Influence of Inventory Control Practices on Procurement Performance of Public Hospitals in Trans Nzoia County

Edwin Wabwire Barasa[a]*, Clive Mukanzi[b]

[a]Edwin Wabwire Barasa, School of Entrepreneurship, Procurement and Management , Jomo Kenyatta University of Agriculture and Technology, 98-30200, Kitale, Kenya

[b]Clive Mukanzi, School of Entrepreneurship, Procurement and Management , Jomo Kenyatta University of Agriculture and Technology, 1014-50100, Kakamega, Kenya

[a]Email: eduwabys@yahoo.com, eduwabys@gmail.com
[b]Email: cmukanzi@gmail.com

Abstract

Hospitals procure almost all the products that they use for both pharmaceutical and non-pharmaceutical purposes, food items, cleaning agents among others. A significant amount of hospitals' expenditure goes to purchasing of these items. However, poor inventory control of these products lead to loss, misuse, lack of accountability and poor management of these products. This study looked at the relationship between inventory control practices and procurement performance of public hospitals in Trans Nzoia County with regards to use of economic order quantity, safety stock ordering, first-in-first-out and inventory audit. The main objective of this study was to assess the influence of inventory control practices on procurement performance of public hospitals in Trans Nzoia County. A survey research design was used in this study. The study was conducted in public hospitals in Trans Nzoia County which comprised of Kitale County Hospital, Mt. Elgon Hospital and six sub-county hospitals (Endebes, Kwanza, Cherang'any, Saboti, Kapsara and Matunda Sub-County Hospitals). The study employed census as the sampling technique. The sample size for this study was 47 respondents comprising of heads of departments of procurement and stores, their assistants as well as employees working in those departments. A structured questionnaire was used for collecting data. The research instrument was pretested at Kapenguria County Referral Hospital and Chepararia sub-county hospital; West Pokot County. Collected data was analyzed using statistical package SPSS.

----

* Corresponding author.

Pearson correlation and multiple linear regression were used for inferential analysis. The study found out that the use of economic order quantity had significant influence on procurement performance of public hospitals in Trans Nzoia County. However, EOQ did not take into account changing consumer demand and seasonal changes in inventory costs. Safety stock ordering had significant influence on procurement performance of public hospitals in Trans Nzoia County. Hospitals always had safety stocks of its inventories. Safety stock ordering absorbed the variability of customer demand and was used to protect the hospital from stock-outs caused by inaccurate planning. High level of safety stock ordering led high customer satisfaction. However, high level of safety stock ordering led to high holding costs for the hospitals. FIFO had a positive significant influence on procurement performance of public hospitals in Trans Nzoia County. FIFO resulted in a higher ending inventory and lower cost of inventory. Inventory audit had a positive significant influence on procurement performance of public hospitals in Trans Nzoia County. Inventory audit ensured timely and adequate identification and evaluation of inventories and enabled the hospitals evade risks associated with stock such as unnecessarily high stock levels. The study recommended that hospitals should find a complementary inventory control practice to the use of EOQ which takes take into account changing consumer demand and seasonal changes in inventory costs.

1. Introduction

1.1 Background to the Study

Inventory control is an integral part in improving effectiveness of business operations as well as organizational performance that gives an organization a competitive advantage [2].Effective inventory control necessitates that an organization stocks adequate inventory since excess inventory occupies more space, need huge financial muscle and creates possibilities of loss, damage and spoilage [15] while inadequate inventory is likely to interrupt flow of business thus leading to customer dissatisfaction [24]. Efficient inventory control is a very important component of procurement function in an organization because it could lead to reduced overhead costs, higher levels of customer satisfaction and better procurement performance overall. This creates need to ensure that both logical inventory and physical inventory are well managed through providing correct prediction and timely restocks [15]. Globally, Cagliano and his colleagues found out that embracing inventory control systems had a number of benefits to an organization; reduced operational cost, reduced lead times and increased operational efficiency [3]. In the past, inventory control was not seen to be necessary. Inventory alone accounts for as much as 30% of the organization invested capital [9]. Therefore, there is a great need for any institution to institute measures and procedures that would lead to proper inventory control as well as procurement performance. Tage investigated the effect of inventory control on performance of manufacturing firms in Greece. The study showed that high inventories lead to poor procurement performance and lower rate of return [25]. Coleman established that managers of manufacturing firms in Malaysia agreed that procurement performance was significantly influenced by effective inventory control practices. However, higher inventory levels were also seen as a sign of wealth [5].

In Africa, for instance, in Nigeria, companies have made huge investments in inventories and inventory control since they are believed to have direct relationship to sales and production of goods and services. Companies with the help of their respective management have implemented long term inventory control plans and organizational inventory control policies [23]. A study by Nzuza on factors affecting the success of inventory control in the Stores in the division of the Thekwini Municipality, Durban appreciated that there have been inefficiencies in the inventory systems and suggested a revision of inventory control processes. In response to such findings, there is now in place the Preferential Procurement Policy Framework Act (PPPFA), which was passed to guide inventory control of municipal authorities [22]. In Kenya, more and more institutions including small-scale enterprises are increasingly adopting inventory control systems with the aim of achieving competitive advantage and enhancing their performance. A study revealed that more and more small scale enterprises were adopting inventory control systems into their operations. The findings further revealed that inventory control enhances business performance [21]. Another study argued that Kenyan supermarkets are increasingly adopting inventory control systems in order to enhance their operational efficiency, customer service and performance [12]. Mwirigi & Moronge investigated the role of procurement audit on performance of public hospitals in Nairobi County. Results indicated that the variables were very significant and therefore needed to be considered in any effort to boost procurement audit. There was need to enhance a computerized inventory auditing and procuring of materials for reduction of stock outs. There is also need to have internal inventory security practices to reduce operational costs, reduce overstocking and reduce obsolete products in the stores [19]. Mikuna & Osoro studied the factors affecting inventory control practices on service delivery of County Referral Hospitals, a case study of Trans Nzoia. The study concluded that the inventory control practices affected the service delivery of health care in public hospitals. Trans-Nzoia County Referral Hospitals lacked proper modern inventory techniques in place and continuous and on job training. Lead time was inadequately followed up whereby there was no follow up of orders from time to time leading to late and delayed deliveries of goods and services offered by the hospitals. Poor infrastructure and lack of modern technology and monitoring of the movement of goods led to theft of goods for example drugs [17].

1.2 Problem Statement

Hospitals procure almost all the products that they use for both pharmaceutical and non-pharmaceutical purposes, food items, cleaning agents among others. A significant amount of hospitals' expenditure goes to purchasing of these items. Furthermore, inventory control practices are set up to ensure an optimal stock level of medicine in general and essential non-pharmaceutical items to enable satisfactory service delivery that touches on human life unlike procurement in other sectors [24, 17]. According to Procurement Audit Report for year 2017-2018 for public hospitals in Trans-Nzoia County showed that poor inventory control of pharmaceutical and non-pharmaceutical products led to loss, misuse, and lack of accountability and poor management of these products. In addition, the report showed that the set up inventory practices are not fully implemented in these health institutions, hence creating a need for this study. In addition, most public hospitals always turned away patients due to lack of essential drugs and infrastructural facilities [18]. Public hospitals have a procurement department that is responsible for the provision of goods and services to the hospitals with the aim of providing quality health care services in order to achieve customer satisfaction. They maintain inventory control system which is aimed at ensuring that facilities and equipment are supplied and delivered at the right time. Thus, the

question that arising is, how does the already established inventory control practices influence procurement performance in public hospitals in Trans Nzoia County? A number of studies related to inventory control have been done in Kenya but majority of them have focused on parastatals [4, 1, 26] and corporate leaving hospitals with few researches which were majorly conducted in Nairobi County [19]. As shown above, none of these studies were conducted in public hospitals in Trans Nzoia County at large and none of them focused on the variables of this study. Therefore, this was the gap that the study sought to fill by assessing the influence of inventory control practices on procurement performance of public hospitals in Trans Nzoia County.

1.3 Objectives of the Study

To investigate the influence of inventory control practices on procurement performance of public hospitals in Trans Nzoia County.

1.3.1 Specific Objectives

i) To examine the influence of the use of economic order quantity on procurement performance of public hospitals in Trans Nzoia County.

ii) To establish the influence of safety stock ordering on procurement performance of public hospitals in Trans Nzoia County.

iii) To investigate the influence of First-in-First-out inventory control practice on procurement performance of public hospitals in Trans Nzoia County.

iv) To analyze the influence of inventory audit on procurement performance of public hospitals in Trans Nzoia County.

1.4 Hypotheses of the Study

Ho$_1$: Use of economic order quantity does not have significant influence on procurement performance of public hospitals in Trans Nzoia County.

Ho$_2$: Safety stock ordering does not have significant influence on procurement performance of public hospitals in Trans Nzoia County.

Ho$_3$: First-in-First-out inventory control practice does not have significant influence on procurement performance of public hospitals in Trans Nzoia County.

Ho$_4$: Inventory audit does not have significant influence on procurement performance of public hospitals in Trans Nzoia County.

2. Materials and Methods

2.1 Research Design

A research design is a plan indicating how the problem of the investigation will be solved [28]. Survey research design was used in this study to collect data from public hospitals within the County of Trans Nzoia. Surveys are useful in describing the characteristics of a large population. No other research method can provide this broad capability, which ensures a more accurate sample to gather targeted results in which to draw conclusions and make important decisions.

2.2 Target Population

Population is the total number of units that meets the assumption of the researcher [10]. The term population refers to a large, well-defined group from which a sample can be drawn from and which is specified in very concrete terms. This study was conducted in public hospitals in Trans Nzoia County which comprise of Kitale County Hospital, Mt. Elgon Hospital and six sub-county hospitals (Endebes, Kwanza, Cherangany, Saboti, Kapsara and Matunda Sub-County Hospitals). The sampling frame of the study included heads of departments of procurement and stores, their assistants as well as employees working in those departments. This formed an appropriate target population for the study because they were well knowledgeable with regards to the field under investigation.

Table 1: Target Population

Hospital	Sampling Frame
Kitale county Hospital	12
Mt. Elgon Hospital	8
Endebes Hospital	5
Kwanza Hospital	3
Cherang'any Hospital	4
Saboti Hospital	4
Kapsara Hospital	5
Matunda Hospital	6
TOTAL	**47**

Source: Human Resource, Trans Nzoia County Government

2.3 Sample Size and Sampling Technique

2.3.1 Sampling Technique

A sampling technique refers to selection of elements of the population that represents the population (7). Therefore, the study used census sampling technique in selecting study participants into the study to allow the

researcher to focus on the already defined population with the desired characteristics who are most knowledgeable in the area of the study. Sampling involves selecting a particular sampling method that can be used in selecting research entities. Mugenda & Mugenda opined that when the sampling from of a study is not large enough (less than 100), all respondents defined in the sampling frame should be included in the sample size of the study for inclusivity purposes [16]**.**

2.3.2 Sample Size

Sample size according to Kothari, ought to be optimum so as to fulfil the requirements of representation, technical, flexibility and reliability[14]. In line with census, the sample size for the study included all the 47 respondents.

2.4 Data Collection Instruments

According to Mugenda & Mugenda, data collection instruments are tools used by the researcher to ceollet data [16]. Primary data was collected using a questionnaire that was administered to the study respondents. According to Kothari, primary data is the original data collected for specific reasons [14]. Structured questionnaires were utilized in the collection of data. The questionnaires constituted of questions that seek to answer queries linked to the study objectives. Questionnaires are the most popularly utilized tools when respondents are cooperative and can be reached quickly. The technique can reach a large number of respondents especially those who are able to read and write. For purposes of uniformity, the questions were closed-ended.

2.5 Pilot Study

A pilot study is a small survey done before actual data collection to test validity and reliability of the questionnaire [28]. In line with this, the research instrument was pretested in West Pokot County at Kapenguria County Hospital and Chepararia Sub-county hospital so as not to interfere with the study population and also to give a representative view of how collected data would be because these hospitals have similar characteristics with the hospitals under study. Connelly stated that a good study sample for a pilot study should be at least 10% of the projected sample [6]. Thus, the sample size for the pilot study comprised of 5 respondents (10% of the total projected sample of the study).

2.5.1 Validity of the Questionnaire

Validity ensures that there is no systematic error and also the random error is as small as possible. Validity is the level to which an instrument measures what it purports to measure. Content validity of the questionnaire was measured using item rating and scale level rating.

2.5.2 Reliability of the Questionnaire

Reliability of the data collection instrument was measured using Cronbach Alpha test. For all the variables under study, Cronbach alpha was computed to test the level of internal consistency. According to Fraenkel &

Wallen items are considered reliable if they yield a reliability coefficient of 0.70 and above [11]. Based on this criterion, variables that yielded reliability coefficients of 0.70 and above were considered reliable.

2.6 Data Processing and Analysis

This study used descriptive and inferential statistics. Descriptive analysis involved a process of transforming raw data into tables and charts that are a vital part of making sense of the data [7]. Once data was collected, it was crosschecked and verified for errors, completeness and consistency. Data was analyzed descriptively using IBM Statistical Package for Social Sciences (SSPS v.20). Pearson correlation coefficient was used to test study hypothesis. Multiple linear regression analysis model was computed to determine the statistical relationship between study variables as:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Where: Y = Procurement Performance, β_0 = Constant, β_i = Coefficients of regression (i=1, 2, 3, 4)

X_1 = Economic order quantity, X_2 = Safety Stock Ordering, X_3 = First-in-First-out inventory control

X_4 = Inventory audit and ε = Error term

Analyzed data was presented descriptively using tables.

3. Results

3.1 Demographic Characteristics of the Respondents

Gender: Majority of the respondents 56.4 percent were female while 43.6 percent of them were male. This study finding depicted a good representation of both gender with each having at least 30% representation which is in line with the new Constitution of Kenya.

Age Group: The distribution of the age group of the respondents showed that majority 71.8 percent of the respondents were between 18-30 years old, 23.1 percent of them were between 31-40 years old while 5.1 percent of them were aged 41-50 years. None of the respondents was above 50 years. The findings of the study revealed that majority of the respondents were young.

Education Level: The study findings showed that majority of the respondents 71.8 percent of them had Diplomas, 17.9 percent of them had Bachelor's Degrees, 7.7 percent of them had certificate and only 2.6 percent of them had Masters Degrees respectively. None of the respondents had attained a PhD.

Duration of Service: Majority of the respondents 76.9 percent stated less than 5 years, 17.9 percent of them stated 5-10 years and 5.1 percent of them stated 11-15 years respectively. None of the respondents stated that that they had worked in their respective work stations for more than 15 years.

Table 2: Background Information

Variable	Category	Frequency	Percentage
Gender	Male	17	43.6
	Female	22	56.4
Age Group	18-30 years	28	71.8
	31-40 years	9	23.1
	41-50 years	2	5.1
	51-60 years	0	0.0
	Above 60 years	0	0.0
Education Level	Certificate	3	7.7
	Diploma	28	71.8
	Bachelors	7	17.9
	Masters	1	2.6
	PhD	0	0.0
Duration of Service	<5 years	30	76.9
	5-10 years	7	17.9
	11-15 years	2	5.1
	16-20 years	0	0.0
	> 20 years	0	0.0

3.2 Presentation of Findings

3.2.1 Use of Economic Order Quantity

The study sought to examine the influence of the using economic order quantity on procurement performance of public hospitals in Trans Nzoia County. The findings are presented in a five point Likerts scale where SA=strongly agree, A=agree, N=neutral, D=disagree, SD=strongly disagree, T=total and M=mean. From table 2 below, the respondents were asked whether EOQ minimized the cost of inventory. The distribution of findings showed that majority of the respondents 53.5 percent strongly agreed that EOQ minimized the cost of inventory, 23.2 percent of the respondents agreed and 5.4 percent of them were neutral respectively while 17.9percent of them strongly disagreed. None of them disagreed to the statement. The respondents were also asked whether EOQ minimized amount of cash tied up in the inventory balance. The results of the study showed that majority of them 51.3 percent strongly agreed that EOQ minimized amount of cash tied up in the inventory balance, 28.1 percent of them agreed, 5.2 percent of them were neutral while only 2.6percent and 12.8 percent of them disagreed and strongly disagreed respectively. The respondents were further asked whether EOQ gave the hospital inventory reorder point. The findings of the study showed that majority of the respondents 34.3 percent strongly agreed 36.9 percent agreed that EOQ gave the hospital inventory reorder point, 23.1 percent of them were neutral while only 5.7 percent of them disagreed respectively. None of the respondents strongly disagreed to the statement. In relation to EOQ preventing shortage of inventories, the results showed that majority of the respondents 30.8 percent strongly agreed that EOQ prevented shortage of inventories, 24.5 percent of them

agreed, 16.5 percent were neutral, 20.4 percent disagreed while only 7.8 percent of them strongly disagreed respectively. In relation to EOQ not taking into account changing consumer demand, majority of the respondents 33.2 percent disagreed to the statement, 25.6 percent of them were neutral, 15.6 percent of them strongly disagreed while 13.7 percent and 11.9 percent agreed and strongly agreed respectively. In relations to EOQ not taking into account seasonal changes in inventory costs, majority of the respondents, 32.3 percent disagreed with the statement, 24.1 percent agreed to the statement, 20.5 percent of them strongly disagreed, 12.8 percent of them were neutral while 10.3 percent of them strongly agreed. With regards to EOQ increasing demand costs, majority of the respondents 25.9 percent of them strongly agreed that EOQ increases demand costs, 20.8 percent of them agreed 18.6 percent of them were neutral, 16.8 disagreed, while 17.9 strongly disagreed respectively. The study sought to find out whether EOQ reduced ordering costs. The results showed that majority of the respondents 40.7 percent strongly agreed, 36.3 percent agreed to the statement, 13.8 percent of them were neutral while only 5.0 percent of them disagreed and 4.2 percent strongly disagreed respectively. Finally, the respondents were asked whether EOQ reduced carrying costs. The findings depicted that majority of the respondents 43.6 percent strongly agreed to the statement, 20.5 percent of them agreed, 23.1 percent were neutral while only 7.2 percent and 5.6 percent of them strongly disagreed and disagreed respectively.

Table 2: Use of Economic Order Quantity

Statements		SA	A	N	D	SD	T	M
EOQ minimize the cost of inventory	%	53.5	23.2	5.4	0.0	17.9	100	3.95
EOQ minimize amount of cash tied up in the inventory balance	%	51.3	28.1	5.2	2.6	12.8	100	4.03
EOQ gives the hospital inventory reorder point	%	34.3	36.9	23.1	5.7	0.0	100	4.03
EOQ prevents shortage of inventories	%	30.8	24.5	16.5	20.4	7.8	100	3.46
EOQ does not take into account changing consumer demand	%	11.9	13.7	25.6	33.2	15.6	100	2.74
EOQ does not take into account seasonal changes in inventory costs	%	10.3	24.1	12.8	32.3	20.5	100	2.80
EOQ increases demand costs	%	25.9	20.8	18.6	16.8	17.9	100	3.18
EOQ reduces ordering costs	%	40.7	36.3	13.8	5.0	4.2	100	4.00
EOQ reduces carrying costs	%	43.6	20.5	23.1	5.6	7.2	100	3.87

3.2.2 Safety Stock Ordering

The study sought to establish the influence of safety stock ordering on procurement performance of public hospitals in Trans Nzoia County. The findings are presented in a five point Likerts scale where SA=strongly agree, A=agree, N=neutral, D=disagree, SD=strongly disagree, T=total and M=mean. From table 3 below, the respondents were asked whether hospitals always had safety stocks of all its inventories. The distribution of findings showed that majority of the respondents 35.9 percent strongly agreed that hospitals always had safety stocks of all its inventories, 25.6 percent of them were neutral, 23.1 percent of the agreed and 12.8 percent and 2.6 percent of them disagreed and strongly disagreed respectively. The respondents were also asked whether safety stock ordering absorbed the variability of customer demand. The results showed that majority of the respondents 53.3 percent strongly agreed that safety stock ordering absorbed the variability of customer demand, 15.4 percent of them agreed, 10.1 percent of them were neutral, 10.5 percent disagreed while 10.7 percent strongly disagreed respectively. The study sought to find out whether more safety stock ordering was given for inventories with less accurate forecast. The findings depicted that majority of the respondents 34.8 percent agreed that more safety stock ordering was given for inventories with less accurate forecast, 25.6 percent of them strongly agreed, another 21.6 percent of them were neutral while 15.4 percent and 2.9 percent of them disagreed and 2.4 percent strongly disagreed respectively. The study sought to establish whether safety stock ordering was used to protect the hospital from stock-outs caused by inaccurate planning. The findings showed that majority of the respondents 53.8 percent strongly agreed that safety stock ordering was used to protect the hospital from stock-outs caused by inaccurate planning, 30.7 percent of them agreed, 10.2 percent of them were neutral while 2.9 percent of them disagreed while 2.4 percent strongly disagreed.

Table 3: Safety Stock Ordering

Statements		SA	A	N	D	SD	T	M
The hospitals always have safety stocks of all its inventories	%	35.9	23.1	25.6	12.8	2.6	100	3.77
Safety stock ordering absorbs the variability of customer demand	%	53.3	15.4	10.1	10.5	10.7	100	3.92
More safety stock ordering is given for inventories with less accurate forecast	%	25.6	34.8	21.6	2.6	15.4	100	3.49
Safety stock ordering is used to protect the hospital from stock-outs caused by inaccurate planning	%	53.8	30.7	10.2	2.9	2.4	100	4.31
The hospitals strive to reduce the level of safety stock ordering to help keep inventory costs low	%	23.1	28.2	30.8	12.2	5.7	100	3.51
High level of safety stock ordering leads to high holding costs for the hospital	%	38.5	41.1	15.3	5.1	0.0	100	4.13
High level of safety stock ordering leads to high customer satisfaction	%	51.4	30.8	7.6	5.2	5.0	100	4.18

The study sought to examine whether hospitals strived to reduce the level of safety stock ordering to help keep inventory costs low. Majority of the respondents 30.8 percent were neutral to the statement, 28.2 percent of them agreed, 23.1 percent strongly agreed while 12.2percent and 5.7 percent of them disagreed and strongly disagreed respectively. The respondents were also asked whether high level of safety stock ordering led to high holding costs for the hospital. Majority of them, 41.1 percent agreed that high level of safety stock ordering led to high holding costs for the hospital, 38.5 percent of them strongly agreed, 15.3 percent were neutral while 5.1 percent of them disagreed. None of the respondents strongly agreed to the statement. Finally, the respondents were asked whether high level of safety stock ordering led to high customer satisfaction. Majority of the respondents 51.4 strongly agreed that high level of safety stock ordering led to high customer satisfaction, 30.8 percent of them agreed, 7.6 percent of them were neutral while 5.2 percent of them disagreed and 5.0 percent strongly disagreed.

3.2.3 First-In-First-Out Inventory Control Practice

The study sought to investigate the influence of First-in-First-out on procurement performance of public hospitals in Trans Nzoia County. The findings are presented in a five point Likerts scale where SA=strongly agree, A=agree, N=neutral, D=disagree, SD=strongly disagree, T=total and M=mean. From table 4 below, the study sought to find out whether inventories were always categorized under a particular purchased lot. The results showed that majority of the respondents 41.0 percent strongly agreed that inventories were always categorized under a particular purchased lot, 28.3 percent of them agreed, 23.1 percent were neutral and 7.6 percent of them disagreed. None of the respondents strongly disagreed to the statement. The study also sought to find out whether inventories were used in the same chronological order in which they were bought. The findings showed that majority of the respondents 38.5 percent strongly agreed that inventories were used in the same chronological order in which they are bought, 33.3 percent of them agreed, 20.1 percent of them were neutral, 5.4 percent of them disagreed and 2.7 percent strongly disagreed respectively. The respondents were asked whether FIFO resulted in a higher ending inventory. The findings showed that majority of them 33.5 percent strongly agreed that FIFO resulted in a higher ending inventory, 33.1 agreed, 15.4 percent of them were neutral, while 12.1 and 5.9 percent of them disagreed and strongly disagreed to the statement respectively. The respondents were also asked whether FIFO led to lower cost of goods sold. The findings revealed that majority of the respondents 46.2 percent agreed that FIFO led to lower cost of goods sold, 28.1 percent of them were neutral, 15.4 percent disagreed 5.3 percent strongly agreed while 5.0 percent of them strongly disagreed. The study also sought to establish whether FIFO encouraged efficient materials control. The findings of the study showed that majority of the respondents 56.0 percent strongly agreed that FIFO encouraged efficient materials control, 33.3 percent of them agreed, 5.9 percent of them disagreed, 2.5 percent strongly disagreed while 2.3percent of them were neutral. Finally, the respondents were asked whether FIFO was most appropriate when the size and cost of units were large. Majority of the respondents 41.0 percent strongly agreed that FIFO was most appropriate when the size and cost of units were large, 25.6 percent of them agreed, 17.8 percent of them were neutral while 10.4 percent of them strongly disagreed while 5.2 percent disagreed.

Table 4: First-In-First-Out Inventory Control Practice

Statements		SA	A	N	D	SD	T	M
Inventories are always categorized under a particular purchased lot	%	41.0	28.3	23.1	7.6	0.0	100	4.03
Inventory is used in the same chronological order in which they are bought	%	38.5	33.3	20.1	5.4	2.7	100	4.00
FIFO results in a higher ending inventory	%	33.5	33.1	15.4	12.1	5.9	100	3.77
FIFO leads to lower cost of goods sold	%	5.3	46.2	28.1	15.4	5.0	100	3.72
FIFO encourages efficient materials control	%	56.0	33.3	2.3	5.9	2.5	100	4.36
FIFO is most appropriate when the size and cost of units are large	%	41.0	25.6	17.8	5.2	10.4	100	3.82

3.2.4 Inventory Audit

The study sought to analyze the influence of inventory audit on procurement performance of public hospitals in Trans Nzoia County. The findings are presented in a five point Likerts scale where SA=strongly agree, A=agree, N=neutral, D=disagree, SD=strongly disagree, T=total and M=mean. From table 5 below, the study sought to establish whether inventory audit ensured timely and adequate identification and evaluation of inventories. The results of the study revealed that majority of the respondents 48.6 percent strongly agreed that 1nventory audit ensured timely and adequate identification and evaluation of inventories, 46.2 percent of them agreed, 2.7 percent of them were neutral while another 2.5 percent of them disagreed. None of them strongly disagreed to the statement. The study also sought to find out whether inventory audits reduced stock losses. The results showed that majority of the respondents 66.7 percent strongly agreed that inventory audits reduced stock losses, 23.1 percent of them agreed, 7.6 percent of them were neutral while 2.6 percent of them strongly disagreed. None of the respondents disagreed to the statement. The study further sought to find out whether Inventory audits ensure accurate and completed stock records. Majority of the respondents, 59.1 percent strongly agreed that inventory audits ensured accurate and completed stock records, 28.2 percent of them agreed, 10.2 percent of them were neutral while only 2.5 percent of them strongly disagreed. None of the respondents disagreed to the statement. The respondents were asked whether inventory audits enabled the hospital evade risks associated with stock such as unnecessarily high stock levels. Majority of them 53.8 percent strongly agreed that inventory audits enabled the hospital evade risks associated with stock such as unnecessarily high stock levels, 28.2 percent of them agreed, 10.7 percent of them disagreed while 7.3 percent of them were neutral. None of them strongly disagreed to the statement. The respondents were also asked whether inventory audit ensured compliance with organizational and sectorial standards. Majority of them 56.7 percent strongly agreed that inventory audit ensured compliance with organizational and sectorial standards, 26.1 percent of them agreed, 11.8 percent were neutral while

only 5.4 percent of them disagreed. None of the respondents strongly disagreed to the statement. The respondents were further asked whether inventory audit checked whether controls are in place to effectively manage risks related to internal stock control. The results of the study showed that majority of the respondents 53.8 percent agreed to the statement, 33.3 percent of them strongly agreed, 7.1 percent strongly disagreed while 5.8 percent of them were neutral. None of them disagreed to the statement. Finally, the respondents were asked whether inventory audits allowed effective monitoring of stock flow. Majority of them 53.8 percent strongly agreed that inventory audits allowed effective monitoring of stock flow, 38.3percent of them agreed, 7.4 percent of them strongly disagreed while 0.5 percent disagreed. None of the respondents were neutral to the statement.

Table 5: Inventory Audit

Statements		SA	A	N	D	SD	T	M
Inventory audit ensures timely and adequate identification and evaluation of inventories	%	48.6	46.2	2.7	2.5	0.0	100	4.38
Inventory audits reduce stock losses	%	66.7	23.1	7.6	0.0	2.6	100	4.51
Inventory audits ensures accurate and completed stock records	%	59.1	28.2	10.2	0.0	2.5	100	4.4.1
Inventory audits enables an the hospital evade risks associated with stock such as unnecessarily high stock levels	%	53.8	28.2	7.3	10.7	0.0	100	4.26
Inventory audit ensures compliance with organizational and sectorial standards	%	56.7	26.1	11.8	5.4	0.0	100	4.31
Inventory audit checks whether controls are in place to effectively manage risks related to internal stock control	%	33.3	53.8	5.8	0.0	7.1	100	4.05
Inventory audits allows effective monitoring of stock flow	%	53.8	38.3	0.0	0.5	7.4	100	4.31

3.2.5 Procurement Performance

To investigate the influence of inventory control practices on procurement performance of public hospitals in Trans Nzoia County. The findings are presented in a five point Likerts scale where SA=strongly agree, A=agree, N=neutral, D=disagree, SD=strongly disagree, T=total and M=mean. From table 6 below, the respondents were asked whether proper inventory control could reduce cost of inventory. Majority of them 51.3 percent strongly agreed proper inventory control could reduce cost of inventory, 35.9 percent of them agreed while 7.2 and 5.6 percent of them disagreed and strongly disagreed respectively. None of them was neutral towards the statement.

The respondents were also asked whether proper inventory control ensured delivery of quality inventories/services. Majority of the 54.3 percent strongly agreed that proper inventory control ensured delivery of quality inventories/services, 35.5 percent of them agreed, 5.6 percent of them were neutral while 2.1 percent and 2.5 percent of them disagreed and strongly disagreed respectively. The respondents were further asked whether proper inventory control improved customer satisfaction. Majority of them 46.1 percent agreed that proper inventory control improved customer satisfaction, 38.5 percent of the strongly agreed, 7.5 percent were neutral while 7.9 percent strongly disagreed to the statement. None of the respondents disagreed to the statement. The study sought to find out whether proper inventory control contributed to timely delivery of services/materials. The results of the study revealed that majority of the respondents, 64.1 percent strongly agreed that proper inventory control contributed to timely delivery of services/materials, 20.5 percent of them agreed, 10.2 percent of them were neutral while only 5.2 percent of them strongly disagreed respectively. None of the respondents disagreed to the statement. Lastly, the study sought to find out whether proper inventory control led to effectiveness of procurement processes. Majority of the respondents 59.0 percent strongly agreed that proper inventory control led to effectiveness of procurement processes, 25.6 percent of them agreed, 7.8 percent of them were neutral, 5.0 percent of them disagreed while 2.6 percent strongly disagreed to the statement.

Table 6: Procurement Performance

Statements		SA	A	N	D	SD	T	M
Proper inventory control can reduce cost of inventory	%	51.3	35.9	0.0	7.2	5.6	100	4.21
Proper inventory control ensures delivery of quality inventories/services	%	54.3	35.5	5.6	2.1	2.5	100	4.33
Proper inventory control improves customer satisfaction	%	38.5	46.1	7.5	0.0	7.9	100	4.08
Proper inventory control contributes to timely delivery of services/materials	%	64.1	20.5	10.2	0.0	5.2	100	4.38
Proper inventory control leads to effectiveness of procurement processes	%	59.0	25.6	7.8	5.0	2.6	100	4.33

3.3 Inferential Statistics

3.3.1 Pearson Correlation Analysis

The study sought to establish the strength of the relationship between independent and dependent variables of the study. Pearson correlation coefficient was computed at 95 percent confidence interval (error margin of 0.05). Table 4.8 illustrates the findings of the study. As shown on Table 7 below, the p-value for economic order quantity was found to be 0.001 which is less than the significant level of 0.05, ($p<0.05$). The result indicated that Pearson Correlation coefficient (r-value) of 0.515, which represented an average, positive relationship between

economic order quantity and procurement performance. As shown on Table 7 below, the p-value for safety stock ordering was found to be 0.000 which is less than the significant level of 0.05, (p<0.05). The result indicated that Pearson Correlation coefficient (r-value) of 0.594, which represented an average, positive relationship between safety stock ordering and procurement performance. As shown on Table 7 below, the p-value for first-in-first-out was found to be 0.002 which is less than the significant level of 0.05, (p<0.05). The result indicated that Pearson Correlation coefficient (r-value) of 0.489, which represented an average, positive relationship between first-in-first-out and procurement performance. As shown on Table 7 below, the p-value for inventory audit was found to be 0.000 which is less than the significant level of 0.05, (p<0.05). The result indicated that Pearson Correlation coefficient (r-value) of 0.768, which represented a strong, positive relationship between inventory audits and procurement performance.

Table 7: Correlations

		Economic Order Quantity	Safety Stock Ordering	First-in-first-out	Inventory Audit	Procurement performance
Economic Order Quantity	Pearson Correlation	1	.857**	.534**	.734**	.515**
	Sig. (2-tailed)		.000	.000	.000	.001
	N		39	39	39	39
Safety Stock Ordering	Pearson Correlation		1	.763**	.862**	.594**
	Sig. (2-tailed)			.000	.000	.000
	N			39	39	39
First-in-first-out	Pearson Correlation			1	.767**	.489**
	Sig. (2-tailed)				.000	.002
	N				39	39
Inventory Audit	Pearson Correlation				1	.768**
	Sig. (2-tailed)					.000
	N					39
Procurement performance	Pearson Correlation					1
	Sig. (2-tailed)					
	N					39

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

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

3.3.2 Multiple Linear Regression Analysis

Model Summary

Table 8(a) shows that the coefficient of correlation (R) is positive 0.790. This means that there is a positive correlation between inventory control practices and procurement performance among selected public hospitals

in Trans Nzoia County. The coefficient of determination (R Square) indicates that 62.4 of procurement performance among public hospitals in Trans Nzoia County was influenced by inventory control practices. The adjusted R^2 however, indicates that 57.9% of procurement performance among selected public hospitals in Trans Nzoia County was influenced by inventory control practices, leaving 42.1% to be influenced by other factors that were not captured in this study.

Table 8(a): Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.790[a]	.624	.579	2.43775

a. Predictors: (Constant), Economic order quantity, Safety stock ordering, FIFO, Inventory Audits

Analysis of Variance

Table 4.10 shows the Analysis of Variance (ANOVA). The f-value of the ANOVA was found to be 14.077 while p-value was 0.000 which is < 0.05. These results indicated that the model is statistically significant in predicting how inventory control practices influences procurement performance among selected public hospitals in Trans Nzoia County. The results also indicate that the independent variables are predictors of the dependent variable.

Table 8(b): ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	334.617	4	83.654	14.077	.000[b]
	Residual	202.050	34	5.943		
	Total	536.667	38			

a. Dependent Variable: Procurement performance

b. Predictors: (Constant), Economic order quantity, Safety stock ordering, FIFO, Inventory Audits

Regression Coefficients

From the Coefficients table, Table 8 (c) the regression model can be derived from the unstandardized coefficients as follows:

$$Y = 5.703 + 0.031X_1 + 0.107X_2 + 0.216X_3 + 0.816X_4$$

The results in table 8 (c) indicated that all the independent variables have a significant positive effect on procurement performance. The most influential variable is inventory audit with a regression coefficient of 0.816 (p-value = 0.000), followed by FIFO with a coefficient of 0.216 (p-value = 0.049) then safety stock ordering with a coefficient of 0.107 (p-value = 0.036) and lastly economic order quantity with a coefficient of 0.031 (p-

value = 0.048). According to this model when all the independent variables values are zero, procurement performance of will have a score of 5.703.

Table 8 (c): Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	5.703	2.689		2.121	.041
	Economic Order Quantity	.031	.129	.053	.241	.048
1	Safety Stock Ordering	.107	.244	.136	.439	.036
	First-in-first-out	.216	.188	.213	1.147	.049
	Inventory Audits	.816	.166	1.088	4.905	.000

a. Dependent Variable: Procurement Performance

The findings of the study are in agreement with the findings of Mwirigi & Moronge that stated that procurement audit had significant effect on performance of public hospitals in Nairobi [19]. Mikuna & Osoro also concluded that the inventory control practices affected the service delivery of health of public hospitals Trans-Nzoia County Referrals Hospitals [17].

3.3.3 Hypothesis Testing

Hypothesis One

Ho$_1$: Use of economic order quantity does not have significant influence on procurement performance of public hospitals in Trans Nzoia County.

From Table 4.9 (c) above, economic order quantity (β = 0.031) was found to be positively related to procurement performance. From t-test analysis, the t -value was found to be0.241 and the ρ-value 0.048. Statistically, this null hypothesis was rejected because $\rho<0.05$. Thus, the study accepted the alternative hypothesis and it concluded that economic order quantity had significant influence on procurement performance of public hospitals in Trans Nzoia County. The findings of the study are in agreement with the findings of Ogbo that stated that EOQ can help minimize the level of inventory. The cash saved can be used for some other business purpose or investment.EOQ also takes into account inventory holding costs such as storage, ordering costs and shortage costs. Economic order quantity determines the point at which the combination of order costs and inventory costs are the least. EOQ takes into account the timing of reordering, the cost incurred to place an order and costs to store merchandise [23].

Hypothesis Two

Ho$_2$: Safety stock ordering does not have significant influence on procurement performance of public hospitals in Trans Nzoia County.

From Table 4.9 (c) above, safety stock ordering ($\beta = 0.107$) was found to be positively related to procurement performance. From t-test analysis, the t -value was found to be 0.439 and the ρ-value 0.036. Statistically, this null hypothesis was rejected because $\rho<0.05$. Thus, the study accepted the alternative hypothesis and it concluded that safety stock ordering had significant influence on procurement performance of public hospitals in Trans Nzoia County. The findings of the study are in line with the findings of Mustaffa & Potter [18] that found that the less accurate the forecast, the more safety stock is required to ensure a given level of service. Too much safety stock can result in high holding costs of inventory. In addition, products that are stored for too long a time can spoil, expire, or break during the warehousing process. Too little safety stock can result in lost sales and, in the thus a higher rate of customer turnover. As a result, finding the right balance between too much and too little safety stock is essential. Nollet and his colleagues [20] further stated that safety stock is used as a buffer to protect organizations from stock-outs caused by inaccurate planning or poor schedule adherence by suppliers.

Hypothesis Three

Ho$_3$: First-in-First-out inventory control practice does not have significant influence on procurement performance of public hospitals in Trans Nzoia County.

From Table 4.9 (c) above, FIFO ($\beta = 0.216$) was found to be positively related to procurement performance. From t-test analysis, the t -value was found to be 1.147 and the ρ-value 0.049. Statistically, this null hypothesis was rejected because $\rho<0.05$. Thus, the study accepted the alternative hypothesis and it concluded that FIFO had significant influence on procurement performance of public hospitals in Trans Nzoia County. The findings of the study are in agreement with the study of Watson & Zhang [27] that stated that FIFO method assumes that inventory purchased first is used first and newer inventory remains unused. A study by David [8] stated that materials used are drawn from the cost record in a logical and systematic manner and movement of materials in a continuous, orderly manner that represents a condition that is necessary and consistent with the efficient materials control. FIFO method is usually recommended whenever: the size and cost of units are large; materials are categorized under a particular purchased lot; two or three different receipts of the materials are on a materials card at the same time.

Hypothesis Four

Ho$_4$: Inventory audit does not have significant influence on procurement performance of public hospitals in Trans Nzoia County.

From Table 4.9 (c) above, inventory audit ($\beta = 0.816$) was found to be positively related to procurement performance. From t-test analysis, the t -value was found to be 4.905 and the ρ-value 0.000. Statistically, this null hypothesis was rejected because $\rho<0.05$. Thus, the study accepted the alternative hypothesis and it concluded that inventory audit had significant influence on procurement performance of public hospitals in Trans Nzoia County. The findings of the study are in line with the findings of Johnstone [13], which illustrated that inventory audit ensures timely and adequate identification and evaluation of inventories.

Inventory audits reduce stock losses and ensure stock accuracy. Inventory audits enables an organization evade risks associated with stock such as; inadequate and inappropriate stock, unnecessarily high stock levels, inaccurate and incomplete stock records, poor stock security and obsolete stock.

4. Conclusion

The study concluded that economic order quantity had significant influence on procurement performance of public hospitals in Trans Nzoia County. EOQ minimized the cost of inventory, minimized amount of cash tied up in the inventory balance, reduced ordering costs, carrying costs but increased demand costs. EOQ gave the hospital inventory reorder point and prevented shortage of inventories. However, EOQ did not take into account changing consumer demand and seasonal changes in inventory costs. Safety stock ordering had significant influence on procurement performance of public hospitals in Trans Nzoia County. Hospitals always had safety stocks of all its inventories, safety stock ordering absorbed the variability of customer demand and safety and was used to protect the hospitals from stock-outs caused by inaccurate planning. High level of safety stock ordering led high customer satisfaction. However, high level of safety stock ordering led to high holding costs for the hospitals and majority of the respondents were unsure whether the hospitals strived to reduce the level of safety stock ordering to help keep inventory costs low. First-in-first out inventory control practice had a positive significant influence on procurement performance of public hospitals in Trans Nzoia County. Inventories were always categorized under a particular purchased lot; inventories were used in the same chronological order in which they are bought. In addition, FIFO encouraged efficient material control and it was most appropriate when the size and cost of units were large. FIFO resulted in a higher ending inventory and lower cost of inventories. Inventory audit had a positive significant influence on procurement performance of public hospitals in Trans Nzoia County. Inventory audit ensured timely and adequate identification and evaluation of inventories, enabled the hospitals evade risks associated with stock such as unnecessarily high stock levels and ensured compliance with organizational and sectorial standards. In addition, inventory audits reduced stock losses, ensured accurate and completed stock records and allowed effective monitoring of stock flow.

5. Recommendations

Hospitals should find a complementary inventory control practice to Economic Order Quantity which takes into account changing consumer demand and seasonal changes in inventory costs. Hospitals should not have safety stock ordering levels which are so high as these results in high inventory holding costs for the hospitals. The level of safety stock ordering should just be maintained at a level that will help keep inventory costs low while ensuring customer satisfaction. Hospitals should strive to make extensive use of FIFO inventory control practice since it was found to result in a higher ending inventory and lower cost of goods. Hospitals should strive to have inventory audits as regularly as possible because it reduces risks associated with stock such as unnecessarily high stock levels, reduces stock losses and ensures compliance with organizational and sectorial standards as well as ensure accurate and completed stock records.

Acknowledgement

References

[1]. Barsemoi, H., Mwangagi, P., & Asienyo., B. A (2014).Factors Influencing Procurement Performance in Private Sector in Kenya. International Journal of Innovation and Applied Studies, 9(4): 634-642

[2]. Blackburn, J. (2015). Fundamentals of Purchasing and Inventory Control for Certified Pharmacy Technicians. Texas Tech University, Health Sciences Center, School of Pharmacy.

[3]. Cagliano, A. C., DeMarco, A., Rafele, C., & Volpe, S. (2017). Using system dynamics in warehouse management: a fast-fashion case study. Journal of Manufacturing Technology Management, 22(2), 171-188.

[4]. Chimwami, B. I, Iravo, M. A & Tirimba, O. I (2014). Factors Influencing Procurement Performance in the Kenyan Public Sector: Case Study of the State Law Office. International. Journal of Innovation and Applied Studies, 9(4): 1626-1650

[5]. Coleman, B. (2014). Determining the Correct Service Level Target. Production and Inventory Management Journal, 41(1):169-176

[6]. Connelly, L. M. (2016). Pilot Studies. Medsurg Nursing, 17(6), 411-422.

[7]. Cooper, R.D. & Schindler, P.S. (2016). Business Research Methods. New Delhi: Tata

[8]. David, R. (2015). The future of managing electronic records. Records Management Journal, 15(3): 128 –130.

[9]. Dobler, J. B & Burt, M. (2016). Purchasing management. (6th ed.). Mcgraw hill international Edition.

[10]. Ducombe, R., & Boateng, R. (2016). Mobile Phones and Financial Services in Developing Countries: A Review of Concepts, Methods, Issues, Evidence and Future Research. Third World Quarterly, 30(7), 1237-1258.

[11]. Fraenkel, J. R., & Wallen, N. E. (2014). How to Design and evaluate Research in Education. New york: McGraw Hill

[12]. Irungu, B. K., &Wanjau, K. L. (2016). Effectiveness of vendor managed inventory systems in retail supermarkets in Kenya. International Journal of Business and Public Management, 1(1), 85-89.

[13]. Johnstone, K. G. (2014). Risk Based Approach to Conducting Audit. South Western Cengage Learning.

[14]. Kothari, C. R. (2016). Research Methodology: Methods and techniques (2 Revised ed.). New Delhi: New Age International Publisher.

[15]. Miller, R. (2015). Inventors Control: Theory and Practice. New Jersey: Prentice Hall.

[16]. Mugenda, O. M., & Mugenda, A. G. (2013). Research methods: Quantitative and qualitative Approaches. Nairobi: Acts Press.

[17]. Mukuna, K. D & Osoro, A. (2018). Factors affecting inventory control practices on service delivery in county government hospitals in Kenya (a case of Trans Nzoia County). International Journal of Recent

Research in Commerce Economics and Management 5(2): pp 33-54

[18]. Mustaffa. N. H & Potter. A. (2014), Healthcare supply chain management in Malaysia: a case study. Supply Chain Management: An International Journal.1(3), 234–243

[19]. Mwirigi, B., &Moronge, M. (2019). Role of procurement audit on performance of public hospitals in Nairobi County, Kenya. The Strategic Journal of Business & Change Management, 6 (2), 1683 –1699.

[20]. Nollet, J., Ponce, S., & Campbell, M. (2015). About strategy and strategies in supply management. Journal of Purchasing and Supply Management, 11(2), 129-140

[21]. Nyabwanga, R. N., &Ojera, P. (2014). Inventory control practices and business performance for small-scale enterprises in Kenya.KCA Journal of Business Management, 4(1), 11-28

[22]. Nzuza, Z. W. (2014). Factors affecting the success of inventory control in the Stores Division of the eThekwini Municipality, Durban: a case study. Durban, South Africa: Durban University of Technology.

[23]. Ogbo, A.I. (2014). Production and Operations Management. Enugu: De-verge Agencies Ltd

[24]. Power, D. (2015). Supply chain management integration and implementation: A literature review. Supply Chain Management: An International Journal, 10(4), 252-263.

[25]. Tage (2016) Supply Chain Management: A new Challenge for Researchers and Managers in Logistics. The International Journal of Logistics Management, 10(2), 41-54

[26]. Waigwa, M. W. & Njeru, A. (2016). Factors influencing management of procurement in public security agencies: A case of Kenya Police Service. International Academic Journal of Procurement and Supply Chain Management, 2 (2), 20-40

[27]. Watson N. & Zhang Y. (2005) Decentralized serial supply chains subject to order delays and information distortion, Manufacturing and Service Operations Management 7, 152-168

[28]. Zikmund, M., (2015). Business Research Methods. Fort Worth: Dryden press.

6. Appendices

Appendix 1: Introduction Letter

To Whom It May Concern

Dear Sir,

RE: REQUEST TO COLLLECTION OF DATA

I am an MSc Procurement and Logistics student at Jomo Kenyatta University of Agriculture and Technology. I am expected to undertake a research study on the influence of inventory control practices on procurement performance of public hospitals in Trans Nzoia County as one of the requirements of the program. I am therefore, seeking your assistance in filling the questionnaire attached. The attached questionnaire will take a few minutes to complete. Kindly answer all the questions. This will be for academic purposes only and utmost confidentiality will be upheld. Only summary results will be made public. No one else except the institution will have access to these records. Your cooperation will be appreciated.

Yours Sincerely,

Edwin Barasa

Appendix II: Questionnaire

Please tick the most appropriate box that corresponds to your answer

Section A: Background Information

1. Gender   Male ( )   female ( )

2. Age   18-30 years ( )   31-40 years ( )   41-50 years ( )

51-60 years ( )   61 and above ( )

3. Highest level of education

Certificate ( )   Diploma ( )   Bachelors ( )   Masters ( )   PhD ( )

4. For how long have been working in this Institution?

Less than 5 years ( )   5 – 10 years ( )   11 – 15 years ( )

16 – 20 years ( )   Over 20 years ( )

5. Job designation and department...

Section B: Use of Economic Order Quantity

6. a) Does Economic Order Quantity influence procurement performance?

Yes ( )   No ( )

b) If yes, state how.

………
………………………………………………………………………

c) Kindly state your level of agreement to the following statements where 5=strongly   agree,   4=agree, 3=neutral, 2=disagree and 1=strongly disagree.

Table 9

Statement	5	4	3	2	1
EOQ minimize the cost of inventory					
EOQ minimize amount of cash tied up in the inventory balance					
EOQ gives the hospital inventory reorder point					
EOQ prevents shortage of inventories					
EOQ does not take into account changing consumer demand					
EOQ does not take into account seasonal changes in inventory costs					
EOQ increases demand costs					
EOQ reduces ordering costs					
EOQ reduces carrying costs					

Section C: Safety Stock Ordering

7.   a) Does safety stock ordering influence procurement performance?

Yes ( )   No ( )

b) If yes, state how.

………………………………………………………………………………………………

c) Kindly state your level of agreement to the following statements where 5=strongly   agree,   4=agree, 3=neutral, 2=disagree and 1=strongly disagree.

Table 10

Statement	5	4	3	2	1
The hospitals always have safety stocks of all its inventories					
Safety stock ordering absorbs the variability of customer demand					
More safety stock ordering is given for inventories with less accurate forecast					
Safety stock ordering is used to protect the hospital from stock-outs caused by inaccurate planning					
The hospitals strive to reduce the level of safety stock ordering to help keep inventory costs low					
High level of safety stock ordering leads to high holding costs for the hospital					
High level of safety stock ordering leads to high customer satisfaction					

Section D: First in First out

8.   a) Does First-in-First-out influence procurement performance?

Yes ( )   No ( )

b) If yes, state how.

      ………………………………………………………………………………………

c) Kindly state your level of agreement to the following statements where 5=strongly   agree,   4=agree,
3=neutral, 2=disagree and 1=strongly disagree.

Table 11

Statement	5	4	3	2	1
Inventories are always categorized under a particular purchased lot					
Inventory is used in the same chronological order in which they are bought					
FIFO results in a higher ending inventory					
FIFO leads to lower cost of goods sold					
FIFO encourages efficient materials control					
FIFO is most appropriate when the size and cost of units are large					

Section E: Inventory audit

9.   a) Does inventory audit influence procurement performance?

Yes ( )   No ( )

b) If yes, state how.

      ………………………………………………………………………………………

c) Kindly state your level of agreement to the following statements where 5=strongly   agree,   4=agree,
3=neutral, 2=disagree and 1=strongly disagree.

Table 12

Statement	5	4	3	2	1
Inventory audit ensures timely and adequate identification and evaluation of inventories					
Inventory audits reduce stock losses					
Inventory audits ensures accurate and completed stock records					
Inventory audits enables an organization evade risks associated with stock such as unnecessarily high stock levels					
Inventory audit ensures compliance with organizational and sectorial standards					