EFFECT OF INVENTORY CONTROL PRACTICES ON PERFORMANCE OF RETAIL CHAIN STORES IN NAIROBI COUNTY, KENYA

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Abstract: The retail industry, specifically focusing on wholesale and retail, contributes up to a third of the employment in formal and informal establishments in Kenya. In as much as the vision of the wholesale and retail trade sector is to move towards a formal sector, the industry has of late faced changes that have seen a number of large retail chains being affected due to poor performance for instance, Uchumi and Nakumatt. These negative trends in performance of the retail chains are linked to structural inefficiencies in the supply chains and one of the critical challenges facing the retail chains is the inventory practices and arguments that inventory management is an area which requires increased attention because inventories account for more than seventy percent of the total costs of retail chains. Proper inventory management has often been linked to procurement performance and ultimately the overall performance. Since the problem of poor performance in the retail chains sector is also attributed to performance, then an investigation of inventory control management is a consideration. The study therefore established the effect of inventory control practices on performance of retail chain stores in Nairobi County. The study specifically focused on vendor management inventory system, lean practices, inventory stock taking and strategic supplier management practices. A descriptive survey design was adopted for the study. The focus was on all the 144 retail chain stores in the county as indicated in the Nairobi County Report. Primary data was collected using structured questionnaire presented in likert scale. The findings revealed a positive and significant effect of vendor management inventory system, lean practices, inventory stock taking and strategic supplier management practices on performance of retail chain stores in Nairobi County, Kenya. The study recommends that there is a need for retail chain stores as well as other firms that handle inventories to invest in improving their VMI systems by focusing on integration of ICT with inventory functions, invest in improving lean practices such as demand management practices like forecasting, improve on inventory stock taking practices and focus on adoption of strategic supplier management practices.

Key Words: *Vendor Management Inventory System, Lean Practices, Inventory Stock Taking and Strategic Supplier Management Practices*

Introduction

Historically, inventory management has been referred to as excess inventory and inadequate management or shortage of inventory and adequate management practice. Several penalties could be apportioned to excesses in either direction. Inventory problem has escalated as progress in technology increases the ability of organizations to produce goods faster in multiple design variation and greater quality (Letinkaya & Lee, 2010).In recent years, many of the firms have raised the bar in inventory management by coordinating with other firms in their supply chains. For instance, instead of responding to unknown and variable demand, they share information so that the variability of the demand they observe is significantly lower (Jay & Barry, 2016). Horngren, Datar and Forster (2014) states that inventory management is an area which requires increased attention because inventories account for more than 40 percent of the total costs of manufacturing firms and more than 70 percent of the total costs of retail chains (Onyango,2012).Poor inventory management practices leads to either over stocking or under stocking. Any of the two has a negative effect on financial performance of a retail firm.

Overstocking, according to Kotler (2010) requires large space, appropriate storage facilities and substantial amount of funds tied up in the investment and yet the movement of the inventories depends on the speed at which the products are sold. In case of low sales, the movement of inventories becomes slow and the risk of losing items pegged to expiry dates and perishability or obsolescence poses a major concern to firms. Poor financial performance can arise due to losses caused by perishability and expiry of stocks. Kotler (2010) further states that carrying costs might run as high as 30 percent of inventory value. On the other hand, under stocking of inventories reduces the amount tied up while at the same time it increases the risk of running out of stock. It is costly to run out of stock due to possible loss of sales and goodwill. The management therefore has the two costly conflicting areas, overstocking versus under-stocking to contend with and strike a balance. That is the reason why proper inventory management should be the first priority of any retail chain store which aspires to perform better.

Many companies' inventory policy is to hold sufficient finished stock to meet the market demand while minimizing the holding costs and to enable them meet their objectives. Chambers and Lacey (2011) highlights the importance of inventory management in firms by stating that inventory is a very expensive asset that can be replaced with information which is a less expensive asset. It is stated that, to do this, the information has to be accurate, timely, reliable and consistent. When this happens, you carry fewer inventories, reduce cost and get products to customers faster. This therefore implies that inventory management is very important if a company wants to achieve a balance between efficiency and responsiveness. Inventory management involves a trade-off between the costs associated with keeping inventory versus the benefits of holding inventory. The benefit of an inventory is to assure that goods will be available as required. The primary costs of an inventory are the opportunity cost of the capital used to finance the inventory, ordering costs, and storage costs. Inventory management seeks to maximize the net benefit (the benefits minus costs of the inventory) (Chambers & Lacey, 2011).

According to Shim and Siegel (2008), a successful inventory management minimizes inventory, lowers cost and improves profitability hence the managers should appraise the adequacy of inventory levels, which depend on many factors, including sales, liquidity, available inventory financing, production, supplier reliability, delay in receiving new orders, and seasonality. An increase in inventory lowers the possibility of lost sales from stock outs. Inventory levels are also affected by short-term interest rates. As short term interest rates increase, the optimum level of holding inventory is reduced. Inventory is a very critical component in every organization and it requires serious managerial consideration since it ties up a lot of firms' capital. Moving Inventories are essential for keeping the market going and the distribution system intact. According to David and David (2012), these functions include providing a cushion to prevent against stock outs and therefore if there is a constant and efficient supply of inventory, it will reduce the chances of uncertainties or lack of stocks and the costs that relate to stock outs and if this is well achieved, it will enable any firm to attain a competitive advantage over competitors, thus performing well financially. Kontuš (2014) further states that successful inventory management minimizes inventory, lowers cost and improves profitability. An optimal inventory level can be based on consideration of the incremental profitability to the opportunity cost of carrying the higher inventory balances. Ozer (2009) found that effective inventory management was a capability necessary to lead in the global marketplace.

Statement of the Problem

The retail industry, specifically focusing on wholesale and retail, contributes up to 30% of the employment in formal and informal establishments in Kenya. However, the industry has of late faced challenges. Kenya's retail industry has in the recent past experienced fluctuations in performance. A report by Cytons (2016) indicated that despite the potential in the industry, regional retail malls are able to yield up to only 11.7% returns. Similar statistics are reported by African Consumer Insights report (2016) that the market share / penetration rate of retail chains is still low at a figure between 25% - 30%. Uchumi supermarket has experienced frequent stock outs and performance challenges (PWC, 2015). Tusky's Supermarket has often experienced operational inconsistencies (PWC, 2015).

More recently, one of the biggest supermarkets that has dominated the Kenyan market for more than 10 years, Nakumatt, collapsed with debts estimated to be upwards of Sh15 billion. Some of the reasons cited for the failure were poor supplier relationship management that led to high debts on the suppliers. These negative trends in performance of the retail chains are linked to structural inefficiencies in the supply chains as suggested by firm-level analysis based on data from the Census of Industrial Production and the World Bank's Enterprise Survey (2014). Onyango (2012) argued that one of the critical challenges facing the retail chains is the inventory practices and argues that inventory management is an area which requires increased attention because inventories account for more than 70 percent of the total costs of retail chains. Proper inventory management has often been linked to improved performance and ultimately the overall performance (David & David, 2012). Kontuš (2014) also agrees that successful inventory management minimizes inventory, lowers cost and improves profitability. With the fluctuations in the performance of retail chains which are attributed to inventory control, there was a need to conduct a study linking inventory control to the performance of the retail chains.

Objectives of the Study

i.   To establish the effect of vendor management inventory system on the performance of retail chain stores in Kenya
ii. To analyze the effect of lean practices on the performance of retail chain stores in Kenya
iii. To determine the effect of inventory stock taking on the performance of retail chain stores in Kenya
iv. To find out the effect of Strategic Supplier Management Practices on the performance of retail chain stores in Kenya

Literature Review

Theoretical review

Economic Order Quantity (EOQ) Theory

Economic order quantity (EOQ)developed by Ford Harris in 1913 is an inventory management model that aims at minimizing total inventory holding costs and ordering costs. The Economic Order Quantity model of inventory management is used to mark the optimum size of delivery and to choose the cheapest deliverer which guarantees minimization of total costs of investments in inventories. EOQ model is a technique that determines the optimal amount of inventory to order each time the inventory of that item is depleted (Chambers &Lacey, 2011). The Economic Order Quantity (EOQ) model considers the trade-off between ordering cost and storage cost in choosing the quantity to use in replenishing item inventories. A larger order quantity reduces ordering frequency and hence ordering cost, but requires holding a larger average inventory, which increases holding costs. On the other hand, a smaller order-quantity reduces average inventory, but requires more frequent ordering and higher ordering costs.

Lean Theory

The theory was first coined by first coined by John Krafcik in 1988. Lean theory is an extension of ideas of just in time. The theory eliminates buffer stock and minimizes waste in production process (Green & Inman, 2005). Inventory leanness positively affects the profitability of a business firm and is the best inventory control tool. Firms that are leaner than industry average generally see positive returns to leanness (Eroglu & Hofer, 2011). The theory elaborates on how firms gain flexibility in their ordering decisions, reduce the stocks of inventory held on site and eliminate inventory carrying costs. Scholarly studies indicate that companies successfully optimize inventory through lean supply chains practices to achieve high levels of asset utilization and customer satisfaction leading to improved growth, profitability and market share, (Waller, Tangari & Williams, 2008). Criticism leveled against the theory is that it can only be applicable when there is a close and long-term collaboration and sharing of information between a firm and its trading partners.

Theory of Constraints

The theory of constraints is a management philosophy introduced by Eliyahu M. Goldratt in 1984 and seeks to increase manufacturing throughout efficiency measured by sales through the identification of those processes that are constraining the manufacturing system. The difficulties in the theory of constraints are: very long lead times, large number of unfulfilled orders, high level of unnecessary inventories or lack of relevant inventories, wrong materials order, large number of emergency orders and expedition levels, lack of customers engagement, absence of control related to priority orders which implies on schedule conflicts of the resources (Goldratt, 2004).

System Theory of Logistics

Professor Rainer Stank of the Michigan State University proposed that logistics is management of an organization as an integrated whole for the total optimal performance. Rainer Stank believed that organization is the integration of logistical related activities that are working together to achieve lowest total costs and optimum service level as opposed to managing discrete functions individually for the lowest costs. Companies will realize that effective logistics is all about managing the trade-offs (Harrington, 2002). Logistics in business must identify and determine several cost trade-offs in order to provide a positive benefit to the logistics systems as a whole (Rushton *et al*, 2006). The sum of all outcomes is greater than its individual parts. On the other hand, logistics scholars endorsed the relationship of logistics management to the firm logistics capabilities that is determined by the dynamics logistics capabilities. Abrahamson and Mat (2001) argued that extending the Resourced Based View (RBV) to the dynamics capabilities, the firm performance is linked to the dynamic logistics capabilities that is also defined by the operational capabilities. According to Barnleyand Clark (2007), capabilities must meet the essential condition of rare, valuable, inimitability and organizational in order to offer sustainable competitive advantage.

Conceptual Framework
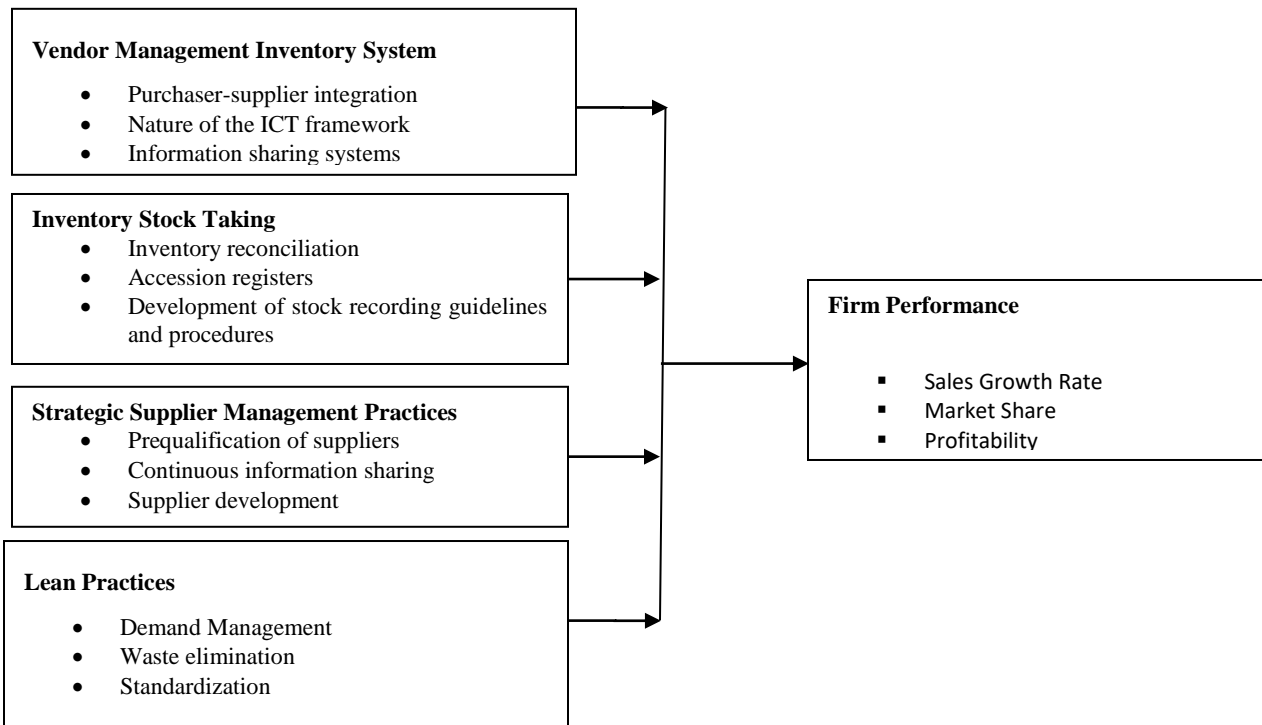
Independent Variables   **Dependent Variable**

Figure 1 Conceptual Framework

Vendor Management Inventory System

Vendor Managed Inventory is a streamlined way to deal with inventory management and request satisfaction whereby the merchant is completely in charge of the recharging of stock in light of opportune POS data to the purchasers (retailer) (Vergin, 2012). This idea builds the client responsiveness by lessening the free market activity hole consequently giving the fulfillment to end client by benefiting the coveted item when required. Store network accomplices must share their vision of interest, necessity, and requirement to set the regular destinations (James, 2008). According to Marquès *et al* (2010), the quality of purchaser-supplier relationship and trust, nature of the Information Communication Technology framework and force of data sharing has a positive effect on VMI execution. Preceding executing VMI, it is essential to examine the level of instability of client interest because a high vulnerability sought after adversely impacts the execution accomplished through VMI. Adeyemi, and Salami, (2010) identify that upstream information exchanged to suppliers such as the current stock level and precise deals conjecture is the most vital element for the effective usage of VMI.

Under VMI contract, the supplier manages inventory for the retailer (or manufacturer) and decides when and how much to replenish. VMI partnership enables the suppliers to make vital decisions regarding inventory replenishment for retailers. This means that the vendor monitors the buyer's inventory levels (physically or via electronic messaging) and makes periodic resupply decisions regarding order quantities, shipping and timing (Vergin, 2012). Indeed, the purchase order acknowledgement from the vendor may be the first indication that a transaction is taking place. Under this situation buyers give up control of key resupply decisions and sometimes even transfer financial responsibility for the inventory to the supplier.

Lean Practices

Wamalwa, Onkware and Musiega (2014) define lean supply chain management as a supply chain operational and tactical management philosophy that uses Internet-enabling innovations to impact the constant recovery of provider and service partner channels. Anand and Kodali, (2008) on the other hand have defined lean supply chain as a strategic way to deal with upgrading quality to the client by identifying and removing waste that is time, exertion and materials through persistent change, by streaming the item at the pull of the client, in quest for flawlessness Lean supply chain management practice is a topic that has had numerous researches in operations management. According to Behrouzi and Wong (2011), lean standards are executed through a few practices which are exercises embraced to realize upgrades in organization, the lean practices are upheld by set of devices and systems. The authors have emphasized the difference between principles, practices, and techniques and try to separate them from one another. It is argued by Ugochukwu *et al* (2012) that due to the connectivity between the three terms, it is difficult to separate them, especially practices and techniques and that some authors use practices, tools and techniques interchangeably.

Inventory Stock Taking

Stock-taking or inventory checking is the physical verification of the quantities and condition of items held in an inventory or warehouse (Alemu, 2014). According to Jessop and Morrison (1994), a stock record system is the means of capturing and storing information and a facility for the analysis and use of this information so that the operation of the stores function and the control of stock can be performed in an efficient manner. They contend that the system of stock recording and the mechanism for the use of recorded information must be very carefully selected. Records and techniques should be appropriate to the items in question and the cost implication taken into account (Alemu, 2014).

An organization should carefully choose the best system suitable to it to avoid a situation whereby a lot of money would be spent on maintaining a very expensive system for items of low value. A stock record system can be manual or computerized. Rauber, Pack, Bogue, Myers, Hanshaw and Ruiz (2003),have highlighted the use of modem technology and argue that computers have the ability to store and retrieve information. They argue that many companies now use computers to hold and constantly update stock records. The computer can in the simplest applications merely replace a set of stock record cards by maintaining a set of information on stock levels and carrying adjustments as necessary when directly instructed (Rauber *et al.,* 2003).

Strategic Supplier Management Practices

Strategic supplier partnership identifies optimum practices that can facilitate supply chain process alignment and integration. In order to further expedite collaboration, it is necessary to implement the latest collaborative information systems that drive efficiencies, performance, and quality throughout a supply chain (Robinson & Malhotra, 2005). Several researchers suggest that effective SCM practice has a direct impact on the overall financial and marketing performance of an organization (Prasad& Tata, 2000).

In fact, SCM practice is expected to increase an organization's market share, return on investment (Shin *et a*l., 2000; Prasad &Tata, 2000), and improve overall competitive position (Stanley & Wisner, 2001). Sila, Ebrahimpourand Birkholz (2006) points that in order to achieve high performance in SCM; companies need to integrate their supply chain partners into their operations.

Firm Performance

Firm performance can be measured in various ways. These may include but not limited to sales growth rate, market share, productivity and profitability (Camisón, & Villar-López, 2014). Sales growth rate is a ratio that measures the rate of change in sales from time to time or a specified period of time. The utilization of historical growth rates is one of the methods of estimating future growth. Market share is the percentage of a market, which may be defined in terms of either units or revenue, accounted for by a specific entity. Market share is a key indicator of market competitiveness, that is, how well a firm is doing against its competitors (Camisón, & Villar-López, 2014). Productivity is a measure of organizational competence and can be viewed as a measure of the efficiency and effectiveness with which resources are used to produce the output of goods and services of the quality needed by consumers and society in the long run (Lin &Wu, 2014). Labour productivity is one of the partial measures of productivity, with the others being materials, energy or capital productivity. Profitability is measured with income and expenses, income is money generated from the activities of the business. Increasing profitability is one of the most important tasks of business managers because a profitable business has the ability to survive and reward its owners (Lin *et al.,* 2014).

Research Methodology

This study employed a descriptive survey design. Descriptive survey is conducted to describe the present situation, what people currently believe, what people are doing at the moment and so forth (Taylor, Bogdan & DeVault, 2015). According to the Nairobi County Statistics published by the Kenya National Bureau of Statistics 2016, there are a total of 144 retail chain stores in the county. This formed the target population of this study. The unit of observation was one procurement officer from each of the 144 retail chain stores. A census was adopted for this study. Furthermore, the census approach is justified since according to Orodho (2009), data gathered using census contributes towards gathering of unbiased data representing all individuals' opinions in the study population on a study problem. Primary data was gathered by use of structured questionnaires and captured through a 5-point Likert scale type while a data collection sheet will be used to collect secondary data

on performance. After data was collected through questionnaires; it was analyzed by the Statistical Package for Social Sciences (SPSS) through descriptive and inferential statistics. A multiple linear regression model was used to test the significance of the influence of the independent variables on the dependent variable. The multiple linear regression models used is shown below.

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e$, Where: Y = Firm Performance, X_1 = Vendor Management Inventory System, X_2= Lean Practices, X_3 = Inventory Stock Taking, X_4 = Strategic supplier management practices and β_0= Constant while $\beta_1, \beta_2, \beta_3$ and β_4 are the coefficients of the four predictor variables (They indicate the change in procurement performance as a result of the change in the predictor variables). *e is the error term* (It indicates the other factors affecting procurement performance)

Results

The number of questionnaires that were administered was 114. A total of 88 questionnaires were responded to. This represented an overall successful response rate of 61%. Mugenda and Mugenda (2003) argue that a return rate of 50% is acceptable.

Demographics Analysis

Table 1 Respondent Demographic Information

Demographic Characteristic	Category	Percentage
Respondent level of education	Secondary	14%
	College	28%
	University	58%
Respondents Work Experience	Below 2 years	35%
	3-5 years	55%
	Above 5 years	10%

Descriptive Findings and Analysis

Vendor Management Inventory System

The findings revealed that majority of the retail chain stores in Kenya have adopted the VMI systems ranging from integration of ICT with inventory functions, enhancing supplier relationship management systems, enhancing purchaser supplier integration systems, investing in Information sharing systems and order confirmation systems to a high extent as shown by average responses of 3.77, 3.83, 3.58, 3.67 and 3.79 which were above 3.50 respectively which are in the range of high extent. More findings also revealed that majority of the retail chain stores have also adopted other VMI system such as investing in cataloguing systems, enhancing point of sale (POS) systems, developing modern store network systems, adoption of electronic messaging by the supplier and enhancing stock tracking systems to a high extent as shown by the mean responses of 3.71, 3.92, 3.83, 3.77 and 3.63 respectively which are in the range of high extent. Average overall response rate of 3.75 indicates that there is adoption of VMI systems to a high extent among the retail chain stores in Kenya.

Table 2 Vendor Management Inventory System

Statements	Mean	Std Dev
Integration of ICT with inventory functions	3.77	1.29
Enhancing supplier relationship management systems	3.83	1.31
Enhancing purchaser supplier integration systems	3.58	1.34
Investing in Information sharing systems	3.67	1.31
Investing in order confirmation systems	3.79	1.28
Investing in cataloguing systems	3.71	1.28
Enhancing point of sale (POS) systems	3.92	1.17
Developing modern store network systems	3.83	1.17
Adoption of electronic messaging by the supplier	3.77	1.20
Enhancing stock tracking systems	3.63	1.30
Average	**3.75**	**1.27**

Lean Practices

The results established a high extent of adoption of demand management practices such as forecasting, waste elimination practices, standardization of goods, seamless collaboration to avoid wastage and sourcing of client need data as shown by a mean response of 3.71, 3.76, 3.68. 3.79 and 3.80. It was also revealed that the adoption of value stream analysis, workplace organization, continuous improvement of systems in order to avoid wastes, continuous inspection to eliminate waste and streamlined sales has been adopted by retail chain stores to a high extent as indicated by the mean responses of 3.68, 3.81, 3.76, 3.75 and 3.69 respectively. On average, the findings showed that adoption of lean practices among retail chain stores has been adopted to a high extent as shown by an average mean response of 3.74.

Table 3 Lean Practices

Statements	Mean	Std Dev
Demand management practices such as forecasting	3.71	1.33
Waste elimination practices	3.76	1.16
Standardization of goods	3.68	1.33
Seamless collaboration to avoid wastage	3.79	1.22
Sourcing of client need data	3.80	1.23
Value stream analysis	3.68	1.24
Continuous inspection to eliminate waste	3.75	1.23
Streamlined sales	3.69	1.26
Average	**3.74**	**1.26**

Inventory Stock Taking

The findings revealed that among the inventory stock taking practices that have been adopted to a high extent is development of new accession register for stocks to replace the old one, entering records captured into the automated system, taking stock differences daily, frequent stock reconciliation and development of stock recording guidelines and procedures as shown by mean responses of 4.12, 3.98, 3.81, 4.78 and 4.81 respectively. It was also established that other inventory stock taking practices that are practiced to a high extent by the retail chain stores is receiving staff acknowledges the receipt of stocks on a form before forwarding to accounts section, documentation of all goods in the store by assigning them barcode numbers, barcoding all new stocks before being shelved for easy tracking, verification of issue request before issuing stocks and keeping of supplies documents in a secure place where only authorized staff can access as shown by mean responses of 3.74, 4.98, 4.89, 4.34 and 4.14 respectively. On average, the findings revealed that inventory stock taking is practiced to a high extent among retail chain stores in Kenya as indicated by the overall mean response of 4.36.

Table 4 Inventory Stock Taking

Statements	Mean	Std Dev
Development of new accession register for stocks to replace the old one	4.12	0.98
Entering records captured into the automated system	3.98	1.11
Taking stock differences daily	3.81	1.30
Frequent stock reconciliation	4.78	0.89
Development of stock recording guidelines and procedures	4.81	0.65
Receiving staff acknowledges the receipt of stocks on a form before forwarding to accounts section	3.74	1.10
Documentation of all goods in the store by assigning them barcode numbers.	4.98	0.22
Barcoding all new stocks before being shelved for easy tracking	4.89	0.30
Verification of issue request before issuing stocks	4.34	0.86
Keeping of supplies documents in a secure place where only authorized staff can access	4.14	0.48
Average	**4.36**	**0.79**

Strategic Supplier Management Practices

The study findings presented revealed that there is adoption of strategic supplier management practices such as suppliers pre-qualification before they are contracted to supply, establishing a close partnership between the company and their suppliers, having continuous information sharing between the company and suppliers, having a better channel relationship between the suppliers and the firm and integrating suppliers into the existing policies on inventory management as shown by average response mean of 3.68, 3.70, 3.85, 3.68 and 3.88 respectively on a scale of 1 to 5. The findings also revealed that majority of retail chain stores have adopted a well-established communication systems with the suppliers and conduct performance assessment of the suppliers routinely to enhance their performance to a high extent as shown by average mean responses of 3.56 and 3.61 respectively.

On the other hand, development of supplier through technical training, organizing quality assessment of the suppliers production system and developing suppliers financially offering them credit where possible is being practiced to a moderate extent among the retail chain stores as shown by mean responses of 3.33, 3.23 and 3.34 respectively. On average, adoption of strategic supplier management in retail chain stores has been done to a high extent as shown by an average mean response of 3.59.

Table 5 Strategic Supplier Management Practices

Statements	Mean	Std Dev
Suppliers are normally pre-qualified before they are contracted to supply	3.68	1.33
There is a close partnership between the company and their suppliers.	3.70	1.22
There is continuous information sharing between the company and suppliers	3.85	1.19
There is a better channel relationship between the suppliers and the firm	3.68	1.25
Suppliers are usually integrated into the existing policies on inventory management	3.88	1.22
The is well established communication systems with the suppliers	3.56	1.17
The company develops supplier through technical training	3.33	1.31
The company organizes quality assessment of the suppliers production system	3.23	1.30
The company develops suppliers financially offering them credit where possible	3.34	1.22
Performance assessment of the suppliers is conducted routinely to enhance their performance	3.61	1.41
Average	**3.59**	**1.26**

Performance of Retail Chains

The results revealed that majority of the retail chain stores revealed that their market share has considerably expanded, the profitability of the firm has significantly increased, the firm's branches has increased and their number of employees has increased to a high extent as shown by their mean responses of 3.67, 3.53, 3.51 and 3.73 respectively. The findings however revealed that improvement in the sales turnover returns on investments, an increase in the number of products and enhancement of the overall firm productivity has improved to a moderate extent. On average, the performance of the retail chain stores has improved to a moderate extent as shown by an average response of 3.48. These findings are consistent with a report by Cytons (2016) which indicated that despite the potential in the industry; regional retail malls are able to yield up to only 11.7% returns. Similar statistics are reported by African Consumer Insights report (2016) that the market share / penetration rate of retail chains is still low at a figure between 25% - 30%.

Table 6 Performance

Statement	Mean	Std Dev
The firm market share has considerably expanded	3.67	1.27
There has been an improvement in the sales turnover	3.23	1.21
Productivity of the firm has been enhanced	3.40	1.16
The profitability of the firm has significantly increased	3.53	1.31
The firms returns on investments has improved	3.33	1.20
The firms branches has increased	3.51	1.19
The firms number of products has increased	3.47	1.24
There has been an increase in the number of employees	3.73	1.22
Average	**3.48**	**1.22**

The study sought to establish the sales turnover of the retail chain stores on a range of below 25 million to above 35illion every year for the last five years. The findings revealed that the changes between the years has been inconsistent between the four scales. But what has remained clear is the responses regarding above 35 million sales turnover where only less than 20% of the retail chain stores have management to maintained over the years. This perhaps signals the competitive environment under which retail chains operate in. It also justifies the statement of the problem that the performance of the retail chains has not been good over the years (Cytons (2016)

Table 7 Performance of Sales Turnover

Statement	Below 15 Million	Between 16 and 25 Million	Between 26 and 35 Million	Above 35 Million
2013	23%	25%	41%	11%
2014	26%	22%	45%	7%
2015	25%	29%	42%	4%
2016	27%	23%	45%	5%
2017	23%	26%	43%	8%

The study further sought to establish the sales turnover of the retail chain stores on a range of below 25 million to above 35 million every year for the last five years. The findings revealed that, just like the sales turnover, the changes between the years have been inconsistent between the four scales. Consistently though, is the result that majority of the retail chain stores have recorded between 26 and 35 million over the years. This also justifies the previous findings of moderate extent in the change in profits of the retail chain stores over the years. It justifies the statement of the problem that the performance of the retail chains has not been good over the years (Cytons (2016).

Table 8 Performance of Profits

Statement	Below 15 Million	Between 16 and 25 Million	Between 26 and 35 Million	Above 35 Million
2013	20%	27%	38%	15%
2014	23%	20%	42%	15%
2015	22%	26%	40%	12%
2016	30%	19%	42%	9%
2017	19%	27%	38%	16%

Correlation analysis

The correlation findings are presented in Table 9.

Table 9 Correlation Tests Results

		VMI Inventory System	Lean Practices	Inventory Stock Taking	Strategic Supplier Management	Performance
VMI Inventory System	Pearson Correlation	1				
Lean Practices	Pearson Correlation	.475	1			
Inventory Stock Taking	Pearson Correlation	0.205	.636	1		
Strategic Supplier Management	Pearson Correlation	.228	.426	.601	1	
Performance	Pearson Correlation	0.264	.718	.803	.655	1
	Sig. (2-tailed)	0.047	0.000	0.000	0.000	
	N	88	88	88	88	88

The findings reveal that the effect of vendor management inventory system on performance of the retail chain stores is positive and significant (Pearson Coefficient = .264, Sig = 0.020, <0.05). This implies that an improvement in vendor management inventory system leads to an improvement in performance of retail chain stores. Furthermore, it was established that the effect of lean practices on performance of the retail chain stores is positive and significant (Pearson Coefficient = .718, Sig = 0.000, <0.05). This implies that an improvement in lean practices leads to an improvement in performance of retail chain stores. The study tested the implementation of Just in time and technology and innovation use by interviewing senior managers in two hundred and five firms. Using regression analysis they concluded that long term implementation of lean supply results in improvement on business performance.

The findings also indicated that the effect of inventory stock taking on performance of the retail chain stores is positive and significant (Pearson Coefficient = .803, Sig = 0.000, <0.05). This implies that an improvement in

inventory stock taking leads to an improvement in performance of retail chain stores. The findings urther revealed that the effect of Strategic Supplier Management Practices on performance of the retail chain stores is positive and significant (Pearson Coefficient = .655, Sig = 0.000, <0.05). This implies that an improvement in Strategic Supplier Management Practices leads to an improvement in performance of retail chain stores.

Multivariate Regression Analysis

The results presented in Table 8 revealed that the joint correlation value of all the four variables on performance of retail chain stores (R) was .885. This reveals that jointly inventory control practices (VMI Inventory System, Lean Practices, Inventory Stock Taking and Strategic Supplier Management) have a positive and strong effect on performance of retail chain stores in Kenya. This is consistent with David and David (2012) who argued that proper inventory management has often been linked to improved performance and ultimately the overall performance. It is also consistent with Kontuš (2014) who agrees that successful inventory management minimizes inventory, lowers cost and improves profitability of firms. The findings also present the coefficient of determination (R-square) which captures a percentage change in performance of retail chains attributed to inventory control practices that is VMI Inventory System, Lean Practices, Inventory Stock Taking and Strategic Supplier Management. The value of R-square is 0.783 which reveals that inventory control practices that is VMI Inventory System, Lean Practices, Inventory Stock Taking and Strategic Supplier Management account for up to 78.3% of the variations in performance of the retail chain stores in Kenya.

It can conclusively be said that the remaining percentage, that is, 21.7% of the variation in performance of retail chain stores is attributed to other factors other than inventory control practices that is VMI Inventory System, Lean Practices, Inventory Stock Taking and Strategic Supplier Management studied in this study. This finding is consistent with Horngren, Datar and Forster (2014) who argued that inventory management accounts for up to 70% of total costs of retail chains which can translate to a similar or more figure on overall performance.

Table 10 Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.885	0.783	0.773	0.2554

Predictors: (Constant), Strategic Supplier Management, VMI Systems, Lean Practices, Inventory Stock Taking

There was also a need to establish the model significance / fitness of the regression model linking inventory control practices to performance of retail chain stores in Kenya. This was done by analysis of variance which indicates that the F calculated value of 75.055 was significant at 55 level of significance (Sig = 0.000, < 0.05). In collaborations with F critical against F calculated, it was established that F calculated (75.055) is greater than F critical $_{(4, 83, 0.05)}$ of 2.482 which confirms the same findings. This reveals that the regression model which links inventory control practices (VMI Inventory System, Lean Practices, Inventory Stock Taking and Strategic Supplier Management0 to performance was significant and fit the data set well.

Table 11 Analysis of Variance (Model Significance)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	19.586	4	4.896	75.055	.000
Residual	5.415	83	0.065		
Total	25.001	87			

Dependent Variable: Performance of Retail Chain Stores

Predictors: (Constant), Strategic Supplier Management, VMI Systems, Lean Practices, Inventory Stock Taking

The regression coefficient findings revealed a constant value of -1.057 which indicates that the predicted performance of retail chains when inventory control practices (Strategic Supplier Management, VMI Systems, Lean Practices, Inventory Stock Taking) are zero or absent, is -1.057. This implies that the performance of retail chains would be worse-off without inventory control practices. This is consistent with Onyango (2012) who indicated that poor inventory management practices or lack of it altogether, leads to either over stocking or under stocking which in turn has a negative effect on financial performance of a retail firm. The findings also reveals a positive and significant relationship between VMI systems and performance of retail chain stores in Kenya (B = 0.153, Sig = 0.002, <0.05). The findings also showed a positive and significant relationship between lean practices and performance of retail chain stores in Kenya (B = 0.632, Sig = 0.000, <0.05). This finding implies that when lean practices increases by 1 unit, it leads to a 0.632 unit increase in performance of retail chain stores in Kenya.

The regression findings further showed a positive and significant relationship between inventory stock taking and performance of retail chain stores in Kenya (B = 0.405, Sig = 0.000, <0.05). This finding implies that when inventory stock taking increases by 1 unit, it leads to a 0.632 unit increase in performance of retail chain stores in Kenya. Lastly the findings showed a positive and significant relationship between strategic supplier management and performance of retail chain stores in Kenya (B = 0.344, Sig = 0.000, <0.05). This finding implies that when strategic supplier management increases by 1 unit, it leads to a 0.632 unit increase in performance of retail chain stores in Kenya.

Table 12 Regression Coefficients Results

Predictors	Unstandardized Coefficients		Standardized Coefficients		
Predictors	B	Std. Error	Beta	t	Sig.
(Constant)	-1.057	0.350		-3.02	0.003
VMI System	0.153	0.047	0.193	3.272	0.002
Lean Practices	0.632	0.107	0.440	5.917	0.000
Inventory Stock Taking	0.405	0.078	0.398	5.214	0.000
Strategic Supplier Management	0.344	0.081	0.273	4.225	0.000

Conclusion

The study concluded that adoption of VMI systems such as integration of ICT with inventory functions, enhancing supplier relationship management systems, enhancing purchaser supplier integration systems, investing in Information sharing systems, order confirmation systems, investing in cataloguing systems, enhancing point of sale (POS) systems, developing modern store network systems, adoption of electronic messaging by the supplier and enhancing stock tracking systems leads to a significant improvement in firm performance. The study also concluded that adoption of lean practices such as demand management practices such as forecasting, waste elimination practices, standardization of goods, seamless collaboration to avoid wastage, sourcing of client need data, adoption of value stream analysis, workplace organization, continuous improvement of systems in order to avoid wastes, continuous inspection to eliminate waste and streamlined sales leads to a significant improvement in performance of a firm.

It was also concluded that adoption of inventory stock taking practices such as development of new accession register for stocks to replace the old one, entering records captured into the automated system, taking stock differences daily, frequent stock reconciliation, development of stock recording guidelines and procedures, receiving staff acknowledging the receipt of stocks on a form before forwarding to accounts section, documentation of all goods in the store by assigning them barcode numbers, barcoding all new stocks before being shelved for easy tracking, verification of issue request before issuing stocks and keeping of supplies documents in a secure place where only authorized staff can access enhances the performance of a firm significantly. The study further concluded that adoption of strategic supplier management practices such as suppliers pre-qualification before they are contracted to supply, establishing a close partnership between the company and their suppliers, having continuous information sharing between the company and suppliers, having a better channel relationship between the suppliers and the firm and integrating suppliers into the existing policies on inventory management as well as having a well-established communication systems with the suppliers and conducting performance assessment of the suppliers routinely will enhance the performance of a firm significantly.

Recommendations of the Study

There is a need for retail chain stores as well as other firms that handle inventories to invest in improving their VMI systems so as to enhance performance. Some of the VMI activities to focus on is integration of ICT with inventory functions, enhancing supplier relationship management systems, enhancing purchaser supplier integration systems, investing in Information sharing systems, order confirmation systems, investing in cataloguing systems, enhancing point of sale (POS) systems, developing modern store network systems, adoption of electronic messaging by the supplier and enhancing stock tracking systems. There is a need for retail chain stores as well as other firms that handle inventories such as manufacturing firms to invest in improving their lean practices so as to enhance performance. Some of the lean practices to focus on is demand management practices such as forecasting, waste elimination practices, standardization of goods, seamless collaboration to avoid wastage, sourcing of client need data, adoption of value stream analysis, workplace organization, continuous improvement of systems in order to avoid wastes, continuous inspection to eliminate waste.

There is a need for retail chain stores as well as other firms that handle inventories such as manufacturing firms to invest in improving their inventory stock taking practices so as to enhance performance. Some of the practices to focus on is development of new accession register for stocks to replace the old one, entering records captured into the automated system, taking stock differences daily, frequent stock reconciliation, development of stock recording guidelines and procedures, receiving staff acknowledging the receipt of stocks on a form

before forwarding to accounts section, documentation of all goods in the store by assigning them barcode numbers, barcoding all new stocks before being shelved for easy tracking, verification of issue request before issuing stocks and keeping of supplies documents in a secure place where only authorized staff can access. Retail chain stores and other firms in the same line of business should consider improving their strategic supplier management practices as a way of improving their performance. There is a need to focus on adoption of strategic supplier management practices such as suppliers pre-qualification before they are contracted to supply, establishing a close partnership between the company and their suppliers, having continuous information sharing between the company and suppliers, having a better channel relationship between the suppliers and the firm and integrating suppliers into the existing policies on inventory management as well as having a well-established communication systems with the suppliers and conducting performance assessment of the suppliers routinely.

Conflict of Interest

No potential conflict of interest was reported by the authors.

References

Abdallah, A. B., & Matsui, Y. (2007, May). The relationship between JIT production and Manufacturing strategy and their impact on JIT performance. In *Proceedings of the 18th Annual Production and Operations Management Society (POMS) Conference, Dallas*.

Abrahamson, M, & Sandberg, E., (2011), Logistics Capabilities for Sustainable Competitive Advantage, *International Journal of Logistics*, (14) 1, 61-75).

Adeyemi, S. L. & Salami, L. O. (2010). Inventory management: A tool for optimizing resources in a manufacturing industry. *Journal of Social Science*, 23(2); 135-142.

Alvesson, M., & Sköldberg, K. (2017). *Reflexive methodology: New vistas for qualitative research*. Sage.

Anand, G., & Kodali, R. (2008). A conceptual framework for lean supply chain and its implementation. *International Journal of Value Chain Management*, *2*(3), 313-357.

Bai, L., &Zhong, Y. (2008).Improving Inventory Management in Small Business: A Case Study.

BarnleyA. G.& Clark G F, (2007).Logistics management practices and performance of liquefied petroleum Gas firms. *International Journal of Production Economics,* 115, 581-593.

Beamon, B. & Kotleba, S. (2006). Inventory modeling for complex emergencies in humanitarian relief operations, *International Journal of Logistics: research and applications*, 9(7), 1 - 18

Camisón, C., & Villar-López, A. (2014). Organizational innovation as an enabler of technological innovation capabilities and firm performance. *Journal of business research*, *67*(1), 2891-2902.

Chambers, D. &Lacey, N. (2011). Modern Corporate Finance, Sixth Edition, Michigan: Hayden McNeil Publishing.

Christensen, L. B., Johnson, B., Turner, L. A., & Christensen, L. B. (2011). Research methods, design, and analysis.

Christensen, P., & James, A. (Eds.). (2008). *Research with children: Perspectives and practices*. Routledge.

Churchill, G. A., & Iacobucci, D. (2006). *Marketing research: methodological foundations*. New York: Dryden Press.

Denzin, N. K., & Lincoln, Y. S. (2008). *The landscape of qualitative research* (Vol. 1). Sage.

Eroglu, C. and Hoper, C. (2011).Lean, Leaner and Too lean? The inventory performance link revisited. *Journal of Operations management*, 29, 356-369.

Etale, L. M., & Bingilar, P. F. (2016). The Effect of Inventory Cost Management on Profitability: A Study of Listed Brewery Companies in Nigeria. *International Journal of Economics, Commerce and Management United Kingdom*, *4*(6).

Finchman, C. M. (2012). Best practices for survey research reports: a synopsis for authors and reviewers. *American journal of pharmaceutical education*, *72*(1), 11-16.

Fixsen, D. L., Naoom, S. F., Blase, K. A., &Friedman, R. M. (2015). Implementation research: a synthesis of the literature.

Gakinya, F. N. (2013). Inventory Management Practices And Productivity Of Large Manufacturing Firms In Nairobi, Kenya (Masters dissertation, University of Nairobi).

Goldratt, E. M. (2004). The goal: a process of ongoing improvement (Vol. 3). Great Barrington^ eMA MA: North River Press.

Harris, P. A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., & Conde, J. G. (2009). Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *Journal of biomedical informatics*, *42*(2), 377-381.

Homgern, C.T, Datar S.M & George F. (2014).Cost Accounting. New Delhi: Prentice- Hall of India.

James, H. (2008). Inventory Management and Purchasing often overlooked as a profit center, Construction Equipment distribution Magazine.

Jay, H., & Barry, R. (2016).Principles of Operations Management.6th Edition.New Jersey; Pearson Prentice Hall, Education Inc.

Jepchumba, N., & Ismail, N. (2015). Role of vendor managed inventory on supply chain performance in milk processing firms in Kenya: A case of New Kenya Cooperative Creameries. *International Academic Journal of Procurement and Supply Chain Management*, *1*(4), 12-21.

Keitany, P., & Riwo-Abudho, M. (2014). Effects of lean production on organizational performance: a case study of flour producing company in Kenya. *Eur J Logistics Purchasing Supply Chain Mgmt*, *2*(2), 1-14.

Kinyua, B. K. (2015). An assessment of just in time procurement system on organization performance: A case study of corn products Kenya limited. *European Journal of Business and Social Sciences*, *4*(05), 40-53.

Marquès, G., Thierry, C., Lamothe, J., & Gourc, D. (2010). A review of vendor managed inventory (VMI): from concept to processes. *Production Planning & Control*, *21*(6), 547-561.

Mathai, A. (2012). "Relationship between working capital management and profitability of retail supermarket chains in Kenya". *Unpublished MBA project*. University of Nairobi.

Mugenda, O. M., & Mugenda, G. A.(2003). *Research methods Quantitative and Qualitative Approaches. Nairobi: ACTS*.

Mwangi, M. E. (2013). An Assessment of the Effectiveness of Stock Records System; Ministry of Public Works, Kenya. *International Journal of Business and Commerce*. 3(5) 36-40.

Orodho, J. A. (2009). Elements of education and social science research methods. *Nairobi/Maseno*, 126-133.

Qureshi, M. I., Iftikhar, M., Bhatti, M. N., Shams, T., & Zaman, K. (2013). Critical elements in implementations of just-in-time management: empirical study of cement industry in Pakistan. *Springer Plus*, *2*(1), 645.

Rahman, S., Laosirihongthong, T., & Sohal, A. S. (2010). Impact of lean strategy on operational performance: a study of Thai manufacturing companies. *Journal of manufacturing technology management*, *21*(7), 839-852.

Sekaran, U., & Bougie, R. (2010). Research methods for business: A skill building approach . Chichester: John Willey & Sons Ltd. *2010*.

Shim, J. K. &Siegel, J. G. (2008). Financial Management, New York: McGraw Hill.

Sila, I., Ebrahimpour, M., & Birkholz, C. (2006). Quality in supply chains: an empirical analysis. *Supply Chain Management: An International Journal*, *11*(6), 491-502.

Smith, J. A. (Ed.). (2015). *Qualitative psychology: A practical guide to research methods*. Sage.

Smith, L. T. (2013). *Decolonizing methodologies: Research and indigenous peoples*. Zed Books Ltd.

Song, J. & Zipkin, P. (2011). Inventory control with information about supply condition, Management Science 42, 1409-1419.

Sounders, M., Lewis, E., & Thornhill, A. (2009). Research Methods for Business Students (ed.). *England: Pearson Hall*.

Taylor, S. J., Bogdan, R., & DeVault, M. (2015). *Introduction to qualitative research methods: A guidebook and resource*. John Wiley & Sons.

Voleza, A. D. (2014). Factors Influencing Implementation Of Just In Time Procurement in Public Institutions: A Case of Office of the Attorney General and Department Of Justice. *International Journal of Academic Research in Business and Social Sciences*, *4*(6), 303.

Waller, M. A., HeintzTangari, A., & Williams, B. D. (2008). Case pack quantity's effect on retail market share: An examination of the backroom logistics effect and the store-level fill rate effect. *International Journal of Physical Distribution & Logistics Management*, 38(6), 436-451.

Zer, O. & Wei, W. (2006). Strategic commitment for optimal capacity decision under asymmetric forecast information, *Management Science*, 52, 8, 1239-1258.