INFLUENCE OF SUPPLY CHAIN AUTOMATION ON INVENTORY CONTROL IN PUBLIC ACADEMIC INSTITUTIONS. A CASE OF KAIMOSI FRIENDS UNIVERSITY COLLEGE, KENYA

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ABSTRACT

This study sought to investigate the influence of supply chain automation on inventory management in KAFUCO, Kenya. The study used descriptive survey design and census method to select all targeted respondents in inventory management at KAFUCO, comprising procurement officers, auditors, financial officers, accountants, ICT officers, storekeepers and consumer department heads. The researcher used systematic questionnaires to gather the primary information. Inferential statistics such as correlations, linear and multiple analyses was computed by SPSS 24. The findings were that Kaimosi University College's inventory control was strongly influenced by the electronic store management. The regression results also revealed a positive and important relationship between the electronic store management and the inventory control. Results revealed that electronic supplier Management highly influenced inventory Control of Kaimosi University College. The correlation results revealed that Electronic Supplier Management had a positive and significant relationship with inventory Control measured by inventory turnover. Results revealed that electronic inventory control highly influenced the inventory Control of Kaimosi University College. The correlation results revealed that Electronic inventory control had a negative and significant relationship of Kaimosi University College measured by inventory turnover. Results revealed that Inventory Information System highly influenced the inventory Control of Kaimosi University College. The results of the analysis showed that the inventory information system had a positive and meaningful inventory management relationship calculated by the turnover of the inventory. The study recommended that managers of Kaimosi University College be trained in electronic store management to establish an effective electronic system to improve inventory control. The management should also consider pursuing professional advice on electronic device management. The study recommended that Kaimosi University College capitalize on the electronic supplies available for cost-saving purposes. This will make them operationally and financially viable. Kaimosi University College was recommended to enhance its electronic inventory management by recruiting qualified staff and providing on-the-job training courses to fully educate staff on device matters. The study recommended that Kaimosi University College should give up-to-date and faster inventory information system for easy operations. That would make time and efficiency savings.

***Key Words:** Electronic Store, Electronic Supplier, Electronic Inventory, Inventory Information System*

INTRODUCTION

According to Christopher (2015), inventory control is one of the policies, practices and procedures followed by an organization to ensure that its inventory is maintained at levels consistent with set service standards. Inventory control is an art basically concerning the amount of inventoryed goods. The scope of inventory control is focused on replenishment, keeping expenditures, asset tracking, inventory forecasting, inventory visibility, future inventory price forecasting and usable physical inventory, quality management, replenishment, returns and faulty goods and demand forecasting. Although juggling this important results in full inventory levels, it is an evolving process as business needs change and a wider environmental reach.

Inventory handled on time and by the vendor maximizes on reducing inventory on hand and improves inventory turns (Ouyang, 2018). Inventory control also includes system and procedure for defining inventory requirements, set goals for reporting the real and expected inventory status of replenishment techniques and performing all functions related to monitoring and controlling inventory material management, With the primary objective of assessing or managing stock levels within the physical distribution system, the need for product availability is balanced against the need to optimize inventory keeping and handling costs (Chandra, 2014).

Inventory control entails all the combined management of those internal entities associated with the access, storage, issue, use and internal distribution of stock used in the production and provision of services. It is the process of establishing the rate, the quantities and the procedures of materials to be stock in a company and procedures of receipts and issues of those stocks (Sople, 2018). Many entities both private and public and have had a consistent challenge in ascertaining the right stock levels hence computerizing their systems so as to achieve a balance between effectiveness and efficiency (Shin, 2017).

Generally, the use of computerized inventory control systems has had little application in most companies. This has resulted in problems that come as a result of stock-outs and stoppage in stock flow (Ogbo, 2011). This in turn leads to dead stock and the entities end up having huge losses associated with opportunity costs precisely with holding inventory (Wolcott, 2017).

Several studies in Kenya have indicated that Information Communication Technology (ICT) is used as a strategic tool which makes an organization take advantage of stock (Wolcott, 2017). Its noted e-commerce in Kenya will help businesses to maintain their market share in today's competitive world. There are dimensions that are deemed vital for Kenyan industries to handle stock taking over rivals from business. According to Gowen & Tallon, (2018) these dimensions include: supporting efficiency of activity, basic efficiency of activity, applicability of resource management, applicability of resource purchase, response to threats, preventive and synergy. These attributes form a basic guide for Kenyan businesses to gain an internationally competitive name. This position has been achieved since Kenya is fast gaining a competitive edge in mobile payments around the world. This was spearheaded by giant mobile operator Safaricom with their Mpesa as their online money transaction product, with the market seeing large numbers in mobile money transactions locally. This, applied to a legal framework that is properly regulated to promote stock keeping, provides a large space for great things to come about. This has been noted around the world and has prompted stakeholders to pay full attention to the occurrences and innovations in the Kenyan business sector (Gowen & Tallon, 2018).

Statement of the Problem

In order to automate and efficiently control stocks, a variety of programs have been established to ensure that companies keep the right quantities of stocks to maintain a balance between the costs involved and customer satisfaction. These systems include material requirement preparation,

inventory management by suppliers, radio frequency recognition, business resource planning, electronic point of sale, automated inventory modeling, and electronic procurement (Sople, 2018).

David (2016) also noted that stock is a very expensive asset that can be replaced with less costly asset information but, in this case , the information must be accurate , timely, reliable and consistent in order to bring less inventories, achieve cost reduction and get goods to consumers quicker and more manageable. This also means that stock management for an enterprise that is oriented towards productivity and responsiveness is very critical. A few empirical researchers have also reported that more research on inventory management is required for companies to achieve efficiencies, with the management's desire to reduce inventory investments for example, long manufacturing runs tend to generate inventories; advertisers want inventories of a broader range of goods and choices to satisfy a wide demand from the consumers. High inventory levels often take up space in factories and distribution centers, thus incurring additional stock, insurance and so on. The convergence of these competing factors is a noble task of inventory management which has proven troublesome in many public corporations (Wolcott, 2017).

Ngei and Kihara (2017) studied on automated inventory control systems used in corporates that manufacture Gas in Nairobi City County. This study used both secondary and primary data, and was analyzed using inferential statistics specifically multiple regressions. Results revealed that vendor managed inventory, enterprise resource planning, radio frequency identification and electronic procurement significantly affected performance of corporates manufacturing gas. This study went further to explain different concepts to define automated inventory control. Secondly, this study was done in gas manufacturing in Nairobi County, which is a different industry hence research gap.

The present study will be done in Vihiga County, Kaimosi Friends University College.

Wachira and Ngutu (2015) also did an analysis of automated stock control systems in parastatals in Kenya, and found that use of information communication technology systems in inventory control really improves inventory control by saving huge costs associated with manual inventory control systems. The study was concentrated on automated stock systems, while the present study will analyze how automated inventory system influence inventory control in Kaimosi Friends University College. Mukopi and Iravo (2015) also analyzed effects of automated inventory control on performance from a sugar sector perspective. The study used 30 procurement personnel drawn from a target population of 100 personnel in Sugar corporates in Western Kenya. Using ANOVA the study established that among other variables, information communication technology was a significant factor in automated inventory system management. The present study will be done in the higher education sector as opposed to manufacturing.

Kitheka and Ondiek (2014) also investigated on automation in the management in super markets operating in Western Kenya. The study used a descriptive survey design and targeted supermarkets operating in Kisumu, Kakamega and Bungoma towns. Regression analysis results revealed that automation of inventory control had a direct linear impact on performance of the supermarkets and recommended a further research in non-profit making organizations so as to compare results. The present study will be done in higher education sector. However, most studies on automated inventory control are have focused on profit making corporates with little regard to non-profit making organizations which too require automated inventory control to save on costs and improve service delivery. Thus automation in this study will be applied in a public organization (Kaimosi Friends University College) which is not profit making but require effective inventory

control which must have a strong and effective automated inventory system capable of handling all automated inventory data and in the long run appreciate many benefits associated with automated inventory control .

Further there are scanty empirical studies on the use of ICT framework on inventory control, a gap that motivated this study to investigate the influence of e-store management, e-supplier management, electronic inventory modelling and electronic inventory information system capability on inventory control in Kaimosi Friends University College Kenya.

Objective of the study

The general objective of the study was to investigate the influence of supply chain automation on inventory Control in KAFUCO, Kenya. The specific objectives were;

- To examine the influence of electronic store management on inventory Control in KAFUCO, Kenya
- To evaluate the influence of electronic supplier management on inventory Control in KAFUCO, Kenya
- To determine the influence of electronic inventory on inventory Control in KAFUCO, Kenya
- To assess the influence of inventory information system on inventory Control in KAFUCO, Kenya

The research was guided by the following hypotheses

- H_{01}: There is no significant relationship between electronic store management and inventory control in KAFUCO
- H_{02}: There is no significant relationship between electronic supplier management and inventory Control in KAFUCO
- H_{03}: There is no significant relationship between electronic inventory and inventory Control in KAFUCO
- H_{04}: There is no significant relationship between inventory information system and inventory Control in KAFUCO

LITERATURE REVIEW

Lean Theory

This theory builds upon the quantity model of economic order that simply optimizes the quantity of every ordered individual object. Lean theory focuses on cost management in program takeovers. It is afcorporate that decisions on production, warehousing, by way of lead theory, and general supply chain concerns can be expedited (Tempelmeier, 2011). According to Heizer and Render (2016) Stock management usually refers to the ongoing supply of specific products with a self-driven demand motive, in the event of any speculative motive that should always be available. Therefore, the theory incorporates the notion that variation of operating systems can be used to track and analyze stock rates, and the difference between all products that might need specific approaches.

Majority of studies show that companies successfully make use of stock through lean supply chain practices and systems to achieve maximum levels of asset utilization and customer satisfaction which leads to improved business expansion, profits and large market share base (Green & Inman, 2015).

Transaction Cost Analysis Theory

Halldorsson (2017) asserted that Transaction Cost Analysis (TCA) is a theory that ensures that charges across the supply chain are stored at a minimum possible level. That is, Transaction fee approach has been widely used in one of a kind region, especially in economics and company studies. Inside the early 1970s, the arithmetic economist, Williamson, included Transaction Cost Analysis into the overall equilibrium version and installation of his transaction cost economics inside the new concept of the corporate. According to Halldorsson (2017) a businesses can reduce their activity transaction expenses by using vertical integration and growing the extent of believe on the same time. This kind of business integration can reduce the costs of stock management while increasing the service stage of
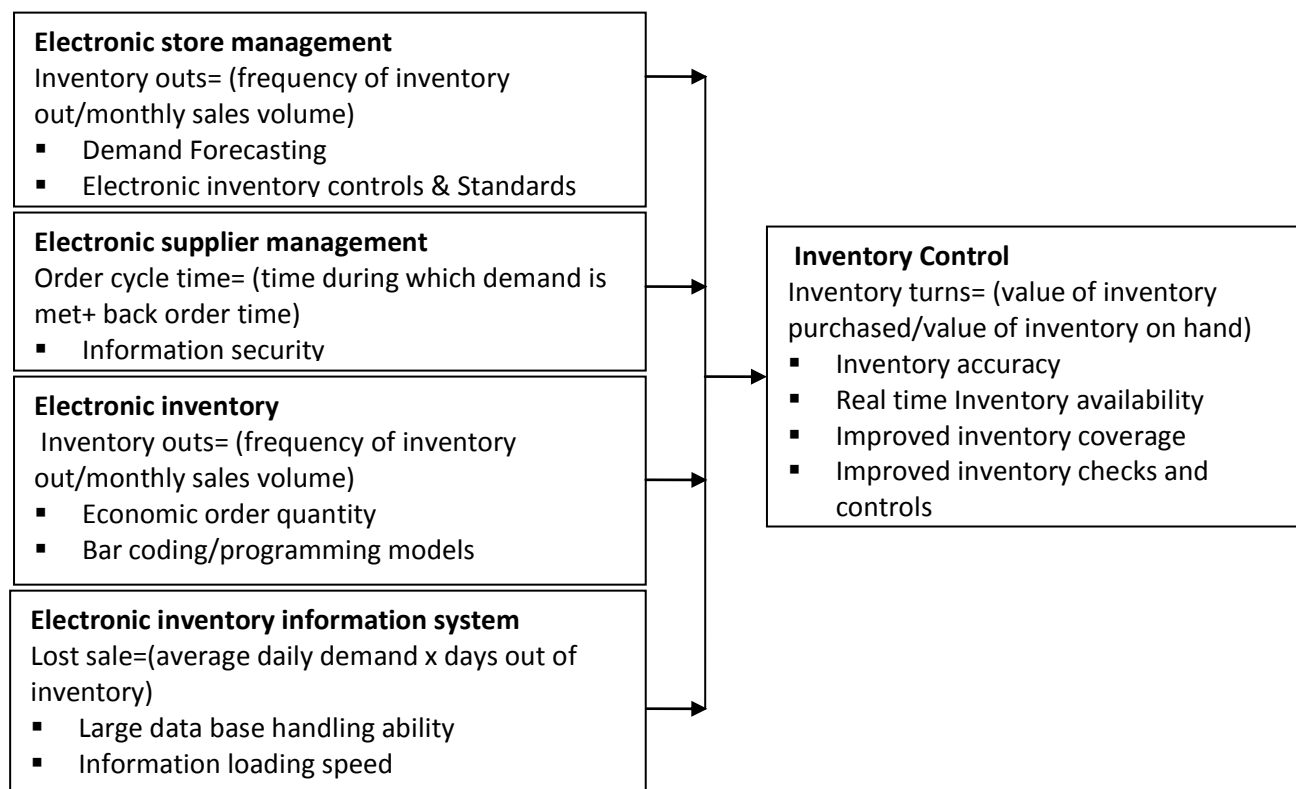
both inner and external clients even as liberating capital to be used in other areas of business employers.

Therefore, the corporate supply chain can minimize transactions by vertical integration and increase the degree of cooperation with partners in the supply chain, as well as horizontal integration as well as economies of scale obtained through supply aggregation. To look at stock control, a company ensures that all fees are saved at the least cost as a result of wanting to use them

Adaptive Structural Theory

Based on Structural theory, the study intends to determine the influence of supply chain automation on inventory control in Public Institutions on electronic store management. Structuration theory was first proposed by Sir Anthony Giddens (1984) in

his Constitution of Society, which was an attempt to reconcile social planning and the micro as well as macro perspectives of organizational structure. De Sanctis and Poole (2014) borrowed from Giddens in order to propose AST and the rise of group decision support planning. AST provides the model whereby the interaction between advancing information technologies, social structures, and human interaction is described, and which focuses on the social structures, rules, and resources provided by information technologies as the basis for human activity. AST is a viable approach in studying how information technology affects effective inventory control in an organization because it examines the change from distinct perspectives. This AST theory was thus relevant to this study as it helped assess influence of supply chain automation on inventory control.

Electronic store management
Inventory outs= (frequency of inventory out/monthly sales volume)
▪ Demand Forecasting
▪ Electronic inventory controls & Standards

Electronic supplier management
Order cycle time= (time during which demand is met+ back order time)
▪ Information security

Electronic inventory
Inventory outs= (frequency of inventory out/monthly sales volume)
▪ Economic order quantity
▪ Bar coding/programming models

Electronic inventory information system
Lost sale=(average daily demand x days out of inventory)
▪ Large data base handling ability
▪ Information loading speed

Inventory Control
Inventory turns= (value of inventory purchased/value of inventory on hand)
▪ Inventory accuracy
▪ Real time Inventory availability
▪ Improved inventory coverage
▪ Improved inventory checks and controls

Independent Variable

Dependent Variable

Figure 1: Conceptual Framework

Empirical literature review

According to Bailey (2015) Electronic Store Management entails the organization confining itself to given tasks, regulations and procedures

that are generated by leadership such as government and other law making bodies to ensure high level of integrity in the procurement practices. Conformity pressures increases as the size of the

company grows. Several studies indicate that the effect of corporate size depends on the type of social influences. This indicates that in circumstances where the largest entity is on the wrong side, the participants will assemble so as to be accepted by the group. In some occasions participants does not feel much pressure comply when the first person gives a wrong response.

Bailey (2015) greatly contributed his knowledge on enterprise information system as the backbone system that is supporting business transactions all across a corporate entity. The enterprise information system gives supports to a business process and contributes across all business functions hence plays key role to organizational productivity as well as customer supplier relationship to attain a higher competitive advantage.

A study conducted by Ogbo (2011) on the influence of electronic Economic Order Quantity on inventory control noted that EOQ is are ordering quantities which minimizes the cost between stock preserving prices and re-order charges. Ogbo (2011) further indicated that with the intention to compute a basic EOQ, positive hypothesis are important and that there is a known, steady ordering prices which is regular hence stock conserving costs. Furthermore the price of call for are recognized and there is a known regular charge according to unit, there exists replenishment which is made straight away and this makes the whole batch delivered straight away with no inventory-outs. The study further noted that the rationale of EOQ ignores buffer shares that are maintained to cater for versions in lead-time and call for (Ogbo, 2011).

A study conducted by Salawati et al. (2012) found that electronic economic order quantity minimizes the overall stock holding costs and ordering costs. They noted that EOQ is far one of the oldest classification of manufacturing scheduling models. The EOQ concept has a framework used to decide this order amount is also known as Barabas EOQ version. Calculation of stock management is usually a success whereby stock demand can be determined for the financial year. The quantity of economic order helps the company to schedule its stock replenishment on a well-timed basis on a half-year, quarterly, monthly or even weekly basis per year, thereby allowing companies to have minimal or even zero garage prices in their war David (2019) also found supplier selection influence the corporate's inventory management. That is, stock is a totally high priced asset that can be altered with computation that is of a less expensive asset only if facts are correct, be well timed and regular. Therefore this brings fewer stock, it lessens cost and get merchandise to customers easily. This automatically implies that stock management is very important if a firm wants to gain a balance between performance and responsiveness.

According to AVijay (2014) automation is a technology that deals with the application of computers and mechatronics purely for purposes of production of goods and services. Automation is broadly classified into manufacturing and service automation. The basic reasons why many corporate automate is to curb the problems of labour shortages, high costs associated with labour, desire to increase productivity and to minimize the manufacturing of lead-times which indicates that automation contributes to improved customer service and lower operational costs. Stock generally has role in the supply chain in forms such as raw materials stock, working in progress (WIP) usually referred as finished goods. The biggest setbacks experienced by many supply chain managers is coming up with an efficient and effective automated stock information management system for their companies (Brason et al, 2015).

According to Hsu et al. (2018) the integration of information system to the availability of ICT is to improve electronic integration in the supply chain of which this ICT supports the buying and selling across electronic channels in automated supply chain management. However the efficiency and effectiveness of ICT supply process is not guaranteed due to network challenges.

A study by Zhu and Kraemer (2015) indicated that internal Information Communication Technology abilities enables sharing of data within the corporate and among partners along the supply chain. The efficiency of internal processes increases with availability of integration between external electronic applications and a corporate internal data. This implies that, the integration has a positive impact on generating good results because it is corporate-specific. According to this, the importance of employing ICTs in internal business processes depends on the ability to stimulate internal ICT structures by connecting resources that increases integration degree and complementary in internal stock control information system.

Empirical literature on fuzzy set theory in inventory systems was established. The most comprehensive study is that of Guiffrida (2019), who assessed and categorized fuzzy stock models covering studies till 2018.

There is existing literature summing up stock control models as deterministic or probabilistic. According to Wachira and Ngutu, (2015) the deterministic models comprise of the Economic Order Quantity (EOQ) model, Sensitivity analysis model and a price-break model. The probabilistic models includes: inventory models Single and multi-period inventory models, a fixed order quantity model, a fixed and time period model

Ford Whitman Harris in (1913) formulated the first economic order quantity (EOQ) model and under this model, the EOQ problem is noted as the simplest and most robust stock control model and is one of the most important pieces of theory in production economics holding a physical production model. EOQ has its economic repercussions and as a result to its usefulness many scholars gets relevance to adapt this model to check its applicability in real situations in inventory control (Wachira & Ngutu, 2015).

Under the EOQ model the basic assumptions are that all elements of the stock control system are accurate through either electronic stock modeling

or mathematical stock modeling. Therefore this condition contrasts with the actual business surrounding it. Therefore, to edit, polish and improvise the stock models, it is vital to assess the EOQ problem in a precise analysis and as a result of assessment fuzzy set theory developed by Zadeh (2015) was noted to be the best method of assessment. Fuzzy set theory with association with EOQ model forms fuzzy EOQ (FEOQ), that has formed basis for many researches in the inventory literature.

A study by Guiffrida (2019) Applies Fuzzy Set Theory in Inventory Systems, Evaluated Analysis and Grouped Fuzzy Set Models. However, some studies contradicted his concept and it was not clear how this data was collected. Guiffrida and Nagi (2019), Analyzed inventory lot-sizing models across the framework of production and stock management modelling, and found a negative relationship between demand modeling and stock control.

METHODOLOGY

The researcher used descriptive survey design. For this study, the target population or those cases that contained the desired information consisted of procurement officers, auditors, financial officers, accountants, ICT officers, store keepers and officers from user departments in inventory control in Kaimosi Friends University College. The study targeted was 300 staffs at Kaimosi University College (Kaimosi University Employee Data, 2019). For this reason the researcher sampled 28% of the entire population which was 85 respondents to generate the most accurate information. The researcher used structured questionnaires to collect primary data. The Cronbach's Alpha was used in the study for internal consistency. Frequencies and percentages as well as measures of central tendency (means) and dispersion (standard deviation) was used. SPSS version 23 is the analysis computer software that was used to compute statistical data.

Regression Model

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

Y = inventory control

β_0 = Constant

X_1 = Electronic store management

X_2 = Electronic supplier management

X_3 = Electronic inventory

X_4 = Electronic inventory information system c

$\{\beta_0-\beta_4\}$ = Beta coefficients

e = the error term

RESULTS AND DISCUSSIONS

Determinants of Effective Inventory Control

The study obtained data on study variables this was provided on Likert Scale as follows: strongly disagree=SD, disagree=D, Neutral=N, agree=A, strongly agree=SA.

Table 1: Influence of Electronic Store Management on Inventory Control

Response	SA	A	N	D	SD	Mean	Std Dev
Predicting demand leads to reduction of inventory holding cost	17	40	8	1	0	1.91	0.25
Predicting demand reduces the instances of shortages in university	20	43	2	1	0	1.71	0.28
All inventory taking activities are controlled on the e-store management system	15	47	3	1	0	1.86	0.31
There is use of computer generated codes as an effective inventory management measure	17	45	4	0	0	1.83	0.30
Generally, online storage management really influences effective inventory control	18	38	9	1	0	1.87	0.29

Source: Survey Data (2020)

The study sought to determine the Influence of Electronic store management on Inventory Control, from the finding majority of the respondents agreed that all Predicting demand leads to reduction of inventory holding cost as shown by a mean of 1.91 and standard deviation of 0.25, Predicting demand reduces the instances of shortages in university as shown by mean of 1.71 and a standard deviation of 0.28, all inventory taking activities were controlled on the e-store management system as shown by mean of 1.86 and a standard deviation of 0.30. There was use of computer generated codes as an effective inventory management measure as shown by mean of 1.83 and a standard deviation of 0.30 and finally that it

emerged that online storage management really influences effective inventory control as shown by a mean of 1.87 and standard deviation of 0.29. The above findings concurred with study findings by Sople, (2018) who asserted that inventory store management is vital in learning institutions. Furthermore this concurs with the findings of Bailey (2015) who noted that inventory storage and enterprise information system as a backbone for many organizations. Therefore electronic store management has a positive influence on inventory control.

The study sought to establish influence of electronic supplier management on inventory control and results were provided in table 2 below.

Table 2: Influence of Electronic Supplier Management on Inventory Control

Response	SA	A	N	D	SD	Mean	Std Dev
The university uses e-sourcing to reduce the costs associated with sourcing of materials, goods and services	1	1	4	42	18	1.86	0.28
There is effective supplier evaluation and competitive bidding on the e-supplier platform	18	44	4	0	0	1.74	0.27
Through making orders online, it enhances buyer/supplier collaboration	14	46	5	1	0	1.86	0.28
There is online order specifications	16	44	5	1	0	1.87	0.29

Response	SA	A	N	D	SD	Mean	Std Dev
Generally e-supplier management enhances effective supply management	17	45	3	1	0	1.89	0.26

Source: Survey Data (2020)

The study sought to determine the influence of electronic supplier management on inventory control, from the finding majority of the respondents strongly disagreed that the university uses e-sourcing to reduce the costs associated with sourcing of materials, goods and services as shown by mean of 1.86 and a standard deviation of 0.28. However they agreed that there is effective supplier evaluation and competitive bidding on the e-supplier platform as shown by mean of 1.74 and a standard deviation of 0.27, more respondents agreed that through making orders online, it enhances buyer/supplier collaboration as show by mean of 1.86 and a standard deviation of 0.28, findings showed that respondents agreed that there is online order specifications corporation as show by mean of 1.87 and a standard deviation of 0.29, and finally they agreed that electronic supplier management enhances effective supply management as show by mean of 1.89 and a standard deviation of 0.26, the above findings concurs with the study finding by Neef, (2016) who asserts that online supply chain partners are important sources of new ideas, knowledge and skills which can ensure competitiveness and effective business outcomes. David (2019) also found that supplier selection influences the corporate's inventory management. Therefore from the above findings its good to note that even though electronic supplier management has a positive influence on inventory control sometimes electronic supplier management does not reduce costs associated with inventory control.

The study sought to establish the influence of electronic inventory on inventory control and results were provided in table 3 below.

Table 3: Influence of Electronic inventory on Inventory Control

Response	SA	A	N	D	SD	Mean	Std Dev
There are various electronic inventory methods in University college system	21	40	3	2	0	1.83	0.26
University college utilizes economic order quantity method to save costs	20	44	1	1	0	1.76	0.29
There is effective electronic data interchange between the suppliers and user departments	16	45	4	1	0	1.80	0.28
Automated programming inventory method really improves inventory control in the University College	14	49	2	1	0	1.80	0.30
Generally, effective use of electronic inventory techniques really improves inventory control in the University College	0	0	7	17	42	1.85	0.27

Source: Survey Data (2020)

The study sought to determine the Influence of electronic inventory on inventory control, from the research findings the study established that majority of the respondents agreed that; there are various electronic inventory methods in University college system as shown by mean of 1.83 and a standard deviation of 0.26, University college utilizes economic order quantity method to save costs as shown by a mean of 1.76 and a standard deviation of 0.29. They agreed that the Automated programming inventory method really improves inventory control in the University College and further agreed that there is effective electronic data interchange between the suppliers and user departments as shown by a mean of 1.80 and a standard deviation of 0.28 and 0.30 in each case. However they disagreed that automatically the effective use of electronic

inventory techniques really improves inventory control in the University College as shown by a mean of 1.85 and a standard deviation of 0.27. This was on the account that we have other factors that could affect inventory control other than inventory control. The finding above concurred with the study findings by Bailey (2015) who noted that electronic inventory is an as an integral part of how the organization work and compete.

The study sought to establish the influence of electronic inventory information system on inventory control, results were provided in table 4 below.

Table 4: Influence of Electronic inventory information system on Inventory Control

Response	SA	A	N	D	SD	Mean	Std Dev
The University College electronic inventory information system can handle large information database	24	34	5	2	1	1.75	0.23
The University College electronic inventory information system has high information loading speed	1	1	4	27	33	1.72	0.25
The University College electronic inventory information system is secure	22	40	2	1	1	1.78	0.27
The University electronic inventory information system is stable and well integrated into University College's management information system	20	43	1	1	1	1.75	0.27
Generally, electronic inventory information system has really boosted inventory control in the University College	26	36	2	1	1	1.73	0.26

Source: Survey Data (2020)

The study sought to determine the respondent's level of agreement with the above statements relating to influence of electronic inventory information system on inventory control. From the research findings the study established that majority of the respondents agreed that the University College electronic inventory information system can handle large information database as shown by a mean of 1.75 and a standard deviation of 0.23 and it affects performance of inventory control positively, they agreed that the University College electronic inventory information system is secure as shown by a mean of 1.78 and a standard deviation of 0.27 and this affects inventory control performance positively. Furthermore they agreed that the University electronic inventory information system is stable and well integrated into University College's management information system with similar response on electronic inventory information system having really boosted inventory control in the University College as shown by a mean of 1.75 in each case and a standard deviation of 0.27 and 0.23 respectively hence positively affects performance of inventory control. The above findings concurs with the findings by Chan and Qi, (2018) who noted that electronic inventory information system defines a corporates competences and abilities and therefore should be practiced. However it was noted that the University College electronic inventory information system had a low information loading speed which negatively affected performance of inventory control. Therefore when inventory information system is low it becomes difficult to attain inventory control electronically.

From the study on inventory control as a variable it was noted that there was improved inventory accuracy in the procurement department. The department has real time inventory out and inventory availability as a result of supply chain automation. Kaimosi University College has effective inventory coverage as per the department inventory needs and there exists efficient inventory capacity utilization. Generally the findings were that there is an overall improvement in inventory checks and controls after automation of inventory control.

Inferential Statistics

Correlation Analysis

The Table 5 presented the results of the correlation analysis. The results showed that Electronic store management and Inventory turnover were positively and significant related (r=0.141, p=0.037). The results further indicated that Electronic store management and Inventory turnover are positively and significant related (r=0.316, p=0.000). It was further established that Electronic Supplier management is positively and significantly related to Inventory turnover (r=-0.315, p=0.000). Similarly, results showed that Inventory information system was positively and significantly related to Inventory turnover (r=0.266, p=0.000).

Table 5: Correlation Matrix

Variable		Inventory turnover ratio	Electronic store management	Electronic Supplier management	Electronic inventory control	Inventory information system
Inventory turnover ratio	Pearson Correlation	1				
	Sig. (2-tailed)					
Electronic store management	Pearson Correlation	0.141	1			
	Sig. (2-tailed)	0.037				
Electronic Supplier management	Pearson Correlation	0.316	0.12	1		
	Sig. (2-tailed)	0.000	0.045			
Electronic inventory control	Pearson Correlation	-0.315	-0.126	-0.704	1	
	Sig. (2-tailed)	0.000	0.063	0.000		
Inventory information system	Pearson Correlation	0.266	0.132	0.706	-0.722	1
	Sig. (2-tailed)	0.000	0.052	0.000	0.000	

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Regression Analysis

Model Fitness

The results presented in Table 6 presented the fitness of model used of the regression model in explaining the study phenomena. Electronic store management, Electronic Supplier management, Electronic inventory control and Inventory information system were found to be satisfactory variables in explaining Inventory turnover. This was supported by coefficient of determination also known as the R square of 0.835 which means 83.5%. This means that Electronic store management, Electronic Supplier management, Electronic inventory control and Inventory information system explain 83.5% of the variations in the dependent variable which is inventory turnover. This results further meant that the model applied to link the relationship of the variables was satisfactory.

Table 6: Model Fitness

Indicator	Coefficient
R	0.914
R Square	0.835

Analysis of Variance

In statistics significance testing the p-value indicates the level of relation of the independent variable to the dependent variable. If the significance number found is less than the critical value also known as the probability value (p) which is statistically set at 0.05, then the conclusion would be that the model is significant in explaining the relationship; else the model would be regarded as non-significant.

Table 7 provided the results on the analysis of the variance (ANOVA). The results indicated that the overall model was statistically significant. Further, the results implied that the independent variables are good predictors of inventory turnover. This was supported by an F statistic of 146.277 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

Table 7: Analysis of Variance

Indicator	Sum of Squares	Df	Mean Square	F	Sig.
Regression	93.662	4	23.416	146.277	0.000
Residual	18.569	116	0.16		
Total	112.231	120			

Regression of Coefficients

Results in Table 7 showed that Electronic store management and Inventory turnover are positively and significantly related (β=0.530, p=0.000). This implied that an increase in the use of electronic store management by one unit would result to an increase in inventory turnover by 0.530 units. The table further indicates that electronic supplier management is positively and significantly related (β=0.154, p=0.020). This implies that an increase in electronic supplier management by one unit would result to an increase in inventory turnover by 0.154 units. It was further established that electronic inventory control was positively and significantly related (β =0.329, p=0.004). This implies that an increase in electronic inventory control by one unit would result to an increase on inventory turnover by 0.329 units. Further, results in table 8 showed that inventory information system had a positive and significant relationship with inventory turnover (β =1.573, p=0.000). This implied that an increase in the inventory information system by one unit would result to an increase in inventory turnover by 1.573 units.

Table 8: Regression of Coefficients

Variable	B	Std. Error	T	Sig.
(Constant)	6.913	0.456	15.174	0.000
Electronic store management	0.530	0.099	5.381	0.000
Electronic Supplier management	0.154	0.06	2.566	0.020
Electronic inventory control	-0.329	0.111	2.978	0.004
Inventory information system	1.573	0.131	11.997	0.000

Thus, the optimal model for the study was;
Inventory turnover =6. 913+ 0.530 Electronic store management + 0.154 Electronic Supplier management + -0.329 Electronic inventory control + 1.573 Inventory information systems.

CONCLUSIONS AND RECOMMENDATIONS

The first objective was to investigate the influence of electronic store management on inventory control of Kaimosi University College. Results reveal that electronic store management highly influenced inventory control of the Kaimosi University College.

Further, the correlation results revealed that electronic store management had a positive and significant relationship with inventory control measured by inventory turnover (Value of inventory purchased/Value of inventory on hand). The regression results also revealed that electronic store management had a positive and significant relationship with inventory control. This implies that increase in electronic store management results to an improvement in inventory control of Kaimosi University College.

The second objective was to analyze the influence of Electronic Supplier Management on Inventory Control of Kaimosi University College. Results reveal that Electronic Supplier Management highly influenced Inventory Control of Kaimosi University College. The correlation results revealed that Electronic Supplier Management had a positive and significant relationship with Inventory Control measured by inventory turnover. The regression results also revealed that Electronic Supplier Management had a positive and significant relationship on Inventory Control. This implies that increase in Electronic Supplier Management results to an improvement in Inventory Control of Kaimosi University College.

The third objective was to analyze the influence of Electronic Inventory control on Inventory Control of Kaimosi University College. Results reveal that Electronic Inventory control highly influenced the Inventory Control of Kaimosi University College. The correlation results revealed that Electronic Inventory control had a negative and significant relationship of Kaimosi University College measured by inventory turnover. The regression results also revealed that Electronic Inventory control had a negative and significant relationship on Inventory Control. This implies that increase in Electronic Inventory control results to an improvement in Inventory Control of Kaimosi University College.

The fourth objective was to analyze the influence of Inventory Information System on Inventory Control of Kaimosi University College. Results reveal that Inventory Information System highly influenced the

Inventory Control of Kaimosi University College. The correlation results revealed that Inventory Information System had a positive and significant relationship on Inventory Control measured by inventory turnover. The regression results also revealed that Inventory Information System had a positive and significant relationship with Inventory Control. This implied that increase in Inventory Information System results to an improvement in Inventory Control of Kaimosi University College.

The study concluded that Electronic store management, Electronic Supplier management, Electronic inventory control and Inventory information system influences inventory control as measured by inventory turnover. Specifically, the study concluded that Electronic store management is a contributor to inventory control. However, it is important for a corporate to understand the influence of electronic store management components on the corporate's inventory control and also undertake deliberate measures to optimize its Electronic store management level.

The study concluded that there was an inverse relationship between Electronic Supplier management and inventory control. The findings indicate that the higher the order cycle time ratio, the higher the inventory turnover therefore supports the need to increase Electronic Supplier management.

The study also concluded that due to the fact that Electronic inventory control cannot solely determine the inventory control of Kaimosi University College, unless other factors such as such as staff competency are considered. The relationship between Electronic inventory control and inventory control was found to be negative.

Further, the study concluded that without Inventory information system inventory control would not be attained easily as the study provided a positive relationship for these variables.

The study recommended that Kaimosi University College managers should be trained on electronic store management for efficient electronic system to

strengthen inventory control. Also the management should also consider seeking professional guidance towards managing electronic system. The study recommended that Kaimosi University College should capitalize on available electronic suppliers for cost saving purposes. This will make them sustainable operationally and financially. It was recommended that Kaimosi University College should improve their electronic inventory control by hiring experienced staffs and offer on job training courses to make staffs fully informed on system matters. The study recommended that Kaimosi University College should offer inventory information system that is up to date and faster for easy operations. This will save on time and efficiency.

Areas for Further Studies

This study focused on four financial variables. Further studies should be done on other variables such as the influence of Electronic Point of sale system, Radio Frequency Identification system and Vendor Managed Inventory system on inventory control of institutions of higher learning in Kenya.

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