2180	.2380

**Performance of Commercial State Corporations**

The study sought to examine the influence of the inventory management practices on performance of the commercial state corporations, attributed to the influence of inventory control, inventory investment, process auditing and warehouse management. The study was particularly interested in three key indicators, namely revenue collection, reduction of costs and profit before tax with all the three studied over a 5 year period, running from 2013 to 2017. Findings in Table 5 above reveal improved performance across the 5 year period running from the year 2013 to 2017. Revenue collection recorded positive improvement with a majority affirming to less than 10% in 2012 (42.3%) and 2013 (37.7%), to 10% in 2014 (36.1%) then more than 10% in 2015 (41.1%) and 2016 (37.5%). A similar trend was recorded in cost reduction, improvement from from less than 10% (44.1%) in

2012, to more than 10% in 2013 (36.4%), 2014 (40.4%) and 2015 (37.3%). Profit before tax further recorded positive improvement with a majority affirming to less than 10% in 2013 (37.9%) and 2014 (35.9%), to 10% in 2015 (35.9%) and 2016(35.3%) then by more than 10% in 2017 (36.2%). It can be deduced from the findings that key performance indicators have considerably improved as influenced by among other inventory management practices attributes, the influence of inventory control, inventory investment, process auditing and warehouse management. Revenue collection, reduction of costs and profits before tax have particularly improved by at least 10 percent across in the organization pointing to the significance of inventory control management practices in the supply chain process. The reasons for the sharp increase in revenue collection in 2015 is because of alternative revenue collection from commercial drilling collected from Akiira and because in the



same year two new plants 280MW were commissioned in Naivasha and Naivasha being

outside Nairobi there was an investment reduction (tax break) for that year(www.kengen.co.ke)

**Table 5: Performance of Commercial State Corporation**

<b>Revenue Collection</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Increased by less than 10%	42.3	37.7	31.6	30.7	29.5
Increased by 10%	31.8	32.9	36.1	28.2	33
Increased by more than 10%	25.9	29.4	32.3	41.1	37.5
<b>Reduction of Costs</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Increased by less than 10%	44.1	35.2	33.4	25.7	27.1
Increased by 10%	31.7	32.6	30.2	33.9	35.6
Increased by more than 10%	23.5	32.2	36.4	40.4	37.3
<b>Profits Before Tax</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Increased by less than 10%	37.9	35.9	31.2	25.7	33.1
Increased by 10%	36.2	31.3	35.9	35.3	30.7
Increased by more than 10%	25.9	32.8	32.9	39	36.2

### Multiple Regression Analysis

The study adopted a multiple regression analysis with the help of SPSS version 22 to compute the measurements so as to establish the relationship of independent variables and dependent variable, that is e performance of State Corporations in Kenya. Multiple regression analysis explains or predicts variation in a dependent variable because of the independent variables and this is assessed using the coefficient of determination known as R square and the larger the coefficient, the larger the effect of the independent variable upon the dependent variable. The R Square can range from .000 to 1.000, with 1.000 showing a perfect fit that indicates that each point is on the line (Carver, 2009). The coefficients or beta weights for each variable allows the researcher to compare the relative importance of each independent variable. In this study, the unstandardized coefficients and standardized coefficients are given for the multiple

regression equations. However, discussions are based on the standardized coefficients for studying each variable. According to the model summary Table 6, R is the correlation coefficient which shows the relationship between the independent variables and dependent variable. It is notable that there exist strong positive relationship between the independent variables and dependent variable as shown by R value of 0.792. The coefficient of determination ( $R^2$ ) explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable and the four independent variables that were studied explain 62.70% of the performance in the commercial state corporations as represented by the  $R^2$ . This therefore means that other factors not studied in this research contribute 37.30% of the performance of the commercial state corporations. This implies that these variables are very significant

therefore need to be considered in any effort to boost performance of the commercial State Corporations in the study area. The study therefore

identifies the variables as critical inventory management practices that influence performance of the commercial state corporations in Kenya.

**Table 6: Model Summary**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	.792	.627	.598	.001

**ANOVA Results**

F-test is done to test the effect of independent variables on the dependent variable simultaneously. The F-statistic test basically shows whether all the independent variables included in the model jointly influence on the dependent variable. Based on the study results of the ANOVA

Test or F-test in Table 7 obtained F-count (calculated) was 54.792 greater the F-critical (table) (11.542) with significance of 0.000. Since the significance level of 0.000 < 0.05 we conclude that the set of independent variables affect the performance of the organization and this shows that the overall model was significant.

**Table 7: ANOVA Results**

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	15.780	4	3.945	54.792	.000 <sup>a</sup>
Residual	4.230	59	.072		
Total	20.010	63			

NB: F-Critical Value = 11.542

The results of multiple regression analysis obtained regression coefficients t value and significance level as indicated in Table 8. The study conducted a multiple regression analysis so as to determine the relationship between the dependent variable and independent variables. From the study findings on the regression equation established, taking all factors into account (independent variables) constant at zero performance of the commercial state corporation will be 12.908. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in inventory control will lead to a 0.882 increase in performance of the commercial state corporation; a

unit increase in process auditing will lead to a 0.782 increase in performance of the commercial state corporation, a unit increase in inventory investment will lead to 0.728 increase in performance of the commercial state corporation and a unit increase in warehouse management will lead to 0.698 increase in performance of the commercial state corporation. This infers that inventory control contributed most to performance of the commercial state corporation. Based at 5% level of significance, inventory control had a .000 level of significance; process auditing show a .003 level of significance, inventory investment show a .008 level of significance and warehouse management show a .010 level of significance

hence the most significant factor was inventory control.

**Table 8: Coefficient Results**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	$\beta$	Std. Error	$\beta$		
(Constant)	12.908	10.882		6.325	.000
X <sub>1</sub> _Inventory Control	.882	.132	.465	6.667	.000
X <sub>2</sub> _Process Auditing	.782	.133	.354	5.890	.003
X <sub>3</sub> _Inventory Investment	.728	.136	.255	5.345	.008
X <sub>4</sub> _Warehouse Management	.698	.142	.232	4.908	.010

The general form of the equation was to predict performance of the commercial state corporation from inventory control, process auditing, inventory investment and warehouse management is:  $(Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon)$  becomes:  $Y = 12.908 + 0.882X_1 + 0.782X_2 + 0.728X_3 + 0.698X_4$ . This indicates that performance of the commercial state corporation =  $12.908 + 0.882 * \text{Inventory Control} + 0.782 * \text{Process Auditing} + 0.728 * \text{Inventory Investment} + 0.698 * \text{Warehouse Management} + 12.908$

**T-Test Results**

The t-value for Inventory Control (6.667 > 1.96) has a significance level of 0.000 thus the value is less than 0.05, thus research question one is concluded that the inventory control has significant positive impact on the performance of the commercial state corporations in Kenya. The t-value for process auditing (5.890 > 1.96) has a significance level of 0.003 thus the value of less than 0.05. Thus research question two is concluded that process auditing has significant positive impact on the performance of the commercial state corporations in Kenya. The t-value for inventory investment (5.342 > 1.96) has a significance level of 0.000 thus the value is less than 0.05, thus research question

three is concluded that the inventory investment has significant positive impact on the performance of the commercial state corporations in Kenya. The t-value for warehouse management (4.908 > 1.96) has a significance level of 0.010 thus the value is less than 0.05, thus research question four is concluded that the warehouse management has significant positive impact on the performance of the commercial state corporations in Kenya.

**CONCLUSION AND RECOMMENDATIONS**

The study sought to examine the influence of inventory management practices on performance of the commercial state corporations in Kenya. In this study the target population was eighty eight employees of KenGen drawn from supply chain and related departments who were engaged in inventory management related activities. The summary of the study findings presented herein followed the research objectives formulated in chapter one of the study.

The study sought to assess the influence of inventory control on performance of the commercial state corporations in Kenya. The majority of respondents were found to be neutral that the organization has ensured that there is tracking of inventory to enhance coordination of materials accessibility, controlling, utilization and

procuring of materials. The organization has correct forecasting methods thus reduction of stock outs in the organization. The original equipment manufacturer is used to predict demand beyond a 4 week horizon. The forecasting accuracy demonstrates improvements and related observations results in inventory markdowns. The organization has advanced forecasting tools that can enable improvements in cost reduction. The forecasting tool accuracy tools synchronize the supply and demand cycle than the use of real time information. The organization has adopted Just-in-Time system as the inventory control method designed to minimize inventory, and move it to the field for use exactly when needed.

The study established that process auditing influence performance of the commercial state corporations in Kenya. The majority of respondents were found to be neutral that the organization has ensured that there adequate monitoring systems for source error identification. The organization has ensured that monitoring systems enhance optima production to minimize work in process related costs. The organization work in progress tracking reduces fabricated and waiting queues for reducing production costs. The organization has ensured that the replenishment is not done hurriedly leading to costly inventory management and likewise low performance standards. The organization has ensured that there is inventory shrinkage since customers will be satisfied instantly leading to improved performance rating.

The study established that inventory investment influence performance of the commercial state corporations in Kenya. The majority of respondents were found to be neutral that the organization has ensured there is no obsolete and excessive inventory to reduce operational costs. The organization has ensured that there is no overstocking to reduce taxes paid to the inventory stored. The organization has ensured that there is no holding on to obsolete products in the stores.

The organization has ensured that there is elimination of obsolete stock promptly and use of space for something more profitable and there is inventory management staff are properly trained on the inventory management practices.

The study established that warehouse management influence performance of the commercial state corporation. The majority of respondents were found to be neutral that the organization has ensured that there is the use warehouse management system to improve cost reduction. The organization has installed storage locations to enhance timely deliveries. There is the use of automated tools and techniques for order processing to enhance timely deliveries in the organization. The organization has ensured that there is staff competency so that there can be timely deliveries and ensure that there is use of stock cycle counts of the items in the storage locations. The supply chain department has ensured that there is Integrated warehouse management to enhance cost reduction, timely deliveries, improve customer satisfaction and increase profits for the organization.

The study sought to examine the influence of inventory management practices on performance of the commercial state corporations in Kenya, attributed to the influence of inventory control, process auditing, inventory investment and warehouse management over a 5-year period, running from 2013 to 2017. The study established that there was improvement on the performance of the commercial state corporation in terms of reduction of costs, revenue collection and profits before tax. From inferential statistics, a positive correlation is seen between each determinant variable and performance of the commercial state corporation. The strongest correlation was established to be inventory control. All the independent variables were found to have a

statistically significant association with the dependent variable at ninety-five level of confidence. Analysis of variance was further done to show whether there is a significant mean and all variables were found to be significant.

### **Conclusions of the Study**

Based on the study findings, the study concluded that performance of the commercial state corporations in Kenya is affected by the independent variables. The inventory control is the first important factor which influences performance of the commercial state corporations in Kenya. The regression coefficients of the study show that inventory control has a significant influence performance of the commercial state corporations in Kenya. This implies that increasing levels of inventory control would increase the performance of the commercial state corporations

The study concludes that process auditing is the second most important factor which influences performance of the commercial state corporations in Kenya. The regression coefficients of the study show that process auditing has a significant influence performance of the commercial state corporations in Kenya. This implies that increasing levels of process auditing would increase the performance of the commercial state corporations.

The study concluded that inventory investment is the third most important factor which influences performance of the commercial state corporations in Kenya. The regression coefficients of the study show that inventory investment has a significant influence performance of the commercial state corporations in Kenya. This implies that increasing levels of inventory investment would increase the performance of the commercial state corporations

Finally, the study established that warehouse management is the fourth most important factor which influences performance of the commercial

state corporations in Kenya. The regression coefficients of the study show that warehouse management has a significant influence performance of the commercial state corporations in Kenya. This implies that increasing levels of warehouse management would increase the performance of the commercial state corporations

### **Recommendations of the Study**

Better management of inventories would release capital for use elsewhere productively. Hence Inventory control implies the coordination of materials accessibility, controlling, utilization and procuring of material. The inventory control includes cost minimization, profit maximization, avoidance of running out of stock and to prevent surplus stock that are unnecessary. The study recommends for most efficient ways of inventory control is the use of Just-in-Time system.

Process auditing is important for the source error identification and should be done often. Process auditing should take place at every transactional step from receiving and to shipping inventory including all the inventory transactions that takes place in between the processes (This calls for works in process requires storage space, represents bound capital not available for investment and carries an inherent risk of earlier expiration of shelf life of the products.

The inventory investment practices can maximize customer service. It is a plan to see that, the goals can be inconsistent or even indirect conflicts the role of the materials management is thus to balance the objective in relation to the existing conditions and environmental limitations. The organizations should ensure that working capital is not kept in inventory which maximizes supply chain profitability through cost containment and responsiveness.

It is necessary to allocate warehouse resources efficiently and effectively to enhance the productivity and reduce the operation costs of the warehouse. There should be proper storage locations for easy order and material handling. There is need for selecting appropriate storage assignment policies and routing methods with regards as a possible solution to improve the efficiency.

### **Areas for Further Research**

The study is a milestone for further research in the field of inventory management practices in the commercial state corporations in Africa and particularly in Kenya. The findings have

demonstrated influence of the inventory management practices on performance of the commercial state corporations. The current study should therefore be expanded further in future in order to determine performance of the commercial state corporations. Ince the study established there could the remaining 37.30% is explained by the variables or other aspects outside the model. Further, the existing literature indicates that as a future avenue of research, there is need to undertake similar research in other private organizations and public sector in general in Kenya in order to establish whether the explored factors can be generalized.

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