



Influence of Inventory Control Practices on Procurement Performance of Agrochemicals Distributors in Nakuru Central Sub-County, Kenya

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Abstract: The purpose of this study was to establish the Influence of inventory control practices and procurement performance of Agrochemical Distributors in Nakuru Central Sub-County. The study was a survey as it sought to determine the relationship between internal inventory control and procurement performance in agrochemical distributors in Nakuru Central sub-county within limited time frame. The respondents in this study were the employees in Agrochemical Distributors in Nakuru Central Sub-County. Data was collected through structured questionnaires that were self-administered by the researcher through drop and pick technique. The respondents were given ample time to fill the questionnaires after which they were collected for analysis. The filled questionnaires were checked before coding for analysis. SPSS version 21 was used in analyzing the collected data. Frequencies and percentages were used to describe individual indicators of internal inventory control and procurement performance while correlation and regression analysis for and influence of internal inventories control practices on procurement performance. The results of the study were presented using tables that were accompanied by explanation. 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. The study recommends that further study should be conducted to assess how internal inventory security procedural practices can be adopted by public institutions and whether such practices can be incorporated in the public procurement regulations. Also, further studies can be done to establish the integrated role of internal and external audit in inventory control especially in manufacturing and distributing organizations and to determine the influence of computerized inventory management on supplier and customer relationship management in manufacturing and distributing organizations.

Keywords: Inventory Control Practices, Procurement Performance, Agrochemicals Distributors

1. Introduction

The current supply chain environment is characterized with numerous risk factors that may negatively affect internal supply chain operations of an enterprise. Scholars have regarded these factors as supply chain risks. For an organization to successfully operate and compete in the current risky supply chain environment, the organization must put into place effective control measures within its internal supply chain. According to Posazhennikova (2012) one of the strategies currently adopted by enterprises is

development of an effective internal inventory control system.

Inventory control is the supervision and storage of materials and to ensure accessibility of the items in order to ensure an adequate supply without excessive supply or stock outs. Bartmann (1992), To Score (2002), inventory control involves the procurement, care and disposition of materials while to Posazhennikova (2012), inventory control is concerned with understanding organizational and customer requirements, forecasting and scheduling for inventory delivery based on lead times and developing inventory

control policies and procedures.

Internal Inventory Control has been and continues to be an area of concern to business irrespective of the scope of operation, size or location because of the costs associated with it. According to Score (2002), inventory control accounts for 45% to 90% of total organizations' expenses. Similarly, internal inventory control can be used by an organization as a strategic approach to achieve improved efficiency and effectiveness in operations and enhanced organizational performance; internal inventory control can be used to streamline internal processes, track items across the organization and smoothen internal operations hence improving organizational internal efficiency (Oballah, 2015).

The concept of inventory management and control started attracting attention as early as 1910s. In 1915 for instance, the Economic Order Quantity was developed by Harris to help organizations with the problem of determining the optimal quantity to order (Harris, 1915). In 1953, a probabilistic model was developed and in 1958 dynamic model was developed to enhance inventory control in complex and dynamic business environments (Liang, 1997). In the current business environment, organizations adopt the current technologies to enhance inventory control. For instance, computerized inventory control systems such as Enterprise Resource Planning, Just in Time and Electronic Data Interchange have increasingly gained popularity in organizations (Sage, 2012).

Internal Inventory Control is currently every organization's business. While organizations adopt various inventory control practices based on the environments they operate in. In Canada for instance, internal inventory control practices have become popular among organizations including public organizations. A study on internal audit of internal inventory control framework of Elections Canada revealed that Elections Canada has put in place appropriate processes, practices, procedures and controls to manage the inventory of election supplies (Elections Canada, 2010). In the US, the United States General Accounting Office developed an executive guide in 2002 to achieve consistent and accurate inventory control. The framework can guide the federal managers to improve accuracy and reliability inventory management (United States General Accounting Office, 2002). Similarly, the National Food Service Management Institute of the University of Mississippi developed a reference guide for inventory management and tracking in 2012. The argument in support of development of this guide is that inventory management is one of the critical components of management not only in United States Department of Agriculture (USDA) but also in any other management (National Food Service Management Institute, 2012).

In Africa, the concept of inventory control has been a popular concept in accounting and procurement systems since 1930s. According to the report made by The Institute of Auditors Research Foundation, internal control systems gained popularity during the industrialization period. For instance, in Nigeria, the fact that inventories are believed to

provide a direct link between production and sales and constitute good percentage of organizational costs has made many organizations invest heavily on systems that can enhance inventory control. The organizations had to come up with organizational inventory control policies and long term inventory management plans where the top management is directly involved (Ogbo A. O., 2014). The situation is not different in South Africa. Inventory control has been considered a challenge to many organizations, especially the public ones. A study by Nzuza (2012) on Factors affecting the success of inventory control in the Stores Division of the eThekweni Municipality, Durban appreciated that there have been inefficiencies in the inventory systems and suggested a revision of inventory control processes. In response to such findings, there is now in place the Preferential Procurement Policy Framework Act (PPPFA), this act was passed to guide inventory control of municipal authorities (Nzuza, 2012).

In Kenya, the situation has not been different. Organizations have and continued to face inventory management challenges. Based on the premise that inventory control is an important factor in customer satisfaction and improved profitability, organizations, whether large or small, public or private, local or global are in one way or another concerned about inventory control. It has been the attempt of most organizations striving to achieve optimal inventory control while minimizing inventory costs. 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). Some of the currently adopted internal inventory control practices adopted by organizations in Kenya include; inventory audits, development of organizational inventory management policies and procedures and development of computerised inventory management systems (Swaleh, 2014).

Just like any other functional areas of the organization, the procurement function must be evaluated to establish its level of performance (Kakwezi, 2014). Procurement performance looks at the extent to which the procurement function achieves the organizational procurement goals and objectives (Neely, 1999). According to Kakwezi & Nyeko (2014), procurement performance looks at the efficiency and effectiveness of procurement function. Procurement performance can also be looked at in terms of financial and non-financial aspects relative to the financial and non-financial goals of the organization related to procurement functions (Sigma, 2011).

Procurement performance is not a new concept as the concept has attracted attention from as early as 1930s. As reported by Kakwezi & Nyeko (2014), in 1931, the concept

of procurement performance was a hot debate in the National Association of Purchasing Agents meeting in the US. In 1945, following the contest, a committee was set to draft guidelines of the concept. In the recent past, in 2004, European Institute of Purchasing Management organized a conference which was majorly focused on measuring purchasing performance. The conference looked at majorly the intangible and financial aspects of procurement performance. Costs and savings were found to be major factors in procurement performance.

1.1. Statement of the Problem

Organizations 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. The procurement departments of agrochemical distributors are responsible of providing the necessary goods and services to all of their customers and individuals by keeping the stock levels at most economical costs possible. There has been an outcry from the customers that institutions both public and private do not meet the stipulated customer service levels. The effectiveness of internal stock control is directly measurable by how successful an organization is providing services to its customers. 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 was some evidence of suppliers who cannot meet delivery schedules and thus cause delivery uncertainty thus negatively impacting procurement performance. It was therefore important to expand knowledge on internal inventory control practices, their adoption and benefits to organizations. While some studies had conducted to relate inventory control practices with various aspects of organizational performance such as financial, economic and operational performance, most of such studies had focused on external inventory control practices. For instance, Ogbo studied the impact of effective inventory control management on organizational performance. In Nigeria Koumanakosh studied the effect of inventory management on firm performance. Very limited study had been done on internal inventory control practices. It is therefore evident that knowledge gap exists on the specific relationship between internal inventory control systems and procurement performance. This study intended to bridge this gap by determining the relationship between internal inventory control practices and procurement performance of agrochemical distributors in Nakuru Central Sub-County.

1.2. Research Hypotheses

HA₁: Inventory Security Practices have significant

influence on Procurement Performance of Agrochemicals distributing firms in Nakuru Central Sub County.

HA₂: Inventory auditing practices has significant influence on procurement performance of Agrochemicals distributing firms in Nakuru Central Sub County.

HA₃: Computerized Inventory Control system has significance influence on Procurement Performance of agrochemicals distributing firms in Nakuru central sub county.

1.3. Conceptual Framework

The study was guided by the conceptual framework presented in figure 1.

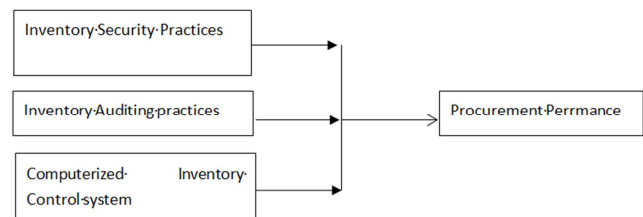


Figure 1. Conceptual Framework.

2. Literature Review

2.1. Theoretical Literature

Theoretical literature outlined the relevant theories on which the study was based or guided the study. This study is guided by The Stock Diffusion Theory, Resource dependence theory and Economic Order Quantity as discussed in the following section.

2.1.1. Stock Diffusion Theory

Stock diffusion theory outlines a dynamic approach to inventory management used for non-stationary items with non-constant means and variance. According to stock diffusion theory, stock consumption is modeled as a Markov process with a slow diffusion term. Fokker Planck equation is used to derive the probability distribution of stock consumption and reorder time. Management of the inventory distributed in this manner makes it possible to keep safety stock at minimum levels (Braglia, 2013). Similarly, it ensures the inventory costs are kept at minimal levels without interrupting the internal operations of the organization (Eaton, 1999).

This theory also takes into account the fluctuations in market. The market environment is dynamic and hence the nature of distribution of items. When fluctuations occur in supply market, the outcome is directly experienced by the product buyers and users (Angel, 2005). 'Stock diffusion concept can also be applied in supply environment with random and controllable demand and continuous input flow with fixed uncontrollable rate under finite storage capacity' (Kitaeva, 2014). To control inventory in such an uncertain environment, there is need to develop internal inventory control systems that allows direct and real time flow of information on materais; information flow between suppliers

and the organization. Organizations must develop internal structures, policies and procedures upon which all internal inventory control operations are based (Eaton, 1999).

2.1.2. Resource Dependency Theory

According to resource dependency theory, firms seek to reduce uncertainty and manage dependence by purposely structuring their exchange relationship, establishing formal and semi-formal relationship with other firms' (Mito, 2015). Through the developed linkages and relationships, organizations can reduce inconveniences that come as a result of market dynamics. This theory can be applied in internal inventory control. Organizations can form strategic, long term relationships with suppliers and product users to ensure smooth and timely delivery of materials (Angel, 2005). With long term supplier-customer relationship, the organization is able to buffer itself from internal and external organizational and environmental changes and achieve optimal inventory control (Kitaeva, 2014).

Resource dependency theory is based on six assumptions; firstly, organizations depend on resources for their internal operations. The second assumption is that the resources originate from outside the organization; they are bought from other organizations. Thirdly, the resources are scarce and competitive and therefore require strategic decisions to be made about what to buy, in what quantity and at what times. Lastly, resource dependency is directly linked to the organization's power which is rational, situational and mutual (Gerald, 2009).

Resource dependency theory looks at how the resources outside the organization determine internal operations of the organization. Procurement activities of the organization and control of procured materials is key in sourcing and control of resources used within the organization (Pfeffer & Salancik 1978). Resource dependency theory argues that an organization must have internal structures well integrated and coordinated through effective communication systems and aligned to organizational strategy. There is need to develop internal organizational policies and procedures that guide availing resources required in carrying out internal organizational activities. These policies are important in materials sourcing and control decisions. Similarly, there is need for a well-managed information system that allows timely flow of inventory information between the organization and its external stakeholders (Hurley, 2000).

2.2. Empirical Review

2.2.1. Influence of Inventory Security Practices on Procurement Performance

Organizations have to develop formal and structured ways of ensuring inventory security from within the organizations. There is need to have written down procedure on inventory security issues in the organization if inventory handlers and storage specialist have to succeed in ensuring internal inventory security. Internal inventory procedural practices are practices that have been laid down by the management to aid in internal security of inventory within the organization

(Troxell, 2015). Such procedural practices can be referred to as internal inventory loss prevention practices (SuperCuts, 2014). Since the procedural practices are written down, certain organizations develop them in the form of a check lists to ensure all internal organizational control practices are as expected (Lwiki et al., 2013). Such practices include; documented record keeping, procedural stock marking and stock taking, documented procedural inspection and surveillance and stock checking procedures (Jolla, 2014).

Study conducted by Lwiki et al. (2013) on the impact of inventory management practices on financial performance of sugar manufacturing firms in Kenya revealed that while sugar companies were applying the same inventory management practices, the implementation of these practices was unique to every organization based laid down procedural practices relating to inventory control. The findings of the study revealed a positive correlation between inventory internal procedural inventory security practices and organizational performance. The researchers recommended that for manufacturing firms to achieve optimal internal inventory security, they should have in place properly outlined laid down procedural inventory security control practices that are developed based on the organization's environment.

In the public sector, while organizations develop and use inventory control practices, the organizations have widely used the documented procedural inventory control practices as either provided for in the constitution or in the regulations relating to procurement and inventory control. Owuoth & Mwangi (2015) conducted such study on inventory control in public sector in Kenya. The study revealed that lack of adoption of the procedural practices spelt in the procurement act and other public procurement regulations by public organizations has led to poor procurement performance in the sector. Actually, the study revealed that a part from adopting the procedures provided for, public entities should use the provisions in the procedural documents to draft procurement policies that are congruent with their environment.

In Kenya, since the enactment of the procurement act in 2005 and development of the public procurement regulations, procurement entities have largely applied the practices provided for in the act and the procurement regulations to handle procurement process and ensure procurement activities are in control. While the application of procedural practices may enhance procurement performance, a lot needs to be done to improve ethical conduct and knowledge of employees on procurement regulations (Chemoiwo, 2014).

2.2.2. Influence of Inventory Audit Practices on Procurement Performance

Inventory audit is a popular concept among accounting and inventory management practitioners. According to Lewis & Media (2014), inventory audit ensures timely and adequate identification and evaluation of inventories. Inventory audits reduce inventory losses and ensure inventory accuracy. Inventory audits enables an organization evade risks associated with inventory such as; inadequate and

inappropriate inventory, unnecessarily high inventory levels, inaccurate and incomplete inventory records, poor inventory security and obsolete inventory (Johnstone, 2014).

A part from auditing inventory control practices, it is also important to audit inventory control systems themselves. It is important to audit aspects such as costs incurred in internal inventory control practices and systems. It is also important to audit the level of compliance with organizational and industrial procurement practices. Inventory control practices must be in line with organizational strategic direction and internal procurement and stores objective (European Academy for Taxes, Economics & Law, 2015). Internal inventory control audit if effectively managed can translate into enhanced procurement control efficiency and in return procurement performance.

Inventory control audit looks at whether internal policies and procedures have been documented and are designed to ensure compliance with organizational and industrial standards, whether internal inventory control policies and procedures are communicated to, and understood by employees implementing inventory control, whether controls are in place to effectively manage risks related to internal inventory control, whether there is an oversight body and if it meets regularly and receives key information to allow for effective monitoring of objectives, strategies and results related to internal inventory control, whether the expected inventory control results are clearly defined and monitored (Library and Archives Canada, 2014).

2.2.3. Influence of Computerized Inventory Control on Procurement Performance

Researchers have also developed interest in relationship between effective system of inventory management and organization performance. Ogbo (2014) conducted a study to investigate the importance of effective inventory control system on organizational performance as it relates to the bottling company. The result of the study revealed that flexibility in inventory control management is an important approach to achieving organizational performance. The study also revealed that organizations benefits from computerized inventory control management by way of easy storage and retrieval of material, improved sales effectiveness and reduced operational cost. The study further found that there is a relationship between operational feasibility, utility of inventory control management in the customer related issues of the organization and cost effectiveness technique are implemented to enhance the return on investment in the organization. Effective inventory control management is recognized as one of the areas management of any organization should acquire capability. It is recommended that organizations should adopt the automated inventory keeping method that best suit their operations.

Researches have established that, inventory level optimization strategy of the procurement process has positive relationship with procurement performance in State Corporations. The findings also revealed that, the inventory optimization level strategy is always non-negative when

unmet demands are lost (Musau, 2015). The study recommended that, function of inventory optimization strategy should be derived from the need of maintaining the right order fulfillment. Computerized inventory systems have been found to be the most effective in optimizing inventory control (Posazhennikova, 2012). Demand conditions are such that it is difficult to meet supply chain expectations as either some supply chain members will be required to expedite shipments (high cost) or hold high levels of inventory.

For organizations intending to develop inventory management systems in attempt to enhance procurement performance, there is need to understand if such systems can enhance procurement performance. Ondieki et al. (2015) investigated the effects of the management of warehousing inventory systems on procurement Seventh day Adventist institution's financial performance in Kenya. The main objective is to evaluate the effects of inventory warehousing systems on Seventh Day Adventist Institution's financial performance. The findings of the study revealed a positive significant relationship between inventory warehousing systems and financial performance. The study suggests that owners/managers of organizations embrace effective inventory warehousing systems as a tactic to further their financial performance and in overall performance of their organization.

Internal inventory operations integrated with supply chain management and systems enabled by the Internet will benefit businesses and stakeholders at large. Computerised inventory control is very useful in implementation of e-procurement especially in the large organizations and public organizations. In public organizations, computerised inventory control system can be used to achieve social and economic reforms and in public sector firms keen to demonstrate corporate social responsibility. It is therefore recommended that management facilitates development of operational tasks in the procurement area. Managers of organizations should seriously consider the usage. Computerised inventory systems can be used as a means for continuously improving their information gathering, supplier contact, contracting, and intelligence and analysis practices which in turn enhance performance (Wangui, 2014).

3. Methodology

3.1. Research Design

Research design is the pattern that the researcher intends to follow in conducting the research (Oso, 2011). This study was a cross sectional survey in that the primary research data was collected and the research was conducted at single point in time. Survey design explains events as they are and the relationship existing between variables and enable the researcher relate variables. In addition, this was a descriptive study and the design enabled the researcher establish the influence of inventory control practices on procurement performance of agrochemical distributors in Nakuru Central Sub-County.

3.2. Target Population

This study was conducted in the agrochemical distributing firms in Nakuru Central Sub-County. Target population is the total number of respondents/items the researcher is interested in or the study is about (Oso & Onen, 2011). The target population for the study was the employees working in the distributing firms.

3.3. Sampling Technique

The researcher used purposive sampling to select the four departments; finance and accounting, marketing, stores and procurements. This is because the employees in the departments are directly involved in inventory related operations and are better placed to offer the research data required for this study. Sample size for this research was determined using stratified sampling. The following formula developed by Yamane (1967) was used.

$$n = N / (1 + N (e^2))$$

Where; n = the desired sample size

e = probability of error (i.e., the desired precision, e.g., 0.05 for 95% confidence level).

N=the estimate of the population size.

3.4. Data Collection Procedure

Primary data was collected using the structured questionnaires. The questionnaires were issued to the selected employees in the distribution firms. Where possible, the respondents were requested to fill the questionnaires and remit them to the researcher immediately. The researcher gave respondents the option of filling the questionnaires at their convenient times after which the questionnaires were collected at a late date for analysis. The researcher conducted a pilot test in some of the distribution firms. A total of ten questionnaires were issued to employees in the finance and accounting, marketing, procurement and stores departments. The data collected through the questionnaires was analyzed to check on validity and reliability of the results

The pilot study enabled the researcher to assess the clarity of the questionnaire items so that those items found to be inadequate or vague would be modified to improve the quality of the research instrument thus increasing its reliability. The Cronbach's Alpha; 0.805, 0.790, 0.770 and 0.723>0.7 for Inventory Security Practices, Inventory Audit practices, Computerized Inventory Control and Procurement Performance indicated that the research questionnaires were reliable.

3.5. Data Analysis and Presentation

Descriptive statistics was used to analyze data on the aspects of inventory control and procurement performance. On the other hand, the relationship between inventory control and procurement performance was analyzed through correlation and regression analysis that was conducted with the aid of SPSS. The results were presented using tables accompanied by discussion.

4. Research Findings

4.1. Influence of Inventory Control Practices on Procurement Performance

Correlation analysis was done to determine the relationship between Inventory Security Practices, Inventory Auditing, Computerized Inventory Control and Procurement Performance. The results were as presented in Table 1

Table 1. Correlation Analysis Results.

		Procurement Performance
Inventory Security Practices	Pearson Correlation	.367**
	Sig. (1-tailed)	.006
	N	69
Inventory Auditing	Pearson Correlation	.244*
	Sig. (1-tailed)	.049
	N	69
Computerized Inventory Control	Pearson Correlation	.303*
	Sig. (1-tailed)	.019
	N	69

The results in Table 1, Pearson correlation=.367 and significance value=.006 (less than 0.01) indicates that there is significant positive correlation between Inventory Security Practices and Procurement Performance. Pearson Correlation value=.244 and significance value=.049 (less than 0.05) indicates that there is statistically significant positive correlation between Inventory Auditing practices and Procurement Performance. Lastly, the Pearson Correlation value=.303 and significance value=.019 (less than 0.05) indicates that there is a statistically significant correlation between Computerized Inventory Control and Procurement Performance.

The above findings concur with the findings of Ahmad et al. (2015) that adoption of inventory management practices enhances procurement efficiency thereby ensuring competitive advantage of the organization. The study also agree with the findings of Oballa et al (2015) that Computerized Inventory Control ensures that the right amount of stock is kept at all times enhancing achievement of procurement goal of the organizations. Lastly, the findings of Ngunyi (2014) revealed that effective procurement audit is employed effectively then is expected to improve accuracy in inventory records and enhance inventory control.

4.2. Overall Effect of Inventory Control Practices on Procurement Performance

The study sought to establish the overall influence of Internal Inventory Control on Procurement Performance. A multiple regression analysis was conducted to achieve this. The findings were as presented in Table 2

Table 2. Model Summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.568a	.322	.275	.553

a. Predictors: (Constant), Computerized Inventory Control, Inventory Auditing, Inventory Security Practices

The results in table 2, R-square=.322 indicates that in overall, internal inventory control explains 32.2 percent of the changes in procurement performance.

4.3. ANOVA Test

ANOVA test can be used to test the statistical significance on the overall influence of multiple independent factors on one dependent factor. Significance value less than 0.05 indicates statistically significant influence (Landau & Everritt, 2004). ANOVA test was used to establish the significance of the influence of Inventory Control practices on Procurement Performance

Table 3. ANOVA Table.

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.256	3	2.085	6.820	.001a
	Residual	13.148	65	.306		
	Total	19.404	68			

a. Predictors: (Constant), Computerized Inventory Control, Inventory Auditing, Inventory Security Practices

b. Dependent Variable: Procurement Performance

Table 3 above presents the significance test on the regression model. The significance value of 0.001 (less than 0.05) indicates that the overall influence of Internal Inventory Control on Procurement Performance (32.2%) is statistically significant. Adoption of internal inventory control strategies leads to enhanced achievement of objectives set by the procurement function significantly. These findings were in agreement with the findings of Resia et al. (2014) that inventory management system significantly affects procurement effectiveness in the manufacturing sector to a great extent.

4.4. Hypothesis Testing

The hypotheses of the study were tested using t-test. The results of the hypothesis testing results were as presented in Table 4.

The first hypothesis of the study was; HA₁: Inventory Security Practices have significant influence on Procurement Performance of Agrochemicals distributing firms in Nakuru Central Sub County.

From table 4, $t=3.461$ and $p=.001$ (less than 0.05) indicates that Security procedural Practices have significant influence on Procurement Performance of Agrochemicals distributing firms in Nakuru Central Sub County. The null hypothesis was therefore rejected and accepted alternative hypothesis and conclusion made that internal inventory Security Practices significantly influence Procurement Performance of Agrochemicals distributing firms in Nakuru Central Sub County. The study conducted by Saad et al. (2015) similarly revealed that inventory management practices can act as a guideline on what need to be done in order to outperform competitors in terms of procurement and organizational performance by using a proper inventory management practices as a tool. Effective inventory control significantly

affects procurement performance and can be used as a competitive tool in the manufacturing and distributing industry.

Table 4. Table of Coefficients.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.516	.741		.697	.489
1 Internal Security Practices	.348	.101	.446	3.461	.001
Inventory Auditing practices	.187	.128	.185	1.459	.042
Computerized Inventory Control	.341	.118	.375	2.883	.006

a. Dependent Variable: Procurement Performance

The second hypothesis of the study was stated as; HA₂: Inventory auditing practices has significant influence on procurement performance of Agrochemicals distributing firms in Nakuru Central Sub County.

The results in Table 4; $t=1.459$ and $p=.042$ (less than 0.05) implies that Inventory Auditing practices has significant influence on procurement performance of Agrochemicals distributing firms in Nakuru Central Sub County. The second null hypothesis was therefore equally rejected and conclusion made that Inventory Auditing practices significantly influence procurement performance of Agrochemicals distributing firms in Nakuru Central Sub County. Ahmad et al. (2015) in their study established that adoption of inventory management practices enhances procurement efficiency thereby ensuring competitive advantage of the organization.

The last hypothesis of the study was presented as; HA₃: Computerized Inventory Control has significance influence on Procurement Performance of agrochemicals distributing firms in Nakuru central sub county. The research findings presented in table 4; $t=2.883$ and $p=.006$ (less than 0.05) indicates that Computerized Inventory Control has significance influence on Procurement Performance of agrochemicals distributing firms in Nakuru central sub county. These findings formed the basis for rejecting the null hypothesis and subsequent conclusion that Computerized Inventory Control significantly influences Procurement Performance of agrochemicals distributing firms in Nakuru central sub county. Resia et al. (2014) in his study revealed that inventory management system can be used to enhance supplier relation which can in turn significantly enhance supply chain effectiveness and in the long run organizational performance. Mukopi & Iravo (2015) also established in their study that computerised inventory management significantly affects the performance of the procurement function of sugar manufacturing companies in the western sugar belt.

From table 4, the multiple regression models for the study were obtained as follows;

$$Y = .516 + .348X_1 + .187X_2 + .341X_3$$

Where; Y – Procurement Performance

X₁ - Internal Inventory Security Procedural Practices

X₂ - Inventory Auditing

X₃ - Computerized Inventory Control

5. Conclusion and Recommendations

5.1. Conclusions

The first conclusion was made that internal inventory security practices have significant positive influence on procurement performance. Internal inventory security procedural practices enhance efficiency and effectiveness in procurement activities. In addition, the practices provide logical approach to management of inventory security related practices (Chemoiywo, 2014). The second conclusion was made that inventory audit have significant positive influence on procurement performance. Inventory audit ensures timely and adequate identification of inconsistencies and evaluation of inventories (Lewis & Media, 2014). Inventory audits reduce inventory losses and ensure inventory accuracy. In addition, inventory audits enables an organization evade risks associated with inventory such as; inadequate and inappropriate inventory, unnecessarily high inventory levels, inaccurate and incomplete inventory records, poor inventory security and obsolete inventory (Johnstone, 2014). The third conclusion was made that computerized inventory control has significant positive influence on procurement performance. Computerized inventory control management leads to easy storage and retrieval of material, improved sales effectiveness and reduced operational cost. In addition, computerized inventory control and management can be used as economic reforms to enhance customer service for both internal and external customers (Posazhennikova, 2012).

5.2. Recommendations

From the findings and conclusions of the study, the following recommendations are made; Internal Inventory Security Procedural Practices should be considered as one of the strategies for internal inventory control. The Internal Inventory Security Procedural Practices should be developed in a participatory manner between the stores and procurement functions documented and should be well communicated across the organization. Organizations should have internal inventory auditors to prove check and control in the inventory control activities especially on inventory records management. The organizations should also seek the services of external auditors to supplement internal auditors. This not only helps in identification of discrepancies in procurement activities but also reduce chances of such discrepancies from occurring in future. Computerized inventory control can be adopted to enhance inventory records management. In addition, computerized inventory data management can be used to enhance information flow between the organization and its suppliers and customers thereby enhancing customer

service.

From the research findings, conclusions and recommendations, the study recommends further research in the following areas; Study should be conducted to assess how internal inventory security procedural practices can be adopted by public institutions and whether such practices can be incorporated in the public procurement regulations. Secondly, further research should be done to establish the integrated role of internal and external audit in inventory control especially in manufacturing and distributing organizations. Thirdly, further research to be done to determine the influence of computerized inventory management on supplier and customer relationship management in manufacturing and distributing organizations. Lastly, since internal inventory control practices only explain 32.2% of procurement performance, further studies should be conducted to establish other factors that influence procurement performance a part from internal inventory control practices.

References

- [1] Agricultural Sector Development Support Programme. (2014, December 12). Kisumu County. Retrieved November 20, 2015, from Agricultural Sector Development Support Programme: <http://www.asdsp.co.ke/>
- [2] Ahmad, F. S. (2015). The Influence of Inventory Management Practices Towards Inventory Management Performance in Malaysian Public Hospitals. *International Academic Research Journal of Business and Technology*, 1(2)142-148.
- [3] Angel, A. M. (2005). A theory of fluctuations in stock prices. *Physica A*, 363 (2006) 383–392.
- [4] Atkearney (2013). *Procurement Performance Management*. UK: Procurement & Analytic Solution.
- [5] Barnes, D. (2001). *Research Methods for the Empirical Investigation of the Process of Formation of Operations Strategy*. *International Journal of Operations & Production Management*.
- [6] Bartmann D. a. (1992). *Inventory Control: Models and Methods*. New York: Springer-Verlag Berlin Heidelberg.
- [7] Braglia, M. R. (2013). Stock diffusion theory: a dynamic model for inventory control. *International Journal of Production Research*, 51(10).
- [8] Chemoiywo, P. P. (2014). *Public Procurement Procedures and Supply Chain Performance in State Corporations in Kenya*. Nairobi: University of Nairobi.
- [9] Eaton, J. &. (1999). *International Technology Diffusion: Theory and Measurement*. *International Economic Review*, 40(3), 537–570.
- [10] Eckert, S. G. (2007). Inventory Management and Its Effects on Customer. *Journal of Business and Public Policy*, 1-13.
- [11] Education, H. S. (2013). *Warehouse Inventory Control Assessment*. Hawaii: Hawaii State Department of Education.
- [12] Elections Canada. (2010). *Internal Audit; Audit of the Inventory Control Framework*. Canada: Elections Canada.

- [13] European Academy for Taxes, Economics & Law. (2015). How to Audit Public Procurement Effectively. Berlin: European Academy for Taxes, Economics & Law.
- [14] Gerald, F. &. (2009). Resource Dependence Theory: Past and Future. *Research in the Sociology of Organizations*, 2(2)122-34.
- [15] H., P. R. (2005). Managing Disruption Risks in Supply Chains. *Production and Operations Management Society*, 3(2), 12-23.
- [16] Harris, F. W. (1915). *Operations and Cost* (Factory Management Series). A. W. Shaw Company.
- [17] Hurley, G. &. (2000). New Policies for Stochastic Inventory Control Models: Theoretical and Computational Results. *Operations Research*, 1 (1), 1-34.
- [18] Johnstone, K. G. (2014). *Risk Based Approach to Conducting Audit*. South Western Cengage Learning.
- [19] Jolla, G. (2014). Internal Control Practices: Purchasing. Retrieved April 5, 2015, from Blink: <http://blink.ucsd.edu/finance/accountability/controls/practices/purchasing.html>
- [20] Kakwezi, P. &. (2014). Procurement Process and Performance: Efficiency and Effectiveness of the Procurement Function. Kampala: Makerere University.
- [21] Kitaeva, A. S. (2014). Diffusion Approximation in Inventory Management with Examples of Application. Tomsk: National Research Tomsk Polytechnic University.
- [22] Koumanakos, D. P. (2004). The effect of inventory management on firm performance. *International Journal of Productivity and Performance Management*, 57 (5), 355-369.
- [23] Landau, S. &. (2004). *Handbook of Statistical Analysis using SPSS*. Washington DC: Chapman & Hall/CRC Press.
- [24] Liang, Y. (1997). *The Developmet of an Intelligent Inventory Management System*. UK: TIME Research Institute.
- [25] Library and Archives Canada. (2014). Report – Audit of Procurement Practices. Canada: Library and Archives Canada.
- [26] Iwili, T. O. (2013). The Impact of Inventory Management Practices on Financial Performance of Sugar Manufacturing Firms in Kenya. *International Journal of Business, Humanities and Technology*, 3(5), 75-85.
- [27] Mito, C. I. (2015). An Analysis of the Effects of Inventory Management on the Performance of the Procurement Function of Sugar Manufacturing Companies in the Western Kenya S(H., 2005) (H., 2005)ugar Belt. *International Journal of Scientific and Research Publications*, 5(5), 1-14.
- [28] Mugenda, O. &. (2009). *Research Methods; Qualitative and Quantitative Approaches*. Nairobi: ACTS Press.
- [29] Mukopi, C. &. (2015). An Analysis of the Effects of Inventory Management on Performance of the Procurement Function of Sugar Manufacturing Companies in the Western Kenya Sugar Belt. *International Journal of Scientific and Research Publications*, 5(5), 1-14.
- [30] National Food Service Management Institute. (2012). *Inventory Management and Tracking, Reference Guide*. National Food Service Management Institute: The University of Mississippi.
- [31] Neely. (1999). *he Performance Measurement Revolution: Why now and What Next*. *International Journal of operation and production management*, 19(2), 205-228.
- [32] Ngunyi, W. I. (2014). *Procurement Practices and Performance of Parastatals in Kenya*. Nairobi: Univeristy of Nairobi.
- [33] Nyabwanga, R. N. (2012). nventory management practices and businessperformance for small-scale enterprises in Kenya. *businessperformance for small-scale enterprises in Kenya*, 4(1), 11-28.
- [34] Nzuz, Z. W. (2012). Factors affecting the success of inventory control in the Stores Division of the eThekweni Municipality, Durban: a case study. Durban, South Africa: Durban University of Technology.
- [35] Oballah, D. W. (2015). Effect of Inventory Management Practices on Organizational Performance in Public Health Institutions in Kenya: A case of Kenyatta National Hospital. *International Journal of Education and Research*, 3(3), 703-714.
- [36] Ogbo, A. I. (2014). Effective Inventory Control Management on Organisational Performance: A Study of 7up Bottling Company Nile Mile Enugu, Nigeria. *Mediterranean Journal of Social Sciences*, 5(10), 109-118.
- [37] Ogbo, A. O. (2014). The Impact of Effective Inventory Control Management on Organisational Performance: A Study of 7up Bottling Company Nile Mile Enugu, Nigeria. *Mediterranean Journal of Social Sciences*, 5(10), 108-118.
- [38] Ondieki, D. L. (2014). Sampling Techniques. *African Journal of Food Science and Technology*, 5(1), 12-20.
- [39] Oso, Y. W. (2011). *Writing Research Proposal nad Report*. Nairobi: Jomo Kenyatta Foundation.
- [40] Owuoth, G. M. (2015). Effect of Public Procurement Regulations on Procurement Performance in Public Sector Procurement Performance in Knya. A Case of Rural Electrification Authority. *International Journal of Social Sciences Management and Entrepreneurship*, 2(1): 171-184.
- [41] Pgchsm. (2013). *Inventory Control Techniques*. Indian Association of Preventive and Social Medicine.
- [42] Posazhennikova, V. a. (2012). Optimization of total finished goods inventory management in decentralized organisation: A Case Study on Atlas Copco Secoroc AB. Jonkoping: Jonkoping International Business School.
- [43] Resia, V. K. (2014). Effect of Inventory Management on the Supply Chain Effectiveness in the Manufacturing industries in Kenya: A Case of Tata Chemicals. *International Journal of Social Sciences Management and Entrepreneurship*, 1(2); 189-202.
- [44] Sage. (2012). *Inventory Management Overview Document, for Sage 100 ERP*. Sage.
- [45] Score. (2002). *Inventory Control: Why Inventory Control?* Score, Counselors to America's Small Business.
- [46] Sigma. (2011). *Support for Improvement in Governance and Management. A Jount Initiative of the OECD, Principally Fiananced by EU*. Sigma.
- [47] Solutions, P. &. (2013). *Procurement Performance Management Powered by Rosma*. UK: ATKearney.
- [48] SuperCuts. (2014). *Loss Prevention Standards and Practices*. Japan: SuperCuts.

- [49] Swaleh, L. A. (2014). Factors Affecting Effective Implementation of Inventory Management Systems in the Public Sector: A Case of National AIDS Control Council. *International Journal of Social Sciences Management and Entrepreneurship*, 1(2): 17-32.
- [50] Troxell, L. (2015). *UCSC Practices for HIPAA Security Rule Compliance*. California: University of California.
- [51] United States General Accounting Office. (2002). *Best Practices in Achieving Consistent, Accurate Physical Counts of Inventory and Related Property*. GAO.
- [52] Urban, U. (2005). Inventory models with inventory-level-dependent demand: A comprehensive review and unifying theory. *European Journal of Operations Research*, 162(3), 792-804.
- [53] USAID. (2013). *Procurement Performance Indicators Guide: Using Procurement Performance Indicators to Strengthen the Procurement Process for Public Health Commodities*. US: USAID.
- [54] Wangui, I. I. (2014). *Procurement Practices and the Performance of Public Parastatals in Kenya*. Nairobi: University of Nairobi.
- [55] Yamane, T. (1967). *Statistics: An Introductory Analysis*, 2nd Ed. New York: Harper and Row.
- [56] Zycus, Z. (2015). *Procurement Performance Management*. UK: Aatish Media 6.

Biography



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