

**INVENTORY MANAGEMENT PRACTICES AND ORGANIZATIONAL  
PERFORMANCE OF NATIONAL MEDICAL STORES,  
ENTEBBE MUNICIPALITY, UGANDA**

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**INVENTORY MANAGEMENT PRACTICES AND ORGANIZATIONAL  
PERFORMANCE OF NATIONAL MEDICAL STORES,  
ENTEBBE MUNICIPALITY, UGANDA**

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(Accounting and Finance), Bugema University

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## ACCEPTANCE SHEET

This thesis entitled “**INVENTORY MANAGEMENT PRACTICES AND ORGANIZATIONAL PERFORMANCE OF NATIONAL MEDICAL STORES IN ENTEBBE MUNICIPALITY**” prepared and submitted by **MUSISI PETER**, in partial fulfillment of the requirements for the degree of **MASTERS OF BUSINESS ADMINISTRATION (Accounting and Finance)**, is hereby accepted.

  
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## DECLARATION

I, **MUSISI PETER**, to the best of my knowledge and understanding do hereby declare that this thesis entitled **“INVENTORY MANAGEMENT PRACTICES AND ORGANIZATIONAL PERFORMANCE OF NATIONAL MEDICAL STORES, ENTEBBE MUNICIPALITY, UGANDA”** is my own work and has not been presented in any higher learning institution for an academic award.

Signed.....

Musisi Peter

.....  
Date signed

## DEDICATION

This thesis is dedicated to my beloved family members: that is my dear wife, Mrs. Ruth Musisi; my sons: Segawa Charles and Kiggundu Daniel; my daughters: Namuli Dorcus and Tsubira Dorothy. I also dedicate this work to my sister-in-law Birungi Deborah, other relatives and friends for their moral and material support extended to me for the accomplishment of my Master's Degree. May God richly bless them abundantly.

## BIOGRAPHICAL SKETCH

The author was born on 24<sup>th</sup> September 1960 in Mpigi Health Centre- Mpigi Uganda. Musisi Peter is the third born in the family of late Katoto M. Yoseph and late Nanyonga Nasitaziya of Mpigi in Uganda. He completed primary school in 1977 at Kisammula Primary School located in Mpigi District. He later joined Bugema Adventist Primary School in 1983 for primary leaving. In 1984, he joined Bugema Adventist College and later joined Kololo Senior Secondary School in 1985 and completed his four years in 1987.

In 1988, he joined Uganda Co-operative College, Kigumba where he obtained a certificate in Co-operative Business Administration in 1990. In 1994, the author joined Bugema Adventist College and then Bugema University in 2005 for his first degree and graduated in 2010 with a second class lower. In August 2010, he joined the School of Graduate Studies of Bugema University, Kampala Campus and pursued a Master of Business Administration in Accounting. While pursuing his master's degree, the author has been working with Bugema University as a Teaching Assistant.

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## LIST OF ABBREVIATIONS

NMS	:	National Medical Stores
SCT	:	Strategic Choice Theory
RFID	:	Radio Frequency Identification Device
ERP	:	Enterprise Resource Planning
JIT	:	Just - In - Time
SIC	:	Standard Industrial Classification
SSEs	:	Small Scale Enterprises
OOS	:	Out of Stock
ILI	:	Imperial Leanness Indicator
US	:	United States
SAQ	:	Self- Administered Questionnaire
CVI	:	Content Validity Index
JMS	:	Joint Medical Store
SPSS	:	Statistical Package for Social Scientists
HODs	:	Head of Departments

## ABSTRACT

**MUSISI PETER**, School of Graduate Studies, Bugema University, Kampala, Uganda. October, 2015. **“INVENTORY MANAGEMENT PRACTICES AND ORGANIZATIONAL PERFORMANCE OF NATIONAL MEDICAL STORES, ENTEBBE MUNICIPALITY, UGANDA”**

**Supervisor: Abuga Mokono Isaac, PhD**

The study objectives were: to establish the level of inventory management practices by NMS, Entebbe Municipality, to assess the level of organizational performance of NMS, and to establish the relationship between inventory management practices and organizational performance of NMS. It was also hypothesized that, there was no significant relationship between inventory management practices and organizational performance of NMS.

This study was based on a descriptive survey and correlation research designs with both qualitative and quantitative approaches. A total of 66 respondents were used in the study. The Self-Administered Questionnaire (SAQ) was used as the primary instrument of data collection.

The findings of the study revealed that; inventory management practices had a grand mean of 3.18, which meant that inventory shrinkage, records accuracy, investment and turnover was managed averagely; level of organizational performance had a moderate grand mean of 3.17 in terms of cost reduction and customer satisfaction; there was a moderate positive correlation between inventory management practices and organizational performance, at  $r = 0.653$ . The researcher rejected the null hypothesis since the p- value (0.000) was less than the level of significance (0.01). The study concludes that inventory management practices affects NMS performance. It was recommended that inventory records accuracy in NMS should be strengthened and procurement plans should be improved.

## CHAPTER ONE

### INTRODUCTION

#### **Background of the Study**

All over the world, organizational managers are faced with many difficulties in trying to uplift the organizational performance of their organizations. Daft (2000) defines organizational performance as the organization's ability to attain its goals by using resources in an efficient and effective manner. In his view, improved organizational performance can be achieved through: efficient utilization of resources such as human resources, effective inventory management, maintaining appropriate costs and customer satisfaction levels. In this study, organizational performance means cost reduction and customer satisfaction. Vedran (2009) and Pandey (2004) attest that effective inventory management is a very important aspect which should be managed well in order to realize improved organizational performance of a business.

Rajeev (2008), defines inventory management as the management of different inventory components (raw materials, work-in progress and finished goods) by properly managing the crucial determinants of inventory levels considering the specific features of organizations. In this study inventory management practices are defined as; inventory shrinkage, inventory records accuracy, inventory investment and inventory turnover. Therefore, the management of inventory means managing each of the components in terms of: cost effectiveness of minimizing losses, effective records keeping, effective measure of investment and effective measure of goods distributed or sold (Pandey 2004). Vedran (2009) attests that effective inventory management leads to better organizational performance.

In Kenya, a study in public health institutions was done to investigate the effect of inventory management practices on organizational performance (Oballah, 2015). The study revealed that inventory investment and inventory records accuracy had a positive influence on organizational performance while inventory shrinkage had a negative effect on organizational performance. Therefore, there was a need for an organization to manage its inventory investment by ensuring that the right amount of stock is kept at all times.

In Uganda, Namakajjo (2011) found out that inventory management practices are effective on inventory turnover. As a result, the effectiveness of inventory and store management affects turnover performance. He further noted that to achieve an upward trend in turnover growth, inventory management practices must be carried out efficiently.

Poor inventory management can lead to poor performance. For example, when an audit was conducted at Bugema University, inventory management was of a concern. The audit revealed, however, that there were no accurate stock records. In this case, the financial performance was poor and therefore, a disclaimer opinion was issued (Bugema University, 2006).

National Medical Stores procures and stores pharmaceuticals and medical supplies, and at the same time has the sole responsibility of distributing and delivering supplies to Healthy Centers and hospitals spread throughout the country. Unfortunately, there had been an outcry that the essential drugs and medical supplies were always not available in these healthy centers and hospitals; and yet a lot of them got expired in the premises of National Medical Stores (NMS), hospitals, and health units (Auditor General's Report, 2010). Thus, the current study sought to investigate



how inventory management practices affected performance of National Medical Stores, Entebbe Municipality.

### **Statement of the Problem**

The National Medical Stores and its partners have put in place efforts to provide the country with health commodities (medicines and medical logistics) to meet the requirements of clients (people who need the healthcare); however, according to the Auditor General's Report (2010), it was found out that drugs worth Ushs 6.7 billion expired between July 2005 and June 2008 in the NMS stores . At the same time NMS could not supply all the drugs ordered by health units. A monthly storage cost of Ushs 36 million was wasted on these expired drugs and their subsequent destruction cost was Ushs 700 million. Similarly, the Report to Parliament (2015) pointed out that NMS continued to have and accumulate expired drugs while also experiencing stock outs of certain drugs over the three years under review and had failed many times to deliver drugs to the facilities in time. The amount could have been channeled to other priority activities badly needed by the citizens, such as the recruitment of additional medical personnel in health facilities like health centers II and III (Auditor General, 2010). The probable cause for this could be linked to the way inventory management practices are being practiced.

The researcher therefore carried out this study to establish the effect of inventory management practices on organizational performance of National Medical Stores in order to help the organization improve its performance.

### **Research Questions**

1. What is the level of inventory management practices in National Medical Stores in Entebbe Municipality?

2. What is the level of organizational performance in National Medical Stores in Entebbe Municipality?
3. Is there any significant relationship between inventory management practices and organizational performance of National Medical Stores in Entebbe Municipality?

### **General Objective**

The purpose of the study was to establish the effect of inventory management practices on organizational performance with the view of examining the management of the components of inventory and how these affect organizational performance of National Medical Stores, Entebbe Municipality.

### **Specific Objectives of the Study**

1. To establish the level of inventory management practices practiced in National Medical Stores, Entebbe Municipality.
2. To assess the level of organizational performance of National Medical Stores, Entebbe Municipality.
3. To establish the relationship between inventory management practices and organizational performance of National Medical Stores, Entebbe Municipality.

### **Hypothesis of the Study**

There is no significant relationship between inventory management practices and organizational performance.

### **Significance of the Study**

The findings of the study were expected to benefit several groups of people:

**National Medical Stores** can find the results of this study useful as it contributes to the understanding of the relationship between inventory management practices and organizational performance, hence improving on service delivery in the healthy sector. It also may help in the management's decision making.

**Hospitals and Health Centers:** The researcher hopes that the findings of this research may enlighten the inventory management practitioners in healthcare units on the effect of inventory management and its importance in improving the organizational performance and also to help the inventory managers in decision making concerning the suitable level of inventory to be kept in the hospitals/health centers so as to ensure the customers are accorded the best service level.

**Government:** National Medical Authority in conjunction with Ministry of Health can use the findings of this study to have a strong base for formulating health service policies which may enable to minimize the wastage and losses of drugs and other medical supplies by emphasizing proper inventory management practices.

**Researchers:** The researcher also hopes that the findings of this study can form the basis on which future researchers may build further studies in the area of inventory management.

### **Scope of the Study**

The study was conducted in Entebbe Municipality, where National Medical Stores has its headquarter. National Medical Stores is responsible for procurement and distribution of drugs and medical supplies to public hospitals and health centers in the country. Drugs and medical supplies were considered to measure the effect of inventory management practices on organizational performance in this study. This study focused on management staffs, internal Auditor, heads of departments and other

staff members as respondents. The content scope consisted of the components of inventory management practices (which are; inventory shrinkage, inventory records accuracy, inventory investment and inventory turnover and organizational performance (which are; cost reduction and customer satisfaction)).

In conducting this research, the researcher looked at inventory management practices in terms of inventory shrinkage, inventory records accuracy, inventory investment and inventory turnover as the independent variables and how they affect organizational performance in terms of cost reduction and customer satisfaction as the dependent variables. The study was carried out to cover financial years 2012, 2013 and 2014.

### **Limitations of the Study**

This study considered the aspect of inventory management practices (inventory shrinkage, inventory records accuracy, inventory investment and inventory turnover) as a factor that influenced organizational performance. Hence, the researcher was unable to handle other factors such as management skills, staff recruitment and administrative expenditure that may affect organizational performance. That means the results cannot be compared with studies based on other variables (indicators) of organizational performance.

The study was limited to the descriptive survey and correlation research designs whereby the questionnaire and interview guide were used. The methods used have their limitations which, for instance, would not allow the data to be compared.

## **Theoretical Framework**

The study adopted the strategic choice theory (SCT) developed by Child (1972) states that: “Organizational structure is partly determined by the contingencies and partly also results from the choice of decision makers”. The theory is to be adapted by this study because of the relationship between top management choices and organization performance as well as interaction of the internal and external organization.

The theory links inventory management to organizational performance in the sense that if right decisions are made on how inventory should be managed, then the organization is said to have efficient inventory management practices which are important for the growth of the organization and this is an indicator of good organizational performance. On the contrary, an organization that makes poor decisions on inventory management then signifies dangers of ineffective inventory management practices which can result into a retarded organizational performance.

Campling and Michelson (1998) established a strategic choice model that depicts the interdependence among the environment and organizations, actions and overall firm performance. The model aims at achieving high performance standards in order to increase efficiency where there are a limited resource, the theory failed to give much importance contextual factors like environment, technology and scale of operation into consideration and only considered how organizational structure aid in performance of organization.

Child (1972) further suggest that any organization with managers given power and responsibilities to direct and make decision regarding factors like inventory investment and the amount of inventory to carry have significant effects on organizational outcomes as well as performance. SCT argues that the right

management choice will depend on environmental factors like suppliers, purchasing and inventory management decision made by the management. Ketchen and Hult (2007) suggest that SCT views managers as personnel who are downstream decision makers directing decision and changing process in organization. Change or variations can be caused by contextual factors including environmental conditions and technology. Using new technology in inventory management such as RFID, bar codes and ERP systems are some technological changes that require decision making at corporate level with support from both business and functional level.

The theory fits in this study since the inventory management practices are adopted by the managers based on the choices or decisions that drive their organizations on high-level. Different organizations do things differently and this depends on their inventory practices which they opt to use in order to achieve the organizational goals and objectives. In this case, whatever inventory management practices adopted depend entirely on the choice of management.

### **Conceptual Framework**

The conceptual framework shows the independent and dependent variables used in the study. The independent variables were inventory management practices which include inventory shrinkage, inventory records accuracy, inventory investment and inventory turnover. The dependent variable is organizational performance which includes cost reduction and customer satisfaction. Vedran (2009) attests that if inventory management is managed well, it leads to improved organizational performance.

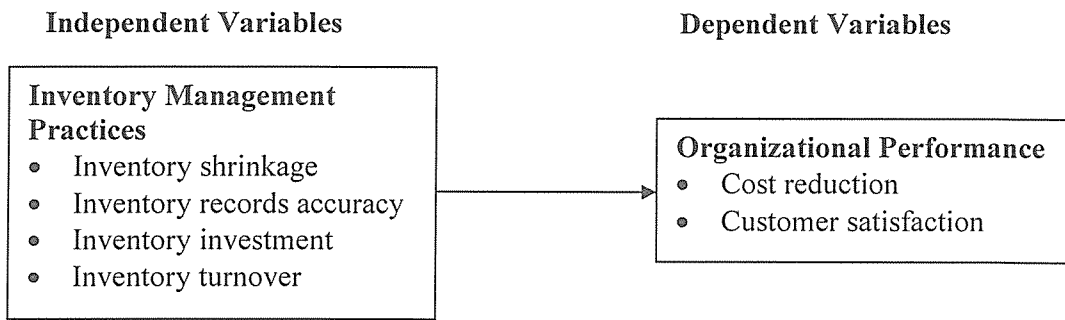


Figure 1: Conceptual Framework

Developed for the study with some information from NarasImhaml, Dennis N, McLeavey and Peter J. Billington, 2000; Oballah, 2015

### Operational Definition of Terms

**Inventory Management Practices:** Inventory is the total amount of commodities or materials contained in a storehouse or warehouse at a given time. Inventory Management Practices refer to the management of each of the components of inventory which are; inventory shrinkage, Inventory records accuracy, inventory investment and inventory turnover. The effectiveness of inventory management depends on the effective management of each of the components. In this study, inventory management was measured using a 5 point Likert Scale (questionnaire), it was analyzed using descriptive statistics and interpreted using the mean range of likert scale presented as means and standard deviations. In this case, if the result(the mean value) falls within; 1.00-1.79, it meant the level of inventory management is very low, 1.80-2.59 meant the level of inventory management is low, 2.60-3.39 meant the level of inventory management is moderate, 3.40-4.19 meant the level of inventory management is high and 4.20-5.00 meant the level of inventory management is very high.

**Inventory Shrinkage:** Refers to losses resulting from medicine expiration, medicine damages, medicine obsolesce (medicine purchased not meeting intended

purposes). This was examined by considering the expired drugs and stock outs. In this case, inventory shrinkage was measured using a 5- point Likert Scale (questionnaire), it was analyzed using descriptive statistics and interpreted using the mean range of Likert scale presented as means and standard deviations. In this case, if the result (the mean value) falls within; 1.00-1.79 meant the level of inventory shrinkage is very low, 1.80-2.59 it meant the level of inventory shrinkage is low, 2.60-3.39 meant level of inventory shrinkage is moderate, 3.40-4.19 meant the level of inventory shrinkage is high and 4.20-5.00 meant the level of inventory shrinkage is very high.

**Inventory Records Accuracy:** This was examined by considering the accuracy of documents such as purchase orders, delivery notes and receipts and so on. In this case, Inventory records accuracy was measured using a 5- point Likert Scale (questionnaire), it was analyzed using descriptive statistics and interpreted using the mean range of Likert scale presented as means and standard deviations. In this case, if the result (the mean value) falls within; 1.00-1.79 meant the level of inventory records accuracy is very low, 1.80-2.59 meant the level of inventory records accuracy is low, 2.60-3.39 meant the level of inventory records accuracy is moderate, 3.40-4.19 meant the level of inventory records accuracy is high and 4.20-5.00 meant the level of inventory records accuracy is very high.

**Inventory Investment:** This was examined by considering the amount invested in the procurement of drugs and medical supplies, cash received and the worth of stock at hand, inventory investment was measured using a 5- point Likert Scale (questionnaire), it was analyzed using descriptive statistics and interpreted using the mean range of Likert scale presented as means and standard deviations. In this case, if the result (the mean value) falls within; 1.00-1.79 meant the level of inventory



investment is very low, 1.80-2.59 meant the level of inventory investment is low, 2.60-3.39 meant the level of inventory investment is moderate, 3.40-4.19 meant the level of inventory investment is high and 4.20-5.00 meant the level of inventory investment is very high.

**Inventory Turnover:** This was examined by considering the cost of goods distributed and average inventory for the period. In this case, inventory turnover was measured using a 5- point Likert Scale (questionnaire), it was analyzed using descriptive statistics and interpreted using the mean range of likert scale presented as means and standard deviations. In this case, if the result (the mean value) falls within; 1.00-1.79 meant the level of inventory turnover is very low, 1.80-2.59 meant the level of inventory turnover is low, 2.60-3.39 meant the level of inventory turnover is moderate, 3.40-4.19 meant the level of inventory turnover is high and 4.20-5.00 meant the level of inventory turnover is very high.

**Organizational Performance:** This was examined by considering cost reduction and customer satisfaction. The organizational performance was measured using the 5- point Likert Scale (questionnaire), it was analyzed using descriptive statistics and interpreted using the mean range of Likert scale presented as means and standard deviations. In this case, if the result (the mean value) falls within; 1.00-1.79 meant the level of organizational performance is very low, 1.80-2.59 meant the level of organizational performance is low, 2.60-3.39 meant the level of organizational performance is moderate, 3.40-4.19 meant the level of organizational performance is high, and 4.20-5.00 meant the level of organizational performance is very high.

**Cost Reduction:** This was examined by considering the trend of costs/ operating expenses. In this study, cost reduction was measured using a 5- point Likert Scale (questionnaire), it was analyzed using descriptive statistics and interpreted using

the mean range of Likert scale presented as means and standard deviations. In this case, if the result (the mean value) falls within; 1.00-1.80, it meant the cost reduction level is very low, 1.80-2.59 meant the cost reduction level is low, 2.60-3.39 meant the cost reduction level is moderate, 3.40-4.19 meant the cost reduction level is high, and 4.20-5.00 meant the cost reduction level is very high.

**Customer Satisfaction:** This is the measurement of how products or services supplied by a company meet or surpass a customer's expectation. In this study, customer satisfaction was measured using a 5- point Likert Scale (questionnaire), it was analyzed using descriptive statistics and interpreted using the mean range of likert scale presented as means and standard deviations. In this case, if the result (the mean value) falls within; 1.00-1.80, it meant the satisfaction level is very low, 1.80-2.59 meant the satisfaction level is low, 2.60-3.39 meant the satisfaction level is moderate, 3.40-4.19 meant the satisfaction level is high, and 4.20-5.00 meant the satisfaction level is very high.

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## **CHAPTER TWO**

### **LITERATURE REVIEW**

This chapter presents the review of literature in regard to inventory management practices such as inventory shrinkage, inventory records accuracy, inventory investment and inventory turnover and organizational performance in regard to cost reduction and customer satisfaction. In this study, the related literature was presented in line with the objectives.

#### **Inventory Management Practices**

The main aim of inventory management was to ensure that organizations hold inventories at the lowest cost possible while at the same time achieving the objective of ensuring that the company has adequate and uninterrupted supplies to enhance continuity of operations (Mpwanya, 2005). A study carried out by Bhausahab & Routroy (2010) found that companies which are keen in managing their inventory reduce costs, improve quality of service, enhance product availability and ultimately ensure customer satisfaction. Furthermore, Pandey (2004) argues that effective inventory management practices increase performance of organizations, improves customer service and reduces inventory and distribution costs.

Inventory management is required at different locations within a facility or within multiple locations of a supply network to protect the regular and planned course of production against the random disturbance of running out of materials. The scope of inventory management also involves managing the replenishment lead time, replenishment of goods, returns and defective goods and demand forecasting, carrying costs of inventory, asset management, physical inventory, available physical space, inventory valuation, inventory visibility, future inventory price forecasting and quality

management. With a balanced of these requirements, it is possible to reach an optimal inventory level, which is an on-going process as the business needs shift and react to the wider environment (Ogbo et al, 2014).

Rajeev (2008), defines inventory management as the management of different inventory components (raw materials, work-in progress and finished goods) by properly managing the crucial determinants of inventory levels considering the specific features of organizations. Therefore, inventory is the total amount of commodities or materials contained in a storehouse or warehouse at a given time. The word “Inventory” can refer to both the total amount of commodities and the act of counting them. In this case, inventory management practices are considered as inventory shrinkage, inventory records accuracy, inventory investment and inventory turnover. The studies done on each of the components are discussed in this literature.

Inventory shrinkage describes the loss of inventory and this loss of inventory causes a disaster to the organization. Inventory records accuracy is the systematic analysis of all the information pertaining to the business. Inventory investment takes into account how much resources have been injected into a venture in relation to the benefits thereof. Inventory turnover is the number of times inventory is used or sold. It can also be used to determine the number of day’s inventory is available in store room (Sawaya & Giaque, 2006). However, the author did not deal with National Medical stores, which is the concern of the current study. Hence there is need for the study to establish how deep inventory shrinkage is practiced in National Medical store.

If the three components are well handled, there will be effective inventory management. Well managed, inventory is a key factor in the business success as it improves the performance of the business (Dong, 2010). This is supported by

Roumiantsev & Netessine (2005) saying that, superior earnings are associated with or brought about by the speed of change/responsiveness in inventory management. Sawaya Jr. & Giauque (2006) attest that since inventory constitutes a major segment of total investment, it is crucial that good inventory management be practiced to ensure organizational growth and profitability. On the other hand, it has been observed that most firms do not follow closely the practices involved in inventory management leading to poor financial performance. Inventory management practices have been an area of intensive inquiry in operations management and operations research. Sawaya & Giauque (2006) looks at inventory management and financial performance, where the current study is concerned with inventory management practices and organizational performance that promotes customer satisfaction and organizational goals achievement in National Medical Stores.

Lai (2005) reported that inventory is negatively associated with a firm's market value measured by Tobin's  $q$ . Roumiantsev & Netessine (2007) observe that cash conversion cycle is negatively associated with return on sales (inventory days of supply is one of the three components of cash conversion cycle). They further reported that raw materials inventory in days of supply is consistently negatively associated with return on sales across countries. However, the classic news vendor model suggests that the optimal service level, intended to optimize firm profit, is determined by balancing stock out cost and overstock cost. Intuitively, neither an extremely low level of inventory nor an extremely high inventory level benefits a firm since firms will incur losses in either extreme case. Below the optimal inventory level, increasing inventories will improve fill rates and prevent stock out costs, resulting in a positive contribution to organizational performance. After this optimal inventory level is reached, further increases in inventory will result in overstocking and thus hurt

organizational performance. Interestingly, Chen, Frank and Wu (2005) reported that stocks are valued much higher for relatively lower-inventory firms, but not for firms with the lowest inventory levels. Shah & Shin (2007) also reports a non-linear relationship between inventory management and organizational performance of firms, where the current study is concerned with National Medical Stores which is not firm and profit oriented.

Inventory modeling has been an area of intensive inquiry in operations management and operations research. Some classical texts describing the variables that are widely used in classical inventory models are Cachon & Terwiesch (2005). At the same time, only a few recent papers in operations management analyze inventories at the firm level empirically and try to reconcile inventory behavior observed in practice with the behavior predicted by the models. Most of these papers look at US firms, and some of them analyze the link between inventory management and financial performance. Gaur et al. (2005), extend this work by studying effects of firm size and sales growth on inventories.

Peter & Honggeng (2006) studied the trends in inventory levels at US firms over time to test the widely held belief that inventory management has improved due to the introduction of just-in-time (JIT) practices and information technology (IT) system implementations. Using a large sample of firms from the US Census Bureau that includes both private and public companies, they find that material and work in process, inventories decreased in most of the two-digit Standard Industrial Classification (SIC) industries from 1961 to 1994. Furthermore, in some segments there were greater improvements in the post-1980 period when JIT practices were adopted. Continuing this line of work, Chen et al. (2005,) find decreasing trends for relative inventories (inventory as days of sales), in both the manufacturing and the

wholesaling sectors for the period 1981-2003. They also find somewhat mixed evidence in the retailing sectors, with a downward trend starting only in 1995.

Using an event study approach, they show that firms with abnormally high inventories have abnormally poor long-term stock returns. They also find that the relationship between Tobin's  $q$  and abnormal inventory (which is a standardized deviation from the sector-wide inventory mean) is weak in cross-section for all sectors. Although this study relates with the current one, it handled firms that are profit oriented where the current study is concerned with a nonprofit firm that is National Medical Stores.

Nyabwanga et al (2012) suggest that owners/managers of SSEs should embrace effective inventory management practices as a tactic to further their business performance. According to them, organizations should employ effective inventory management practices as a strategy of improving their performance. In their view, the components investigated were; inventory budgeting practices, inventory levels management and management of shelf-space. This shows that there is a big room for other studies to consider some possible inventory management practices that could still have impact on organizational performance since different organizations or companies do business differently. In this study, inventory management practices such as: inventory shrinkage, inventory records accuracy, inventory investment and inventory turnover was considered for the purpose of ascertaining the differences in opinions from the scholars surveyed and how applicable their findings were to NMS.

### **Inventory Shrinkage**

Inventory shrinkage is one of the components of inventory management practices considered in this study. The effects of inventory management practices on inventory shrinkages, it was observed that losses resulting from medicine expiration,

medicine damages, medicine obsolesce(medicine purchased not meeting intended purposes) lead to increased inventory shrinkage(Healthcare Distribution Management Association report, 2009).Thus, inventory shrinkage in the long run is uneconomical to the organization and largely affects performance negatively.

A study carried out in US indicated that out of stock (OOS) reduces the probability of purchase incidence, lead to the purchase of smaller quantities, and induce asymmetric choice shifts (Campo and colleagues, 2003). Researchers also have tried to explain the differences in consumer responses to out of stock by studying situational factors, demographics, psychographic and product characteristics (Campo et al. 2000, Zinn & Liu, 2001). Campo et al. (2000, 2003) find that brand switching is less frequent when the consumer is loyal and when the perceived risk associated with brand switching is high. An OOS of a product with a large package size is highly likely to lead to the purchase of a smaller package size of the same brand. They continue to observe that the more the OOS is perceived as an unpleasant surprise, the higher is the likelihood of store switching (Zinn & Liu, 2001). The studies of Campo and colleagues (2003) and Zinn & Liu (2001) inform that out of stock (OOS) reduces the probability of purchase incidence, which to some extent reflects shrinkage but they did not handle how it affects organizational performance of their firms as well as customer satisfaction which is the concern of the current study.

Stock shortages are a headache for most organizations as expressed by Githendu, Nyamwange & Akelo (2008); and it leads to customer's dissatisfaction which eventually leads to low performance of an organization. Organizations ought to ensure that their inventory is monitored from time to time to avoid stock outs. However, their studies were done from a different setting compared to National



Medical Stores which was the concern of the current study. As well, it was not clear whether they were applicable to NMS which was the concern of the study.

### **Inventory Records Accuracy**

Pandy (2004) define record as any type of recorded information, regardless of the physical or characteristics, created, received or even maintained by a person, institution or an organization. He further explained that; record serves as the extensions of the human memory, purposely created to record the information, document transactions, substantiate claims, advance claims, offer justifications, as well as providing lasting evidence of events. In this case, records help to store information and retrieve them as the need arises. This enhances timely financial decisions.

In relation to the definition of Pandy (2004), then it is clear that businesses are striving for better quality in all products, and processes and inaccuracies can no longer be hidden by extra stock holding. The data accuracy problem has become a major challenge. This is an area where continuous improvements must be made and standards increased. Records accuracy is the responsibility of those who control the physical inventory, not only for their own benefit but also for that of the whole organization. On the other hand, record inaccuracy is still an issue, but people have learned to live with it. Record inaccuracy manifests itself when: there is no inventory available to service the customer, someone lights upon a large quantity of items which no-one knew were there and there is a stock take discrepancy which displeases the auditors. Thus, the ongoing study is interested in ascertaining how National Medical Stores deal with issues of records in order to improve their organizational performance such as reducing wastes and spoilage.

Inventory recording is undertaken by organizations to reduce the errors of stock management. To ensure accurate and reliable stock records there is need to do spot checks/ surprise checks, stock taking, which is the physical counting and measuring of quantity of each item in stock and recording the results. It is therefore apparent that effective record management is essential function of inventory management thus in order to improve inventory process; there is need to ensure that all records kept by the organization are accurate. Similarly, information is always the most important aspect of any organization provided are well kept; these help the organizations during the process of decision-making in order to come up with plans and strategies (Kimberly, Pier & Dawn 2001). However, it was not clear how National Medical Stores dealt with inventory records which necessitated this study, as the organization lost millions of money due to spoilage.

### **Inventory Turnover**

Another component of inventory management practices is inventory turnover. Ramagopal (2008) defines inventory turnover ratio as the number of times the stock has turned, over a period of one year. This can be achieved by considering any of the two formulas. If the inventory is recorded at cost, stock turn equals cost of goods sold divided by the average inventory. If the inventory is recorded at sales value, stock turn is equal to sales divided by average inventory. Therefore, it means that the more the number of times stock has turned, the more efficient the organization is.

John et.al (2012), asserts that the company's ability to pay its short-term obligations also depends on how quickly it sells its merchandize inventory. They continue to say that low inventory turnover ratio is an indicator of poor management of assets whereas high inventory turnover ratio is a sign of sufficient use of assets. Oballah et al. (2015), also agree that depending on the ratios of inventory turn, the

organization can have a positive or negative impact on its performance. The higher the turnover, the better is the performance of the organization and vice versa. Although this is the case, National Medical Stores distributes medicine to its facilities, but still customers complain of lack of medicine whereas the medicine is spoiled in the store.

Gaur et al. (2005), examine firm-level inventory behavior among retailing companies. They propose a model explaining differences in inventory turns across companies and create an adjusted measure of inventory turns that is better suited to gauge the operational metrics of retailers. Gaur et al. (2005) also find that inventory turnover for retailing firms is positively associated with both capital intensity and sales surprise, and are negatively associated with gross margins.

### **Inventory Investment**

Another component of inventory management practices is inventory investment. Inventories are basically stocks of resources held for the purpose of future production or sales or distribution. Inventories may be viewed as an idle resource which has an economic value. Better management of inventories would release capital for use elsewhere productively (Ghosh & Kumar, 2003). Inventory constitutes one of the largest and most tangible investments of any retailer or manufacturing organization. The amount of an organization's inventory investment directly affects the profit and cash flow. In line with Ghosh and Kumar arguments, National Medical Stores only distributes medicine to health centers and hospitals around the country, at the same time it has been noticed that a lot of money is wasted in destroying the expired drugs, which would be used in other areas. Thus, the current study needs to establish how inventory management practices such as investments affect organizational performance of National Medical stores.

Pawan, et.al. (2014) studied the effect of inventory management on organizational performance and found out that huge inventories maintained by most organizations, a considerable sum of an organization's fund is being committed to them. Chopra & Meindl (2003) acknowledge that inventory represents the largest single investment in assets for most organizations. In most organizations, clients have become accustomed to high levels of commodity availability, for which the result has mostly been higher inventory levels.

According to Miller (2010), inventory control is the activity which organizes the availability of item to the customers. It coordinates the purchasing, manufacturing and distribution functions to meet the marketing needs. Therefore, there is need for an organization to manage its inventory investment by ensuring that the right amount of stock is kept at all times.

### **Level of Organizational Performance**

The second objective is the determination of the level of organizational performance. The level of organizational performance is indicated by measuring the inventory management components against some standards. In this case, some ratios such as turnover; weighted scores resulting from service, quality and delivery and so on will be used to evaluate organizational performance in terms of cost reduction and customer satisfaction respectively.

### **Cost Reduction**

The cost reduction can be used to measure the level of performance in terms of purchasing the right quantity and quality of inventory, maintaining the right stock safety and prompt deliveries. Companies or Organizations can cut down costs by examining the inventory turnover where the number of times inventory used or sold must be high; and the number of days inventory is available in store room must be

low. Chan et al. (2002:1446), states that “Many companies have realized that important cost savings can be achieved by integrating inventory control and transportation policies throughout their supply chains”. Therefore, these companies need to ensure they have an optimal replenishment plan, being an inventory and transportation strategy, in order to minimize total inventory and transportation costs over a finite planning horizon (Chan et al., 2002). The study on Chan et al. shows clearly why a firm or organization needs to look at cost saving and optimal replenishment plan. The current study therefore looks at how well a nonprofit organization like National Medical Stores, would use such issues in ensuring organizational performance.

### **Customer Satisfaction**

Customer satisfaction is the way the customer thinks about the company and deals with the meeting or exceeding of expectation over the lifetime of the products and/or services (Cacioappo, 2000). A company’s loyalty and product repurchase come from achieving customer satisfaction. The measurement of customer satisfaction is not an exact science because of its subjectivity. Because customer satisfaction is non-quantitative in nature, it requires sampling and statistical analysis. There is a gap between customer expectations and performance perceptions when measuring customer satisfaction. As a result of this, it is important to establish a linkage between customer satisfaction and bottom-line results.

Customer satisfaction is a vital ingredient in business and brings about customer loyalty. Loyal customers according to Eckert (2007) are six times more likely to purchase or to recommend the purchase of a company’s products and services to someone else. Various studies have also shown that dissatisfied customers are likely to tell nine others while satisfied customers are likely to tell five other

people about the good service and treatment that they have received (Cacioappo, 2000). Customer loyalty is often manifested in repeat purchases (Allen & Wilburn, 2002). Tuli & Bharadwaj (2009) observe that satisfied customers are likely to adapt a behavior of increase in purchase as well as a continuous purchase from the organization. Cacioappo (2000) was concerned with customer loyalty since it was dealing with completion as well as firm's ability to deal with customer relations management, which may not be fully paid attention to by the only sole provider and distributor of medicine (National Medical Stores) whose are no profit oriented.

### **Relationship between Inventory Management and Organizational Performance**

Another concern of the study is to establish the relationship between inventory management and financial performance of National Medical Stores in Entebbe Municipality. In a study done by Koliass (2011), in order to test inventory-performance link using construction firms listed in Bursa Malaysia, it was found that there is a positive correlation between inventory turnover and capital intensity as a result of the nature of investments. Another study suggesting a positive relationship between inventory management and performance was Eroglu & Hofer (2011), which used the Empirical Leanness Indicator (ELI) as a measurement for inventory management. They argued that inventory leanness is the best inventory management tool. However, this was profitability making organizations and not nonprofit making like National Medical Stores, which is the concern of the study.

In his study of 91 Indian Machine Tool Enterprises to evaluate the relationship between inventory management practices and inventory cost Rajeev (2008) established that effective inventory management practices have a positive impact on the inventory performance of businesses and also have an eventual effect on the performance of the overall businesses processes. He says that the study was done

among profit making firms and inventory performance, while the current study aims to look at organizational performance of nonprofit making organization.

Juan & Mertinez (2002) in their study of 8872 small and medium-sized Spanish firms also demonstrated that managers of firms can create value by reducing the number of days of inventory. Effective inventory management processes helps increase operational efficiency of firms, improves customer service, reduces inventory and distribution costs; and enables businesses track items and their expiration dates consequently balance between availability and demand (Pandey, 2004). Juan and Mertinez (2002) looked at small and medium enterprises whereas the current study is on large entity that handles procurement and distributions of drugs and medical supplies in the entire country (National Medical Stores).

### **Summary and Identified Research Gaps**

The scholars reviewed such as Mpwanya (2005), Pandy (2004), Sawaya & Giauque (2006), Shah & Shin (2007) found that inventory management practices affect the firm or organization in different ways in relation to inventory management practices such as shrinkage, records accuracy, investments and turnover are essential elements in firms and organizations. However, none of those scholars looked at NMS which is non-profit oriented facility. Therefore, there was need to assess how applicable their findings were to non-profit organization like NMS.

Other researchers such as Rajeev (2008) and Juan & Mertinez (2002) surveyed small and medium enterprises whereas the current study was on large entity that handles the procurement and distribution of drugs and medical supplies in the entire country (National Medical Stores). Other surveyed literatures such as Oballah et al. (2015) were from different geographical location and not Uganda, hence there is a need to assess their findings applicability to NMS in Entebbe, Uganda.

## **CHAPTER THREE**

### **METHODOLOGY**

This chapter presents the approaches the researcher used in order to achieve the set objectives of the study. It contains sub-sections such as: locale of the study, research design, population, sample and sampling procedure, research instruments, validity and reliability, data collection procedure, data collection, data processing, data analysis and measurement of variables.

#### **Research Design**

This study was based on a descriptive survey and correlation research designs with both qualitative and quantitative methods of research. Descriptive survey type of research helps to illustrate the information on the present existing conditions. The researcher adopted descriptive survey research design to carry out the research with the emphasis of studying in depth what was happening in National Medical Stores regarding inventory management practices and organizational performance.

The major goal of using this method was to describe the nature of situation, as it was at the time of the study and to explore the cause of a particular issue. In most instances surveys attempt to capture attitude or patterns of past behavior contrary to other designs. The most commonly seen surveys use the cross sectional design which asks questions to people at one point in time. The study is suitable since its descriptive is friendly in presentation of data (Sekarani, 2000). Similarly, the study used correlation research design in order to ascertain the relationships among the variables of study. The research design was considered appropriate since it also provided an opportunity for intensive analysis of specific details over the collected data (Munck &



Gerardo, 2004). In addition, the design helps in using a variety of methods in data collection and analysis.

### **Locale of the Study**

The study was conducted in Entebbe Municipality in Uganda which is 32 kilometers (20 miles) from Kampala capital city, where National Medical stores headquarters are situated. National Medical Stores, an organization selected for this research deals in drugs and medical supplies for all government hospitals and health centers.

### **Population of the Study**

The total population of National Medical Stores was 231 people according to the Human Resources Manager Records (June, 2015). The study targeted workers who deal with inventory management in general such as Managers, Supervisors, Accountants and other regular employees.

### **Target Population**

The targeted population was Managers, Supervisors, Accountants and other regular employees of National Medical Stores who were 66 in number.

### **Sample Size**

The study targeted Managers, Supervisors, Accountants and other regular employees who were 66. According to Sekarani (2000) in dealing with a small population the researcher can use a census method to get a clear picture. Since the target was 66 respondents, the researcher used all of them. Questionnaires were

administered to the 66 respondents with an assumption that they had the basic knowledge in inventory management.

Table 1: Sample size

<b>Departments</b>	<b><i>Population</i></b>	<b><i>Sample</i></b>
Sales	15	15
Procurement	7	7
General Manager's office	5	5
Finance	4	4
Stores	35	35
Total	66	66

### **Sampling Procedure**

The study used census sampling methods in which the target population of 66 respondents was used, who involved Managers, Supervisors, Accountants and other regular employees who had basic knowledge in inventory management. According to Sekarani (2000) census sampling is a technique that works well when it comes to specific group which is small and has knowledge on the ideas relating to the study.

### **Research Instruments/Methods**

#### **Questionnaire Method**

The Self-Administered Questionnaire (SAQ) was used as the primary instrument of data collection. It contained three sections that is respondents' profile, variables for the study and suggestions. The questionnaire was given to the respondents at their place of work. The questionnaire had three parts: Part A; Respondents Profile Part B: closed ended items on variables of the study and Part C: suggestions. The closed ended items of the variables were based on a five point Likert scale as shown in Table 2:

Table 2: Summary of measure

Mean	Description	Interpretation
1:00-1.80	Strongly disagree	Very low
1.81-2.60	Disagree	Low
2:61 – 3.40	Uncertain	Moderate
3:41 – 4.20	Agree	High
4:21- 5:00	Strongly agree	Very high

### Interview Guide

The study used an interview guide to solicit for views and information from the key informants who were the departmental heads (procurement, sales and stores) in NMS. The interview guide was essential among the departmental heads who had no time to fill the questionnaire. It also helped to gather detailed information to supplement the self administered questionnaire. The interview guide was semi structured which helped the researcher to develop the ideas that were being asked in the process of interviewing.

### Review of Institutional Archival and Policy Documents

The researcher got some data by reviewing organizational archival and policy documents. In other words, the researcher used secondary data. The need for this method of data collection was based on two key considerations. On the one hand, the archival records were accessed for purposes of policies and innovations abstractions relevant to the current study; in addition, it enabled the researcher to have an opportunity to explore in-depth the related literature and issues relating to inventory and organizational performance.

## Validity and Reliability

### Validity

To ensure the content validity, data collection instruments was constructed in such a way that they had an adequate number of items and that each item or question on the scale had a link with the objectives of the study and covered the full range of issues being measured. The instrument was discussed with experts and the supervisors. To ascertain, the content validity index (C.V.I) was computed using the formula shown.

$$C.V.I = \frac{\text{no of relevant items}}{\text{Total number of items in the questionnaire}} = \frac{26}{32} = 0.81$$

The instrument was considered valid for the study because the Content Validity Index (CVI) was 0.81, which is above 0.6 (Amin, 2005 & (Kothari, 2004).

### Reliability

To ensure reliability the instrument was pre-tested using 20 self- administered questionnaires, which were administered in Joint Medical Stores (JMS), Nsambya. The data obtained from these twenty (20) items was entered in the computer using Statistical Package for Social Scientists (SPSS) to test for reliability. Cronbach's alpha coefficient of 0.843 was obtained which stipulates a high reliability, accurate enough in order to make valid inferences from the instrument and as such means the degree of consistency and precision the measuring instrument and as such the instrument (the Questionnaire) was accepted for this research. Amin (2005) stipulates a high reliability coefficient of at least 0.7 in order to make valid inferences from the instrument.

Table 3: Reliability Statistics

Cronbach's Alpha	Number of items
0.843	20

### **Data Collection Procedure**

The researcher first got an introductory letter (appendix 3) from the Dean School of Graduate Studies of Bugema University, which was presented to the Human Resource Manager of National Medical Stores. Upon receiving the acceptance with signatures affixed on the introductory letter (appendix 3), the researcher was allowed to collect data using self- administered questionnaires to the staff in procurement, sales and stores departments (as they were the ones acquainted more with inventory management ) and the interview guide to the Head of Departments (HODs) as indicated in appendix 2.

### **Data Analysis**

After the data was collected, the researcher then proceeded to analyze the data using descriptive statistics and correlation statistical analysis. In this case, objective 1 (one) and 2 (two) were analyzed using descriptive statistics, where qualitative and quantitative approaches of data analysis were used. In this case, the presentations of the data findings were done in narrative form, and in form of tables and statistical computations such as mean and standard deviation.

In the qualitative data analysis where data was analyzed in narrative form, the researcher classified the data collected into the components of the inventory. Therefore, all responses that were classified within a particular component of inventory management were put together and these were presented and analyzed in narrative form.

Mean while, the researcher used the Statistical Packages for Social Sciences (SPSS) to analyze the quantitative data, where data from the questionnaires were sorted, coded, categorized, entered into the computer and analyzed. The researcher, therefore, used statistical techniques such as measures of central tendency (averages) and measure of dispersion to present data. In this research, the mean and standard deviation were particularly used for analyzing the data.

Objective three (3) was analyzed using correlation analysis with the help of Pearson Product Moment Coefficient of Correlation and this helped the researcher to establish the relationship between inventory management practices and organizational performance of National Medical Stores. The researcher tested the hypothesis using the P- value and level of significance at alpha 0.01 (Kothari, 2004).

## **CHAPTER FOUR**

### **RESULTS AND DISCUSSIONS**

This chapter presents the results and discussions of the findings on Inventory management practices and organizational performance of National Medical Stores in Entebbe municipality. This has been done objective by objective. The study was specifically intended for the objective such as; to establish the level of inventory management practices practiced in National medical Stores in Entebbe Municipality, to assess the level of organizational performance of National Medical Stores in Entebbe Municipality, and to establish the relationship between inventory management practices and organizational performance of National Medical Stores in Entebbe Municipality. It was also hypothesized that, there was no significant relationship between inventory management practices and organizational performance.

#### **Demographic Characteristics of the Respondents**

The demographic characteristics show the description of the respondents who answered the questionnaires. These were based on; gender, age in years, category of the respondents and years of experience with National Medical Stores in Entebbe Municipality. The original sample for the study was 66 respondents, in the course of data collection, the researcher managed to collect 61 questionnaires, meaning that there was an error of omission (non response) of 0.075 (7.5%), hence representing 92.5% rate of return of the questionnaires.

The demographics characteristics of the respondents were analyzed using descriptive statistics where frequencies and percentages were used. This was based in

terms of gender, age in years, category of the respondents and year of experience with National Medical Stores in Entebbe Municipality.

Table 4: Demographic Characteristics of the respondents

Item	Description	Frequency	Percent
Sex	Male	33	54.1
	Female	28	45.9
Age bracket	Less than 25 years	5	8.2
	25-35 years	24	39.3
	36-45 years	22	36.1
	Above 45 years	10	16.4
Category of respondents	Manager	1	1.6
	Accountant	22	36.1
	Purchasing officer	19	31.1
	Internal auditor	6	9.8
	Other specify	14	21.3
Years of service	Below 5 years	26	42.5
	5-10 years	30	49.2
	Above 10 years	5	8.2

N=61

#### Sex

Based on the demographic of the respondents; in terms of gender characteristics, male respondents were on the lead with a total number of 33 (54%) and the female were 28 (46%). This implies that the greater number of respondents were males in this study, similarly, it showed that most of the staffs of National Medical Stores were males. Therefore, the male respondents dominated the study responses. Thus, the study findings are skewed towards male responses which can affect the findings either positively or negatively based on their attitude.

#### Age

As for age those who were in the age bracket 36-45 years were second on the lead with a number 22 (36.1%) following the leading respondents of the age bracket 25-35 years with a number 24 (39.3%). This means most of the respondents were



youths of mature age; more than the second leading group of youths of younger age (36-45). The third most frequent respondents by age were of the age above 45 who were 10 in number representing 16.4%. The least respondents were the ones of the age below 25 years. Those within this age bracket were 05 (08.2%). The age bracket of the respondents above 45 years, though with few respondents, they had the experience with National Medical Stores. In this case, the researcher concludes that most of the staffs of National Medical Stores were active workers who would influence the level of inventory management practices and the organizational performance of the organization. Hence the responses of the respondents cut across all age brackets which may lead towards balanced responses from the respondents.

#### **Position Held**

Mean while, categorizing the respondents by their type of occupation indicates the accountants as the leading respondents with the number 22 (36.1%). This category of respondents was in procurement, sales and stores departments. They were involved in day to day activities and also in maintaining records. In this study were able to give their opinions as concerns inventory management practices (inventory shrinkage, inventory records accuracy, inventory investment and inventory turnover) and organizational performance (cost reduction and customer satisfaction). This was followed by purchasing officers having the number 19 (31.1%). The third leading respondents were other specifies with the number 13 (21.3%). The second least of the respondents was internal auditors who were 06 in number representing 09.8%. The least response from respondent by type of occupation was received from the manager who was 01 representing 01.6%. The responses were drawn from people who had the right information in regard to inventory management and performance of the organization.

## **Experience**

The demographic characteristics of the responses by year of experience with National Medical Stores reveal the greatest number of responses obtained from those having experience ranging from 5-10 years. These were 30 representing 49.2%. This means that most of the respondents had experience with National Medical Stores within the study period. It means that they were aware of the information within the study period. This was followed by those with the experience below 5 years who were 26 representing 42.6%. The last respondents with the experience above 10 years were 05 representing 08.2%. Although they were few they had a significant effect on this study since the effects of the period beyond 10 years were within the study period. The socio-demographic characteristics of the respondents were essential as they may affect the information given in the study. It dictates the variations based on the responses of the respondents given, which enhances the nature of conclusion given.

## **Level of Inventory Management Practices**

Objective 1 of the study was to establish the level of inventory management practices of National Medical Store in Entebbe Municipality. The constructs investigated under this objective are inventory shrinkage, inventory records accuracy, inventory investment and inventory turnover. Each of these constructs was analyzed using the mean and Standard Deviation which was computed using SPSS (statistical package for social sciences) and interpreted using the mean range of Likert Scale as illustrated in the tables 5, 6, 7 and 8. The grand mean for each of the constructs was obtained and the average of these was used to establish the level of inventory management practices of National Medical Stores. In this case, the mean shows the level of an occurrence of a response, hence, the level of inventory management

practices was shown using the mean value and the standard deviation shows the extent to which scores deviate from the mean.

Table 5: Summary of Inventory Management practices

	Mean	SD	Interpretation
Inventory shrinkage	3.13	1.287	Moderate
Inventory records accuracy	3.30	1.272	Moderate
Inventory investment	3.28	1.292	Moderate
Inventory turnover	3.01	1.198	Moderate
<b>Pooled<math>\bar{x}</math> and SD</b>	<b>3.18</b>	<b>1.262</b>	<b>Average</b>

*Legend 1: 1.00- 1.79: Very Low 1.80- 2.59: Low 2.60- 3.39: Moderate 3.40- 4.19: High 4.20- 5.00: Very high.*

The findings pertaining to the level of inventory management practices in NMS as indicated in Table 5 shows that inventory management practices had a grand mean of 3.18, and SD = 1.26 which meant that inventory shrinkage, records accuracy, investment and turnover was managed averagely in NMS.

The findings reflects the argument of Miller (2010) who notes that inventory management practices involves all activities put in place to ensure that customer have the needed product or service. It coordinates the purchasing, manufacturing and distribution functions to meet the marketing and organizational needs of availing the product to the customers. Inventory management is primarily involved with specifying the size and placement of stocked goods. Inventory management is required at different locations within a facility or within multiple locations of a supply network to protect the regular and planned course of production against the random disturbance of running out of materials. The scope of inventory management also involves managing the replenishment lead time, replenishment of goods, returns and defective goods and demand forecasting, carrying costs of inventory, asset management, physical inventory, available physical space, demand forecasting, inventory valuation, inventory visibility, future inventory price forecasting and quality

management. Ensuring that the requirements are balanced, it is possible to reach an optimal inventory level, which is an on-going process as the business needs shift and react to the wider environment. However, this was average in regard to NMS.

Table 6: Level of inventory shrinkage

Items rated	Mean	SD	Interpretation
The organization purchases drugs and medical supplies basing on accurate data	3.30	1.270	Moderate
National Medical Stores experiences loss of drugs	2.79	1.280	Moderate
Stock level is maintained at a reasonable level (Neither too low or too high)	3.13	1.297	Moderate
There is proper storage of drugs and medical supplies all the time	3.31	1.285	Moderate
The demand for some drugs is always low	2.74	1.237	Moderate
Customers sometimes get drugs from other sources of their convenience	3.15	1.314	Moderate
Essential drugs are always available in the stores	3.50	1.324	High
<b>Grand <math>\bar{x}</math> and SD</b>	<b>3.13</b>	<b>1.287</b>	<b>Moderate</b>

*Legend 1: 1.00- 1.79: Very Low 1.80- 2.59: Low 2.60- 3.39: Moderate 3.40- 4.19: High 4.20- 5.00: Very high.*

Table 6 gives the summary on inventory shrinkage (one of the indicators of objective one) of National Medical Stores in Entebbe Municipality. The study found out that there is a moderate agreement among the respondents that NMS has a moderate inventory shrinkage ( $\bar{x} = 3.13$  and  $SD = 1.287$ ). The findings mean that there is a moderate expired drugs and stock outs within NMS. The responses show moderate variations from the mean as shown with the moderate standard deviation. In this case the drugs and medical supplies of NMS considered revealed that expired drugs and stock outs were moderate. The findings thus, reflect the Auditor General's Report (2010) whereby drugs worth Ushs 6.7 billion expired between July 2005 and June 2008 in the NMS storage facilities. At the same time NMS could not supply all the drugs ordered by health units. National Medical Stores experiences loss of drugs

either due to expiry or they purchase drugs and medical supplies basing on inaccurate data.

In relation to the findings of the study, a study carried out in US indicated that out of stock (OOS) reduces the probability of purchase incidence, lead to the purchase of smaller quantities, and induce asymmetric choice shifts (Campo and colleagues, 2003). As for the NMS, Out of stock (OOS) affects customers from accessing the drugs in time as well as failing to ensure accurate stock and delivery. Stock shortages are a headache for most organizations as expressed by Githendu, Nyamwange and Akelo (2008) and it leads to customer's dissatisfaction which eventually leads to low performance of an organization. Organizations ought to ensure that their inventory is monitored from time to time to avoid stock outs.

In an interview with the procurement officer, he noted that despite the *establishment of re-order levels order, quantities are still determined somewhat based on past usage*. Yet, they argued that *NMS has no specific policy to facilitate the determination of the quantities to be ordered*, meaning that orders are placed based on the staff's familiarity of the process. It was further noted that *the improper quantities ordered occasionally leads to unexpected situations of stock out and overstocking*. Shortage of medicines are occasionally attributed to long procurement procedures, occasional shortages of vital drugs in the market, lack of sufficient funds with which to purchase new supplies, inadequately trained staff in the inventory management section and the inadequacies of the NMS's stock management system.

Table 7: Inventory records accuracy

Items Rated	Mean	SD	Interpretation
National Medical Stores maintains good inventory records	3.30	1.188	Moderate
Reports and other relevant records are prepared timely and accurately	3.48	1.299	High
Reconciliation between stock cards and purchase ledger is always done periodically	3.10	1.300	Moderate
The organization conducts inventory count to ascertain ending stock position regularly	3.54	1.285	High
Employees handling the records have enough experience	3.07	1.289	Moderate
<b>Grand <math>\bar{x}</math> and SD</b>	<b>3.30</b>	<b>1.272</b>	<b>Moderate</b>

*Legend 1: 1.00- 1.79: Very Low 1.80- 2.59: Low 2.60- 3.39: Moderate 3.40- 4.19: High 4.20- 5.00: Very high.*

Table 7 gives the summary on one of the indicators of objective one which was inventory records accuracy of NMS in Entebbe municipality. The results from the table indicate that, there exists a moderate inventory records in NMS that has moderate inventory records accuracy ( $\bar{x} = 3.30$  and  $SD = 1.272$ ). The findings mean that there is moderate records accuracy within NMS. The responses show moderate variations from the mean as shown with the moderate standard deviation. In this case the inventory records of NMS considered revealed that accuracy was moderate. In relation to the findings of the study, a study carried out by Pandey (2004), states clearly that businesses are striving for better quality in all products, and processes and inaccuracies can no longer be hidden by extra stock holding. The data accuracy problem has become a major challenge. This is an area where continuous improvements must be made and standards increased. Records accuracy is the responsibility of those who control the physical inventory, not only for their own benefit but also for that of the whole organization.

The interview revealed that inventory recording is undertaken by the organization in order to reduce the errors of stock management. To ensure accurate and reliable stock records NMS makes some spot checks/ surprise checks, stock taking, which is the physical counting and measuring of quantity of each item in stock and recording the results. However, this has not been satisfactory since many of the orders are not fully processed. The store also is small which affects arranging of the drugs in order for easy checks. Although they argued that NMS uses fluid storage system where items are stored in any available space, it was noted that there are still challenges with storage as some of the drugs expire without being used as much as they are highly needed.

Table 8: Inventory Investment

Items Rated	Mean	SD	Interpretation
National Medical Stores injects money in the procurement of drugs and medical supplies	3.49	1.286	High
The value of drugs/stock in the store is considered as cash	3.31	1.311	Moderate
The organization puts into account the necessary risks involved in planning and procuring drugs and medical supplies	3.03	1.278	Moderate
<b>Grand <math>\bar{x}</math> and SD</b>	<b>3.28</b>	<b>1.292</b>	<b>Moderate</b>

**Legend 1:** 1.00- 1.79: Very Low 1.80- 2.59: Low 2.60- 3.39: Moderate 3.40- 4.19: High 4.20- 5.00: Very high.

Table 8 gives the summary on one of the indicators of objective one which was inventory investment of NMS in Entebbe Municipality. The results from the table indicate that, there exists a moderate inventory investment in NMS that has moderate investment ( $\bar{x} = 3.28$  and  $SD = 1.292$ ). The findings mean that there is a moderate inventory investment within NMS. The responses show moderate variations from the mean as shown with the moderate standard deviation. . In this case the inventory

investment of NMS considered revealed that investment was moderate. The findings of the study shows that NMS injects a lot of funds into the procurement of drugs and medical supplies which is high with a mean 3.49 and standard deviation 1.286.

The findings of the study agree with the study carried out by Pawanet.al.(2014) which studied the effect of inventory management on organizational performance and found out that huge inventory maintained by most organizations, a considerable sum of an organization's fund is being committed to them. Chopra and Meindl (2003) acknowledge that inventory represents the largest single investment in assets for most organizations.

Table 9: Inventory Turnover

Items Rated	Mean	SD	Interpretation
There is a specific number of times expected for the organization to achieve in a given period (Year)	2.92	1.229	Moderate
The more times drugs and medical supplies are distributed it means that the organization is doing well	3.12	1.318	Moderate
The inventory of some drugs take long period in the store	3.16	1.098	Moderate
The demand for products is considered to be key (neither too high nor too low)	3.18	1.176	Moderate
The number of times inventory is given out is always below the required setting	2.66	1.167	Moderate
<b>Grand <math>\bar{x}</math> and SD</b>	<b>3.01</b>	<b>1.198</b>	<b>Moderate</b>

**Legend** 1: 1.00- 1.79: Very Low 1.80- 2.59: Low 2.60- 3.39: Moderate 3.40- 4.19: High 4.20- 5.00: Very high.

Table 9 gives the summary on one of the indicators of objective one which was inventory turnover of NMS in Entebbe Municipality. The results from the table indicate that, there exists a moderate inventory turnover in NMS that has moderate turnover ( $\bar{x}$  = 3.01 and SD=1.198).The findings mean that there is a moderate



turnover within NMS. The responses show moderate variations from the mean as shown with the moderate standard deviation. In this case the number of times drugs and medical supplies distributed by NMS considered revealed that inventory turnover was moderate. The findings thus, agree with the study by Oballah et al. (2015), which states that depending on the ratios of inventory turn, the organization can have a positive or negative impact on its performance. The higher the turnover, the better is the performance of the organization and vice versa.

### **Level of Organizational Performance**

Objective 2 of the study was to assess the level of organizational performance of National Medical Stores Entebbe Municipality. The study question addressed was “What is the level of organizational performance in National Medical Stores in Entebbe Municipality?”

Findings from Table 10 on organizational performance the study found ( $\bar{x} = 3.17$  and  $SD = 1.302$ ) a moderate NMS organizational performance in terms of cost reduction and customer satisfaction. The findings show a moderate variation of the respondents' responses from the mean, which shows those respondents' responses, had minimal variations from either side of the mean. In this case, the NMS has a moderate organizational performance in dealing with cost reduction and customer satisfaction. The staff of NMS therefore accepts that cost reduction and customer satisfaction is moderate as they have challenges in delivery and fulfilling customers' requests in a timely manner. Therefore, there are inefficiencies in the NMS which affects their performance that ought to be addressed.

Table 10: Level of organizational performance of NMS

<b>Cost reduction</b>	$\bar{x}$	SD	Interpretation
The loses of handling inventory would decrease in case the volume and value of inventory transactions would decrease	2.92	1.229	Moderate
The safety stock is always maintained with a view of minimizing costs	2.98	1.396	Moderate
Clients always come for the drugs as per orders placed in	3.44	1.259	High
The organization ensures continuous improvement and optimization through rigorous quality assurance	2.75	1.299	Moderate
The organization's priority is to increase performance	3.56	1.385	High
<b>Cost reduction satisfaction <math>\bar{x}</math> and SD</b>	3.13	1.314	Moderate
<b>Customer satisfaction</b>			
Clients receive the necessary services whenever there is need	3.03	1.366	Moderate
The organization satisfies all the orders placed in by the clients	2.95	1.309	Moderate
The organization has well trained motivated employees who are willing to serve clients promptly	3.33	1.248	Moderate
The organization purchases and distributes products of high quality	3.46	1.191	High
The organization delivers products to its clients on time	3.33	1.248	Moderate
The organization always maintain stock of essential drugs to avoid stock outs	3.13	1.372	Moderate
<b>Customer satisfaction <math>\bar{x}</math> and SD</b>	3.20	1.289	Moderate
<b>Grand <math>\bar{x}</math> &amp; SD</b>	<b>3.17</b>	<b>1.302</b>	<b>Moderate</b>

N=61

**Legend 1:** 1.00- 1.79: Very Low 1.80- 2.59: Low 2.60- 3.39: Moderate 3.40- 4.19: High 4.20- 5.00: Very high.

The documentary analysis revealed that among *the inefficacies of NMS is its lack of ability to deliver the required medicine to its facilities in time. The existing NMS models have frustrated many health stakeholders that would seek to depend on them to support their public health efforts.* In 2014, the NMS had over ¼ of its medicine which were expired, the report to parliament shows that in the previous five years, the samples tested had a 12 percent failure rate. Although this contradicts the

interviews of NMS workers who noted that they have done their best in requests and delivery of drugs to the health facilities.

It was further found that *NMS also lacked the storage capacity to handle the volume of products purchased by various healthcare service collaborators; as a result, poor stock management practices occurred.* In 2014, poor functioning by the NMS was cited as the cause of shortages of essential drugs and supplies; improvements in availability therefore were for the facilities to use alternative stocks from the private sector. This contributed towards the facilities charging higher than the open market. There is also high profile cases of theft and corruption at the NMS which have resulted in donors withholding funds meant for the health sector. Many reasons have been given for the dysfunctions found in NMS operations, including the government's undue political interference; lack of both operational management capacity and infrastructure resources, including funding; the NMS' preferred and protected status in healthcare procurement; and poor accountability for performance results. Improved efficiency-related outcomes including service quality and inventory availability need to be looked at.

National Medical Stores procures and stores pharmaceuticals and medical supplies, and at the same time has the sole responsibility of distributing and delivering them to healthy centers and hospitals spread throughout the country. The moderate level of organizational performance revealed acknowledges the out cry that the essential drugs and medical supplies are always not available in the healthy centers and hospitals; and yet a lot of them get expired in the premises of National Medical Stores (NMS), hospitals, and health units (Report to Parliament, 2015).

The foregoing thus relates with the statement of the problem in which it was pointed out that NMS and its partners have put in place efforts to provide the country

with health commodities (medicines and medical logistics) to meet the requirements of clients (people who need the healthcare); there are still challenges in regard to supply and delivery of such drugs to health units across the country.

### **Cost Reduction**

The findings relating to cost reduction showed ( $\bar{x} = 3.13$  and  $SD = 1.314$ ) which implied a moderate cost reduction. This shows that the organization performance in terms of cost reduction is moderate, whereby the trend of costs/operating expenses are still high which affects cost reduction. It tries to moderately deal with safety stock, clients come for drugs as per orders, and the organization ensures continuous improvements and optimization through quality assurance.

The Report to Parliament (2015) shows that NMS continued to have and accumulate expired drugs while also experiencing stock out of certain drugs over the 3 years under review. Expired items represent wastage of resources as they are purchased using funds that could be put to other areas of operation. According to the Ministry of Health Ministerial Policy Statement, National Medical Stores (NMS) is supposed to procure and distribute essential medicines and health supplies in accordance with procurement plans. NMS is supposed to deliver essential medicines after every two months which translate into six cycles in a year. The orders and delivery should be in line with the procurement plan to curb the expiry and shortage of drugs and ensure effective service delivery. Delivery where NMS supplied items not ordered by the hospital while the shortage was due to NMS failure to deliver what is actually required. Analysis of drug deliveries indicated that NMS supplied more items towards the end of the year than at the beginning contrary to the procurement plan. Expiry and shortage of drugs was partly attributed to the irregular deliveries of health supplies by NMS. In an interview with the NMS General Manager, it was

noted that the expiry and shortage of the drugs in RRHs was also due to improper planning by the RRHs in their annual procurement plans. Whereas, hospitals are allowed a variance between order and plan of 20%, it was observed that all RRHs exceeded this allowance at time of ordering. This contributed to the stock outs of drugs. Expired items represented wastage of resources as they were purchased using funds that could be put to other areas of operation. They also take up space in the stores and more funds are required to ensure their safe destruction.

Through the secondary data, it was noted that *inadequate human resources have constrained the ability of NMS to fully handle its duties, shortages of critical staff such as nurses, doctors, nutritionists, and anesthetic and laboratory workers, have greatly constrained the provision of medicines and health.* The cost reduction can be used to measure the level of performance in terms of purchasing the right quantity and quality of inventory, maintaining the right stock safety and prompt deliveries. Furthermore, secondary data showed that delay in procurement process denied NMS the needed improved service delivery. This leads to NMS have persistent stock outs. This hinders the opportunity to increase the supply of drugs for the treatment of citizens, thus, compromising government's efforts to provide affordable treatment to citizens. The foregoing argument contradicts the government's commitments to improve access and availability of the essential drugs.

Therefore, NMS has a moderate cost reduction which implies that it has failed to purchase the right quantity and fulfill the request and delivery of the drugs to the health facilities. Furthermore, the drugs get expired within the organization before delivery to health units across the country. The findings thus contradicts Chan et al. (2002) who argue that many companies have realized the importance of cost savings

through integrating inventory control and transportation policies throughout their supply chains.

The interviews noted that *NMS could not supply drugs and medical supplies to meet the orders placed by the public health units*. The information analyzed from NMS sales performance in respect of key anti-malarial drugs that are expected to be available at all times in NMS stores revealed that *less than half the orders were honored by NMS and the other half were not honored*. This shows that cost reduction still is a problem in NMS. Because of those shortcomings on the part of NMS, the management of a number of health centers has a tendency of giving an excuse for purchasing Primary Health Care (PHC) drugs for which money is availed in cash from competing suppliers. This was because of NMS' inability to use the appropriate data to plan and procure the right types and quantities of drugs to meet customer requirements.

### **Customer Satisfaction**

In reference to customer satisfaction, the study found ( $\bar{x} = 3.20$  and  $SD = 1.289$ ) an average customer satisfaction with a moderate variations as shown with the standard deviation. The findings mean that on average the products or services supplied by NMS do not meet or surpass a customer's expectation in terms of orders placed and ways in which workers deal with customers. A company's loyalty and product repurchase come from achieving customer satisfaction.

There is a gap between customer expectations and performance perceptions when measuring customer satisfaction. In relation to the findings, Eckert (2007) notes that customer satisfaction is a vital ingredient in business as it bring about customer loyalty. Various studies have also shown that dissatisfied customers are likely to tell nine others while satisfied customers are likely to tell five other people about the good

service and treatment that they have received (Cacioappo, 2000). Customer loyalty is often manifested in repeat purchases (Allen & Wilburn, 2002). Tuli and Bharadwaj (2009) observe that satisfied customers are likely to adapt a behavior of increase in purchase as well as a continuous purchase from the organization.

The secondary data shows that the National Medical Stores (NMS) body charged with the acquisition and distribution of drugs destroys expired drugs frequently. These drugs actually should address the inadequacy or total absence of essential drugs in health centers while at the other end (National Medical Stores) drugs are expiring and being destroyed. This point to a defective supply chain. Despite the Uganda Government's efforts to combat poverty and diseases, Uganda's health ministry has been scrambling to starve off a national wide shortage of essential drugs that could jeopardize the lives of thousands of people. The primary health care in Uganda is below international standards. The health centers are in insufficient supply of essential drugs. Ironically in the past two years, the local media have regularly raised the alarm over essential drugs expiring and having to be destroyed by the National Medical Stores (NMS), the main supplier of government drugs and yet at the same time drugs shortage is rampant.

The interviews indicated that NMS has failed to satisfy customers in delivery since they fall short of the best practice in which the time taken to process a customer order ranges between few hours to two days. NMS did not have a clearly spelt out policy on the standard time it should take to process a customer order from receipt to delivery at customers' District or personal collection from NMS premises. Some of the Managers explained that they subject such open orders to investigations. There are cases when orders took one day while others three months, regardless of the distance from NMS premises. The Management position is that they accumulate and make

deliveries when it is economical to do so after every 30 working days disregarding the consequences of the delay. The effect was the loss of key customers who, except for the credit line items, resort to procuring drugs and medical supplies from other private pharmacies.

### **Relationship between Inventory Management Practices and Organizational Performance**

The study question addressed was: “Is there any significant relationship between inventory management practices and organizational performance of National Medical Stores in Entebbe Municipality?” The study hypothesized that there is no significant relationship between inventory management practices and organizational performance of National Medical Stores in Entebbe Municipality. The study used regression and correlation analysis to address the objective.

Table 11: Relationship of each of the inventory management on NMS performance

Predictor Variable	Unstandardized Coefficients	Standardized Coefficients	Sig.
	B	Beta (r)	(P- Value)
(Constant)	10.401		0.000
Inventory turnover	0.205	0.401	0.000**
Inventory records accuracy	0.015	0.026	0.034**
Inventory shrinkage	0.458	0.122	0.003**
Inventory investment	1.243	0.542	0.675

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

Results of the study based on Standardized Coefficients (beta) reveal that, inventory turnover(**b = 0.401, 40.1%**), inventory records accuracy(**b = 0.026, 2.6%**), inventory shrinkage (**b = 0.122, 12.2%**) and inventory investment ((**b = 0.542, 54. %**).Therefore, this means that only inventory investment had no significant relationship with NMS performance, whereas inventory turnover, records accuracy and shrinkage had a significant relationship with NMS performance with (**p = 0.000,0.034, and 0.003** are less than **p < 0.01**, the significant level, while inventory



investment had  $p=0.675$ . In relation to the findings of the study it was noted that NMS has challenges as the Auditor General's Report (2010) had noted that drugs worth Ushs 6.7 billion expired between July 2005 and June 2008 in the NMS storage facilities. At the same time NMS could not supply all the drugs ordered by health units. A monthly storage cost of Ushs 36 million was wasted on these expired drugs and their subsequent destruction cost was Ushs 700 million. This means that inventory management practices indeed affects performance of the NMS.

### **Inventory Turnover**

From the finding it was revealed that inventory turnover of NMS ( $b = 0.401$ ,  $p = 0.000$ ) than NMS performance. This is because inventory turnover directly influences and deals with performance. According to Pandey (2004) he notes that effective inventory management processes helps increase operational efficiency of firms; improves customer service; reduces inventory and distribution costs; and enables businesses track items and their expiration dates consequently balance between availability and demand. Namakajjo (2011) found that inventory management practices are effective on inventory turnover. As a result, the effectiveness of inventory and store management affects turnover performance. He further noted that to achieve an upward trend in turnover growth, inventory management practices must be carried out efficiently.

### **Inventory Records Accuracy**

It is also revealed that inventory records accuracy ( $b = 0.026$ ,  $p = 0.004$ ) had a significant relationship with NMS performance. This is because inventory records accuracy influences NMS performance. Fundafunda (2007) while agreeing with the complex nature of the supply chain asserts that availability of essential drugs and supplies in the public health sector is a continuing problem due to a combination of

problems which ought to be tackled urgently to avert disastrous outcomes through supply chain accountability.

### Inventory Shrinkage

In relation to inventory shrinkage contributes towards NMS performance ( $b = 0.122$ ,  $p = 00.003$ ). This shows that it controls NMS performance in one way or the other. This is because inventory shrinkage contributes towards performance. The findings are in lieu with Oballah (2015) who found out that inventory investment and inventory records accuracy had a positive influence on organizational performance while inventory shrinkage had a negative effect on organizational performance. Therefore, there was a need for an organization to manage its inventory investment by ensuring that the right amount of stock is kept at all times.

Table 12: Relationship between inventory management practices and organizational performance

		Organization performance
Inventory Shrinkage	Pearson Correlation(r)	-.045
	p-value	.732
Inventory Records accuracy	Pearson Correlation (r)	.649**
	p-value	.000
Inventory Investment	Pearson Correlation(r)	.197
	p-value	.129
Inventory Turnover	Pearson Correlation (r)	.080
	p-value	.542

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

### Source: Primary Data

In ascertaining the relationship between inventory management and organizational performance the study revealed that inventory shrinkage had no significant relationship with organizational performance, as the result showed ( $p. value = 0.732$ ,  $r. = -0.045$ ). On the other hand, inventory records accuracy had a significant relationship with organizational performance, whereby the findings showed ( $p. value = 0.649$ ,  $r. = 0.000$ ) since the p. value was less than  $\alpha 0.01$ . This

meant that inventory records accuracy significantly affects organizational performance. However, inventory investment had no significant relationship with organizational performance ( $p = 0.197$ ,  $r = 0.129$ ). Furthermore, inventory turnover had no significant relationship with organizational performance as shown with ( $p = 0.080$ ,  $r = 0.542$ ). Thus, the study rejects the null hypothesis that stated there is no significant relationship between inventory management practices and organizational performance of National Medical Stores in Entebbe Municipality. And accepted the alternative hypothesis that there is a significant relationship between inventory management practices and organizational performance of National Medical Stores in Entebbe Municipality. The study findings moderately supports Kolias (2011) who found that there is a positive correlation between inventory turnover and capital intensity as a result of the nature of investments. Rajeev (2008) in his study of 91 Indian Machine Tool Enterprises to evaluate the relationship between inventory management practices and inventory cost established that effective inventory management practices have a positive impact on the inventory performance of businesses and also have an eventual effect on the performance of the overall businesses processes.

The findings further contradicts Juan and Mertinez (2002) in their study of 8872 small and medium-sized Spanish firms also demonstrated that managers of firms can create value by reducing the number of days of inventory. Effective inventory management processes help increase operational efficiency of firms; improves customer service; reduces inventory and distribution costs; and enables businesses track items and their expiration dates consequently balance between availability and demand (Pandey, 2004).

In relation to the study theory of Strategic choice theory (SCT) developed by Child (1972) which notes that organizational structure is partly determined by the contingencies and partly also results from the choice of decision makers. It shows that indeed there is a relationship between top management choices in terms of following inventory management practices and how it affects organization performance as well as interaction of the internal and external organization.

### **Hypothesis Testing**

For hypothesis testing, results showed P-value of 0.000 is less than 0.01 (level of significance). The null hypothesis was rejected and the alternative hypothesis is accepted. This implies that inventory management influences NMS performance in one way or the other. The study findings support Eroglu and Hofer (2011) who found a positive relationship between inventory management and performance. They argued that inventory leanness is the best inventory management tool. Furthermore, the findings are in line with Rajeev (2008) who established that inventory management practices and inventory cost have a positive impact on the inventory performance of businesses and also have an eventual effect on the performance of the overall businesses processes.

### **Suggestions**

The study sought for ways of improving the NMS. The respondents pointed out a number of key issues to be done.

Table 13: Suggestion for improvement

<b>Suggestion</b>	<b>Frequency</b>	<b>Percent</b>
Proper planning	21	34.4
Interventions along the supply chain approach	13	21.3
Information technology	18	29.5

To achieve efficiency in supply, the procurement, receipt, storage and distribution of essential drugs must be efficiently planned and synchronized if the time wasted by the rural poor in search of drugs is to be used productively to improve their livelihoods. Proper planning relies basically on reliable and accurate data which are still a challenge to NMS.

Interventions along the supply chain approach ought to be made on the assumption that constraints that face essential drugs supply are multifaceted and addressing them requires a whole set of inter linked actions along entire drugs supply chain, hence the applicability of the systems' theory.

Information technology can help to collect process and share information. Timely flow of information facilitated by collaborative inter linkages enables supply chain members to be responsive to customer's needs and act very fast.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

This chapter presents the summary, conclusion and recommendations of the findings on Inventory management practices and organizational performance of National Medical Stores in Entebbe municipality.

#### **Summary**

The study investigated inventory management practices and organizational performance of National Medical Stores in Entebbe municipality. The study objectives were: to establish the level of inventory management practices practiced in National Medical Stores in Entebbe Municipality, to assess the level of organizational performance of National Medical Stores in Entebbe Municipality, and to establish the relationship between inventory management practices and organizational performance of National Medical Stores in Entebbe Municipality. It was also hypothesized that, there was no significant relationship between inventory management practices and organizational performance.

This study was based on a descriptive survey and correlation research designs with both qualitative and quantitative methods of research. The study targeted Managers, Supervisors, Accountants and other regular employees who are 66. The Self-Administered Questionnaire (SAQ) was used as the primary instrument of data collection.

The results on demographic characteristics revealed that male respondents dominated the study with a number 33 (54.1%). As per the age bracket, those respondents with the age (25-35 years) were the majority, having the number 24 (39.1%). As for the type of occupation, the majority were accountants who had a

number 22 (36.1%). The last demographic characteristics were by the year of experience, these were (5-10 years) with 30 (49.2%) respondents.

The results of the study objective one revealed that; inventory management practices had a grand mean of (3.18) and standard deviation of (1.26) which is moderate as interpreted using the mean range likert scale (legend) used in this study. This shows that there was a general consensus among respondents that the aspect of inventory management practices under the study applies to NMS. The findings therefore indicate that inventory management practices in NMS are moderate.

As for the objective two, all the constructs of organizational performance gave a grand mean of ( $\bar{x} = 3.17$  and  $SD = 1.302$ ) which is moderate as interpreted using a mean range likert scale used in this study. In this case, the mean value indicates that the level of organizational performance of NMS in terms of cost reduction and customer satisfaction was moderate. The findings show a moderate variation of the respondents' responses from the mean, which shows those respondents' responses had minimal variations from either side of the mean. National Medical Stores procures and stores pharmaceuticals and medical supplies, and at the same time has the sole responsibility of distributing and delivering them to healthy centers and hospitals spread throughout the country. The moderate level of organizational performance revealed acknowledges the outcry that the essential drugs and medical supplies are always not available in the healthy centers and hospitals; and yet a lot of them get expired in the premises of National Medical Stores (NMS), hospitals, and health units (Auditor General's Report, 2010).

In ascertaining the relationship between inventory management and organizational performance, the inventory shrinkage revealed a significant relationship with organizational performance whereby the correlation product moment

showed ( $r. \text{ value} = 0.732, p. = -0.045$ ). On the other hand, inventory records accuracy had a significant relationship with organizational performance, whereby the findings showed ( $r. = 0.649, p. = 0.000$ ) since the p. value was less than  $\alpha 0.01$  it meant that inventory records accuracy significantly affects organizational performance. However, inventory investment had no significant relationship with organizational performance ( $p. = 0.197, r. = 0.129$ ). Furthermore, inventory turnover had no significant relationship with organizational performance as shown with ( $p. = 0.080, r. = 0.542$ ). Thus, the study rejects the null hypothesis which stated there is no significant relationship between inventory management practices and organizational performance of National Medical Stores in Entebbe Municipality; and accepted the alternative hypothesis that there is a significant relationship between inventory management practices and organizational performance of National Medical Stores in Entebbe Municipality.

### Conclusion

The study tested the research framework with key variables as inventory management practices and organizational performance. Findings indicate that the organization averagely attests to its inventory management practices, which affirms to the fact that NMS loses drugs worth billions over the years due to its average inventory practices. The performance of NMS was also average which meant that there was average cost reduction as well as customer satisfaction on drug delivery from NMS. It meant that NMS could not supply all the drugs ordered by health units. Thus inventory management practices such as shrinkage, records accuracy, investments and turnover affect organizational performance of NMS (inventory turnover ( $p = 0.080$ ), inventory records accuracy ( $p. = 0.000$ ), inventory shrinkage ( $p. = -0.045$ ), whereas the  $\alpha = 0.01$ . It was therefore concluded that there was a



significant relationship between inventory management practices and organizational performance in National Medical Stores. The researcher rejected the null hypothesis, which stated that there is no significant relationship between inventory management practices and organizational performance of NMS, and accepted the alternative hypothesis since the p-value was lower than the significant level. Since the inventory practices accounts for over 40% of NMS organizational performance, it is worth noting that there is need for NMS inventory practices to be improved in order to be effective and efficient in their performance such as cost reduction and customer satisfaction.

### **Recommendations**

The researcher based the recommendations on the study findings from the respondents that participated in the study.

The researcher recommends that inventory records accuracy in National Medical Stores should be strengthened the more at all levels in order to enable the management to get accurate information upon which decisions can be based. The study also showed that records accuracy had a significant relationship with the organizational performance.

There is a need to improve on the procurement plans such that there is a proper balance on drugs purchased and the emphasis should be on essential drugs, for example anti-malaria drugs, etc, to avoid stock outs.

In addition to that, the researcher recommends that there is need for National Medical Stores to maintain optimum safety stock which will relive the organization from incurring high costs in terms of storage.

National Medical Stores should consider improving customer satisfaction which was moderate by ensuring that the requests and deliveries are made in a timely manner.

### **Areas for Further Research**

Researchers should conduct further studies on the relationship between inventory management practices and organizational performance in order to find out those other factors that were not considered in this study. The pertinent areas might include procurement process, storage, delivery of drugs and medical supplies follow ups, staff recruitment and administration conducts.

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## APPENDICES

### Appendix 1: Questionnaire for respondents

Dear respondent,

This questionnaire has been drafted by the researcher to generate relevant information for the achievement of the objectives of the study. The purpose of the study is to establish if organizational performance is affected by inventory management practices.

As a staff of National Medical Stores you have been selected to participate in the study through giving in your views and opinions; and return the questionnaire to the researcher. The study is for academic purposes only and any information you will provide will be treated with uttermost confidentiality. It has four sections to be answered.

#### SECTION A: RESPONDENTS PROFILE

1. Sex: i) Male { } ii) Female{ }
2. Age bracket: i) Less than 25 year{ } ii) 25-35 years{ } iii) 36-45 years{ }  
iv) above 45 years { }
3. Position: i) Manager{ } ii) Accountant { } iii) Purchasing officer { }  
iv) Internal Auditor { } v) Others specify .....
4. Years of service: i) Less than 5 years { } ii) 5-10 years{ }  
iii) Above 10 years { }

## SECTION B: INVENTORY MANAGEMENT PRACTICES

In this section rate the statement based on what happens in which

**1=Strongly Disagree 2=Disagree 3=Uncertain 4=Agree and 5= Strongly Agree**

		1	2	3	4	5
	<b>Inventory shrinkage</b>					
1.	The organization purchases drugs and medical supplies basing on accurate data					
2.	National Medical Stores experiences loss of drugs					
3.	Stock level is maintained at a reasonable level (neither too low or too high)					
4.	There is proper storage of drugs and medical supplies all the time					
5.	The demand of some drugs is always low					
6.	Customers sometimes get drugs from other sources of their convenience					
7.	Essential drugs are always available in the stores					
	<b>Inventory Records Accuracy</b>					
1.	National Medical Stores maintains good inventory records					
2.	Reports and other relevant records are prepared timely and accurate					
3.	Reconciliation between stock cards and purchase ledger is always done periodically					
4.	The organization conducts inventory count to ascertain ending stock position regularly					
5.	Employees handling the records have enough experience					
	<b>Inventory Investment</b>					
1.	National Medical Stores injects money in the procurement of drugs and medical supplies					
2.	The value of goods/ stock in the store is considered as cash					
3.	The organization puts into account the necessary risks involved in planning and procuring drugs and medical supplies					
		1	2	3	4	5
	<b>Inventory Turnover ( number of times stock given out in a year)</b>					
1.	There is a specific number times expected for the organization to achieve in a given period (year)					
2.	The more times drugs and medical supplies are distributed it means that the organization is doing well					
3.	The inventory takes less number of days/months in the store					
4.	The demand for the products is considered to be a key (neither too high nor too low)					
5.	The number of times inventory is given out is always below the required setting					
	<b>Cost Reduction</b>					



1.	The losses of handling inventory would decrease in case the volume and value of inventory transactions Would decrease					
2.	The safety stock is always maintained with a view of minimizing costs					
3.	The clients always come for the drugs as per orders placed in					
4.	The organization ensures continuous improvement and optimization through rigorous quality assurance					
5.	The organization's priority is to increase performance and efficiency					
6.						
	<b>Customer Satisfaction</b>					
1.	Clients receive the necessary services whenever there is need					
2.	The organization satisfies all the orders placed in by the clients					
3.	The organization has well trained motivated employees who are willing to serve clients promptly					
4.	The organization purchases and distributes products of high quality					
5.	The organization delivers products to its clients on time					
6.	The organization always maintain stock of essential drugs to avoid stock outs					

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## **Appendix 2: Interview Guide**

1. How long have you been with National Medical Stores; can you explain how supply of drugs has been for the customers in your time?
2. What is unique with National Medical Stores that interests you especially when serving customers?
3. Do you think National Medical Stores has the capacity to procure and supply its customers with essential drugs?
4. What does not sometimes interest you with NMS especially when managing drugs and medical supplies?

Thank you for your response.

### Appendix 3: Data Collection Letter

# BUGEMA UNIVERSITY

Main Campus  
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Kampala Campus  
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Between Total Petrol Station  
& Makerere Yellow Primary Sch  
Muganzizi-Awonderera Rd  
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## SCHOOL OF GRADUATE STUDIES

July 5, 2015

To Whom It May Concern

Dear Sir/Madam;

RE: DATA COLLECTION

This is to certify that Musisi Peter is a student of Bugema University pursuing a Masters degree in Business Administration with emphasis in Accounting.

The purpose of this letter is to request you permit him carry out the research data collection for his research entitled "INVENTORY MANAGEMENT PRACTICES AND ORGANIZATIONAL PERFORMANCE OF NATIONAL MEDICAL STORES".

The research will be based on utmost ethical considerations and the findings will be for academic purposes and of benefit to the Community.

Any assistance extended to him is highly appreciated.

Yours truly,

Paul Katamba, PhD  
Dean, School of Graduate Studies



A CHARTERED SEVENTH-DAY ADVENTIST INSTITUTION

MISSION: "To offer an excellent and distinctive holistic Christian education designed to prepare our students through training, research and scholarship for productive lives of usefulness to God and to People."

## Appendix 5: A Map Showing Location of National Medical Stores

