

**THE EFFECT OF INTERNAL CONTROL SYSTEM ON INVENTORY
MANAGEMENT**

(A CASE OF PETRO CITY UGANDA)

BY

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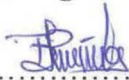
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**A RESEARCH DISSERTATION SUBMITTED TO THE COLLEGE OF
ECONOMICS AND MANAGEMENT IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE AWARD OF A
BACHELOR'S DEGREE OF SUPPLIES AND
PROCUREMENT MANAGEMENT OF
KAMPALA INTERNATIONAL
UNIVERSITY**

MAY 2013

DECLARATION

I **Ninsiima Pamela** hereby declare to the best of my knowledge that this report is my original piece of work and has never been presented to any institution or university of higher learning for the award of a degree, diploma, and certificate.

Signature 

NINSIIMA PAMELA

Date 17th / 05 / 2013

APPROVAL

This is to certify that, this research report titled “the effect of internal control system on Inventory management on in an organization” submitted in partial fulfillment of the requirements for the award of Bachelors Degree in Supplies and Procurement management of K.I.U has been done under my supervision.

Mr. HENRY BARASA

SUPERVISOR

Signature [Handwritten Signature]

Date 17/5/2013

DEDICATION

I **NINSIIMA PAMELA** hereby dedicate this report to my beloved Grand Mother Mrs. Mary Mbuturoha, my parents Mr. Sseguya Samuel Mother Mrs. Alice Sseguya, my Aunt Ms Sanyu Ruth and her husband Mr. Tumwebaze Edison who recognized the value of my education from the very start and have devoted a lot of their efforts to see that I achieve the best.

I also dedicate this work to my brothers Osbert, Syward and my cousins Rebecca and Elizabeth

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CHAPTER ONE

1.0 INTRODUCTION

This chapter will contain the background of the study, the statement of the problem, the research objectives, the research questions, and the scope of the study and the significance of the study.

1.1 BACKGROUND OF THE STUDY

Like Petro City Uganda most organizations fail to realize their desired goals as planned due to lack or poor of strong internal control system. This research was thus intended to investigate and analyze the existence, importance and role of internal control system in inventory management at petrol city stations in Kampala. Petro City Uganda limited was used as an illustrative example.

The Petro City Uganda with its deep –rooted origins had humble beginning with few branches supplying fuel and related products installed in 1900's. Today, close to just two decades later, it is a conglomerate of varied business interests ranging from stocking to transport and logistics to property development with in Uganda and spanning across the great lakes region with excess of 51 individuals at headquarters who share a common vision. Petro city Uganda is committed to deliver world class petroleum products and services at affordable prices to the people of Uganda and Sub Saharan Africa.

Petro city Uganda headquarters are located near Busega area. Since 1990's, this company has been operating successfully. Petro city Uganda as any other organization has internal security controls system put in place by management so as to manage inventory and other resources of the organization effectively. However, the controls if not implemented well and supported by a responsible official that is the internal auditor, also they should have departments such as procurement and supplies department, finance and accounting department, human resource department, research and development, otherwise the internal

controls may become weak and chances of fraud and misappropriation of inventory may come in. internal security controls are comprised of the plan and all the coordinated methods and measures adopted within an organization to safeguard the assets of the organization, check accuracy and reliability of accounting information, promote operational efficiency and encourage adherence to presented managerial policies (chambers 1987, Taylor etal, 1988).

Petro City Uganda group of company limited hold a variety of inventory which includes the following like stationery and fuel (Diesel, gas, petro and kerosene). In most cases inventory is in different locations which makes physical control and counting difficult. As inventories move through the company, there must be adequate control over physical movement and their related costs. Guy, Alderman and Winters (1999) stated that inventory frauds have resulted in material misstatements in financial statements and thus auditors should be aware of the types of inventory manipulations used.

Oil companies are in business of distribution of petroleum products. They hold huge volumes of inventory in form of petroleum products (Diesel, Petrol, gas and kerosene) which is their main merchandise. This inventory forms the bulk of their current assets and thus must be properly controlled if they were to make profits and achieve value for money. The highest risk is fraud and spoilage through spills due to the liquid form of the inventory and the high price on the ever ready black market. Internal controls will thus come every handy to protect and safeguard these current assets.

1.2. Problem statement

In the recent past, most oil companies and petroleum dealers in Uganda have been forced to restructure their ways of operation or even to close down due to their increased competition. The ensuing competition has maintained low fuel prices against rising cost leaving the companies to operate at minimal profits

and sometimes at losses. The soaring crude oil prices have seen U.S. crude oil hit an all-time high of \$ 135.09 a barrel in may 2011. Prices have rallied from a dip below 50% at the start of 2010 and by May 2011, have risen by 40 percent from \$ 95.98 a barrel at the end of 2011. (Economic times,2008)this has made it difficult for the petroleum dealers to substantially raise their pump prices above the cost price. Given the thin profit margins, the oil companies have no choice than minimizing on their costs if they are to remain in the business. Since inventory form the bulk of their current assets, its proper control management has significant impact on the profitability. This can be achieved by employing a sound internal control system. Manasseh (1990) stated that the internal control system plays a vital role in giving management direction while taking a major strategic decision in an organization under control. In an organization, internal control system is meant to prevent , detect and correct errors and irregularities hence attain the planned goals.

The research aimed at finding out the importance of internal control systems in the management of the inventory at petro stations operated by petro city Uganda limited in kampala District.

1.3 Purpose of the study

The researcher intended to find out the significance of the internal control system on the management of inventory at petro city Uganda in Kampala district.

1.4 Research objectives

1. To identify the nature and scope of the internal control systems employed in petro city Uganda limited.
2. To assess the impact of internal control systems on successful management of inventory at petro city Uganda stations in Kampala

3. To assess the effectiveness of existing internal control system at petro city Uganda limited

1.5 Research questions

The study answered the following questions

1. What is the nature and scope of the element of internal control system employed at petro city Uganda limited?
2. How does the internal control system impacted on the successful management of the inventory at the petro city Uganda stations in Kampala?
3. How effective is the existing internal control systems at petro city Uganda limited?

1.6 The scope of the study

1.6.1 Subject scope

Petroleum products were distributed through petrol stations spread all over the country so as to reach all targeted consumers. However, 40% of the sales volumes were from kampala district. This research was limited to internal controls system on petroleum products inventory at the petrol stations operated by petro city limited in kampala district. Petroleum products included petro, diesel and kerosene

1.6.2 Geographical scope

This research was carried out in kampala district and represented other branches out sidekampala

1.6.3 Time scope

The research expected to take eight weeks

1.7 Significance of the study

This research will help managers in petroleum industry to plan, design the control methods and procedures to apply, and properly allocate the qualified personnel to implement those designed methods and procedures to apply where they are supposed to be applied.

The findings of this study will assist the managers to specially understand how effective internal control is through the recommendations given out after the study, hence strengthening the weak points and maintaining the strong point of their systems.

The findings of the study will equip the future investors with the knowledge relevant to the effective running of petrol stations in Uganda.

The study will be a partial fulfillment for the requirements of award of bachelor of supplies and procurement to the researcher at Kampala International University

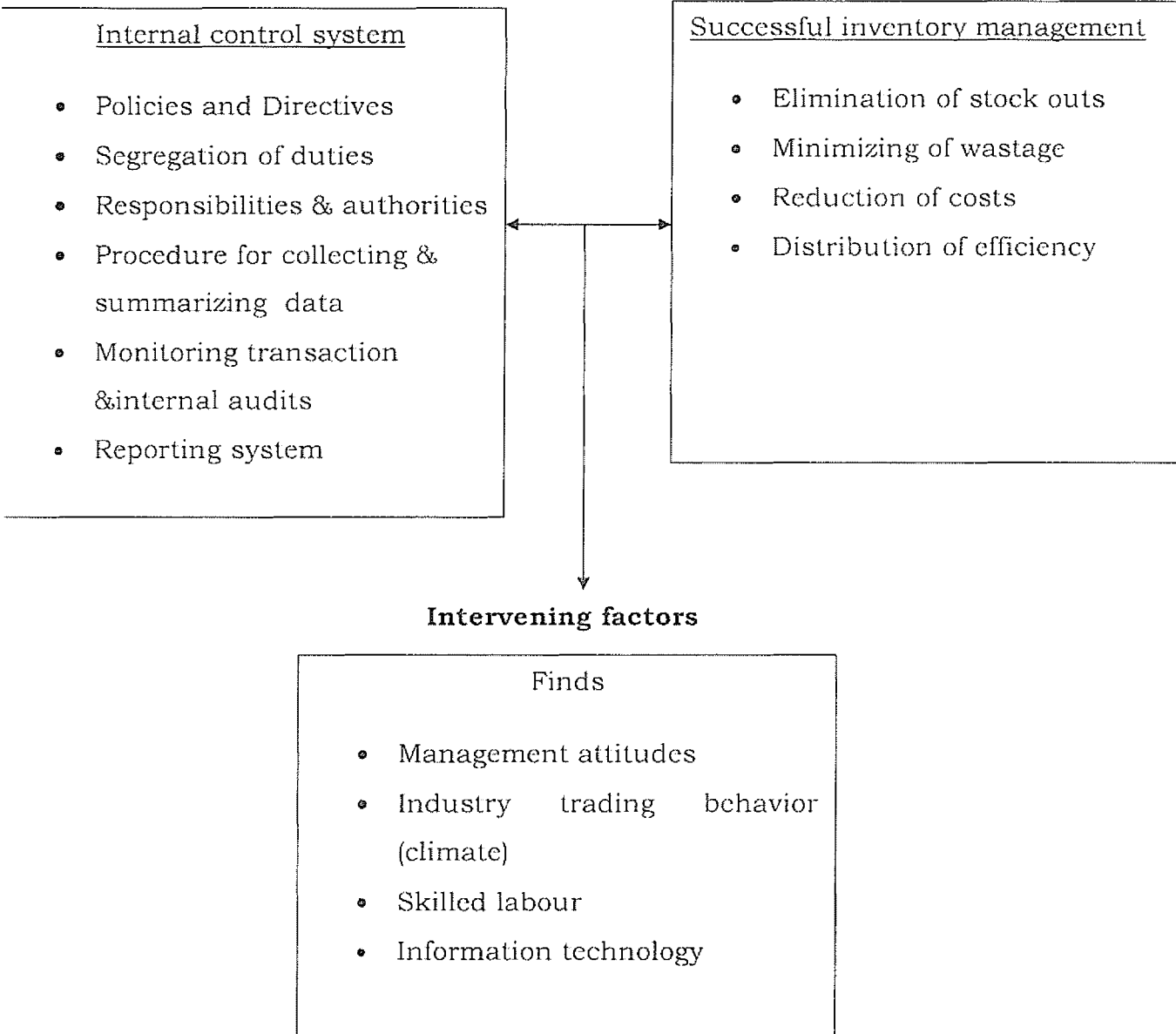
1.8 Conceptual frame work

This study employed conceptual flame work to discover the link between variables under investigation. The conceptual flame work is shaped from the theory of internal control systems adapted from Salemi (1989)

Figure 1: Conceptual frame work of the study

Independent variables

Dependant variables



Source: AS amended from saleemi (1989)

The above frame work illustrates how internal control system has a direct impact on successful inventory management. However, this can be influenced by climatic conditions. Climatic conditions in this regard may include dry season and wet season. This is because during dry season the petroleum

products evaporate causing a discrepancy in stock levels leading to tank losses and thus rendering internal controls useless. And in wet seasons internal controls tend to be perfect since there is no distortion in by the climatic condition.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 INTRODUCTION

To operate and attain its goals and objectives, organizations should set and implement a well-designed internal control structure. Internal control is not a single event, but a series of actions and activities that permeates a department's operations. It should not be viewed as a separate specialized system within an agency but rather than an integral part of organizational processes administered by management to achieve its objectives. An effective internal control system provides management with the best assurance that surprises will be minimized and that the department will achieve its objectives.

An attempt is made in this chapter to review the existing literature that is relevant to the study under question, the overall purpose of this chapter is to identify gaps that this study will fill and contribute approaches to better performances of oil companies through better management of inventory losses at petrol stations.

2.1 Internal control system

According to the American institute of certified public accountants (1963), management has the responsibility for devising, installing and supervising an adequate system of internal control system. Any system regardless of its fundamental soundness may deteriorate if not reviewed periodically. The system of internal control must be continuing supervision to determine whether prescribed policies are being interpreted properly carried out, changes in operating conditions have made a procedures cumbersome, absolute or inadequate or effective corrective measures are taken promptly where break down in the system appear.

Stettler (1982) stated the following important steps that would be for any good controlling process to take place.

Organizing, planning and making the decision implicit in the development of the plan.

Authorizing action to implement plans that have been agreed upon.

Maintaining custody and control over usage of resources acquired in accordance with the plans.

Designing and operating an information system to accurately record, summarize and report all activities in order to provide all necessary feedback on the result accomplished.

Taking such corrective action as may be prompted by feedback on past action and result.

According to Draft (1991), based on the definition of the organizational control, a well designed control system consists of four key steps, which are described below.

Establishment of standards of performance within the organizations overall strategic plan. Managers define goals for organizational departments in specific, operational terms that comprise a standard performance against which to compare organizational activities.

Measure of actual performance

Comparison of performance to standards

To take corrective action, corrective action is follow up to change work activities in order to bring them back acceptable performance standards. Because the control we are considering is accomplished internally within the system, it is referred to as internal control. Internal control comprises then plan of organization and all the coordinated methods and measures adopted within a

business to safeguard its assets, check the accuracy and reliability of its accounting data, promote operational efficiency and encourage adherence to prescribed managerial policies.(American Institute of Certified Public Accountants, 1963)

2.1.1 Policies and directives in inventory management

Managers are responsible for establishing an effective control environment in their organizations. This is part of their responsible over the use of organizational resources. Indeed, the top managements' directives through their actions, policies and communications can result on a culture positive control. It is essential to understand that a strong internal control system is fundamental to controlling an organization, its purpose, operations and resource. To operate effectively and to attain its goals and objectives, organizations should set and implement a well designed internal control structure through policies and directives.

According to Bateman and Zeithaml (1990) preliminary controls take place before operations begin and include policies, procedures and rules designed to ensure that planned activities will be carried out properly. Taylor and Glazen (1991) stated that financial statement accounts have financial assertionembodied in them. For these assertions to be valid policies and policies and procedures must exist to assure that the recording, processing, summarizing and reporting data in these financial statement accounts are consistent with assertions. For example if a company has no sound policies and procedures for recording credit purchases in a proper timely way, it has no reasonable assurance that the existence, occurrence, completeness, rights and presentation assertions for purchases and accounts payable are valid. Likewise weak policies and policies and procedures will lead to internal control and likelihood of the safety and wastage of inventory.

Since an inventory is an important entry into the business balance sheet of an organization especially in merchandise business, policies and directives should be properly and specifically tailored to safeguard its proper management. Successful management of inventory will definitely improve on profitability of the company through improved efficiency in operations and reduction in wastage through pilferage and misuse. Petroleum products are especially susceptible to wastage through spillages, leakages and evaporation due to their liquid form characteristics. The high value of product and ease to resell also makes petroleum products very susceptible to theft. In this regard, the management of Petro City Uganda ought to have a very strict and clear policy to safeguard its inventory.

2.1.2 segregation of duties

Any internal control will only be strong if duties and responsibilities are segregated. The benefits of segregation are to reduce risks of fraud, errors and manipulations in the business to increase efficiency in the company's operations due to specialization and facilitate supervision. Duties to be segregated are authority, recording, execution of duties, custody of the company's assets and systems development for computer operations. Duties should be divided to reduce the possibility of any person both penetrating and concealing errors or irregularities in the normal course of his/her duties. Segregation of duties is achieved by assigning different people the responsibilities of authorizing transactions and maintaining custody of assets. For example, an employee who receives should not authorize or record cash transactions. As far as inventory is concerned, all the staff handling petroleum products will have to be allocated duties such that there is no conflict in the course of executing their duties. Staff handling products at the depot should not be the same at the stations. A staff that authorizes the loading at the depot should not be involved at the actual offloading. Likewise at the station level, the cashier who handles cash should not be involved in the reconciliation of the

actual product (inventory). Control of fraud and manipulation is improved when each staff is given specific task to accomplish during the handle of the petroleum products. An employee who is assigned to handle diesel product should not get involved with petro , He or She will be held accountable for any loss on mismanagement of diesel.

2.1.3 Responsibilities and Authorities

One of the important steps that would be considered for any good controlling process to take place is authorizing action to implement plans that have been agreed upon (Stettler, 1982). All transaction must be authorized and approved by right or responsible officer. This is aimed at streamlining the flow of authority to avoid bureaucracy and conflicting authorized activities.

Control over company's personnel in form of organization chart will define duties and responsibilities of each of the staff. (Manassch, 1990). This attribute helps to avoid duplication of effort and conflicting duties, facilitate delegation of duties and harmonize operations in the business.

However, too much responsibility given to a few individuals may result in errors because of excessive work load. Also a concentrated authority might create a climate in which irregularities are more likely to occur and diminish the chances of such being detected. (Taylor&Glezen 1991). Transactions should be authorized by personnel acting within the scope of their authority and should conform to the terms of the authorization.

As mentioned before, petroleum products are high value products and form the bulk of inventory for Petro City Uganda. It is thus very important for any purchase or sale of the product to be authorized by a responsible staff. For instance only authorized pump attendants should sell fuel at the pumps. Fuel loading at the depot should be authorized by fuel manager. Lack of such controls as far as authorization by responsible persons is concerned will lead to inventory losses that are hard to trace.

2.1.4 Procedures for collecting and summarizing data

To protect assets and ensure that the employees follow the prescribed procedures, good record keeping is required. Reliable records are also a source of information that management uses to monitor the operations of the organization. Numerous forms and internal organization papers must be designed and properly used to maintain good internal control. Taylor and Glezen(1991) stated that the accounting system consists of the accounting records (ledgers and journals) and the supporting documents (invoices, sales orders and checks). For certain types of entities, the most significant part of the accounting system is the part that processes the purchases of merchandise, for others , the most significant is the part that processes pay roll transaction. The data for all transactions prior to the purchase and after the pay roll must also be documented as it forms part of the supporting documents. This data is then summarized and ensuring that reports are used for control purposes.

According to Guy etal. (1999), an accounting system should have sufficient and appropriate methods to identify and record all varied transactions. This objective concern s the financial statement assertions of existence occurrence and completeness.

Operation of Petro City Uganda involves continuous buying and selling of petroleum products. The units of sale vary depending on customers demand. There is thus needed to keep track of the daily transactions for case of reconciliation. Record of what has been purchased (addition inventory) and what has been sold (reduction of inventory) have to be kept precisely to help in the reconciliation of stock. Without such records, it will be very difficult to control the inventory. The prices of the products keep on changing every now and then. The cash collected will depend on the price per litre.Records of price

changes and the amount of stock at the time of the change will go a long way in control of fraud.

2.1.5 Monitoring transaction

According to the American institute of Certified Public Accounts (1963), management has the responsibility for devising, installing and supervising an adequate system of internal control. Any system redress of its fundamental soundness may deteriorate if not reviewed periodically. The system of internal control must be under continuing supervision to determine whether prescribed policies are being interpreted properly and are being out, changes in operating conditions have to made the procedures cumbersome, absolute or inadequate and effective corrective measures are taken promptly where break downs in a system appear. An internal audit staff is a strong factor in a system of internal control, since it provides a means of surveying the effectiveness of and adherence to the prescribed.

Manasseh (1990) defines internal auditing as an independent appraisal of activities within an organization aimed at ensuring that the management operates efficiency so as to manage business in a better way. Also in managerial tool, which acts as a watchdog over the company's entire control system.

According to Tendon (2002) internal control is exercised in the form of internal check and internal audit. Internal audit is critical appraisal of functioning of various operations of the enterprise including the functioning of the system of the internal check. Exceptions from normal functioning of internal check system are exposed in internal audit. Accuracy, completeness, reliability and timeliness of accounting information are tested and reported for remedial action.

Non- accounting areas like operational side of enterprise are critically studied, analyzed and weakness of the system or practice viz, inefficiency, wastage, frauds, and others are brought to the notice of the management. Suggestions for

increasing the effectiveness of the system, for improving the productivity of business are offered.

A properly designed internal control system encourages adherence to prescribed managerial policies. It also promotes operational efficiency, protects the business assets from waste, fraud and theft, and ensures accurate and reliable accounting data. For large companies internal auditing department independently appraises the firm's financial and operational activities. In addition to reviewing for errors and regulations, the internal audit staff attempts to uncover wasteful and inefficient situations. To be effective the internal staff attempts to uncover wasteful and inefficient situations. To be effective, the internal staff must be independent of operating functions and should report top high ranking executive or to the firm's board of directors.

Like any other organizations, Petro City Uganda will require to uncover wasteful and inefficient situations. This will be done by monitoring the situation on daily basis through stock and cash reconciliations at the end of each shift. Any mismatch will have to be investigated and mitigation measures taken immediately, internal audits will have to be done regularly to attempt to highlight any deliberate and unintended lapse on the internal controls.

2.1.6 Reporting systems

One most important step in controlling organization activities as stated by Stettler (1982) is designing and operating an information system to accurately record, summarize and report on all activities in order to provide necessary feedback on the result accomplished. It is through this report of activities on the past activities prompt institutions of correctives.

In this case of Petro City Uganda, reports will have to be made to the management for the subsequent corrective action. For instance, a pump attendant will report malfunction of the machine that is likely to cause product loss or inefficiency to the station manager will convey the same report to the maintenance department at the head office for action. Failure to report such an

incident will imply that no corrective action will be taken in time and may lead to massive loss of product through leakage, incorrect measurements of fraud. Accounting reports send to head office from the station will be analyzed to show the profitability and efficiency of the given stations.

2.2 Successful inventory management

Various types of inventory in stock of current resources will be very prominent in the balance sheet of any business (Kakuru, 2007). These include stocks of raw materials, work-in-progress, finished goods and supplies such as stationery. Though inventories are idle resources they play a major role of smoothening out business resources activity thereby enabling the business to be flexible in purchasing, operations and making. Ross, Westerfield and Jordan (2003) noted that a retailer's inventory could present over 25% of the assets. This implies committing huge amounts of business resources in idle stock thus successful inventory management will be mandatory for survival of the business.

Inventories are an essential investment with clear benefits that the business cannot afford to ignore however, investment in inventories involve costs. Total inventory costs are classified as ordering (set up) costs and carrying cost. (Kakuru 2007)

Ordering costs include administrative costs in preparing and dispatching orders, communication with suppliers, placing orders into warehouses. These are costs incurred right from the time orders of inventories are placed to when the orders are actually received and placed in business premises. Normally, the ordering costs per order decrease with increase in the size of the order due to the economies of scale and vice versa.

Carrying costs are expenses incurred to keep the inventories in the business, from the time of receipt to the time they enter production or marketing functions. They include the following;

1. Storage costs
2. Opportunity cost of funds tied up in inventories,
3. Losses due to demurrage, pilferage or other causes of damage
4. Risk that the inventory will become absolute
5. Lighting security, insurance, heating and other chores needed to maintain the value of the inventory

The costs increase as more inventories are maintained. For instance Petro city Uganda will store petroleum inventories in huge tanks at its depot. Some product will also be stored at the government reserve tanks in Jinja town and both of these will involve some storage cost. Due to high price of petroleum products, huge sums of funds will be tied up and insurance for the product will be necessary, losses due to pilferage and leakage will be inevitable.

According to Ross, et al. (2000), inventory management involves acquiring the inventory, selling and collecting the sales proceeds smoothly. Brearly, Myers, and Marcus (2004) cite the following as the features of inventory management.

- i. Optimal inventory level involves trade off between carrying cost and order costs.
- ii. Carrying costs involve storage costs and tied up capital costs.
- iii. Inventory level decreases when storage / interest cost increases and inventory level increases when stocking costs increase.
- iv. Inventory level is not directly proportional to sales

In general the level of inventory should always depend on the forecast of sales which like any other forecast is subject to uncertainty. Ross, et al (2003), notes the basic goal of inventory management as minimizing the sum of carrying costs and the stocking costs (shortage or ordering costs).

2.2.1 Managing stock-outs

Stock-outs demonstrate a failure in inventory management and can be very expensive to a business due to idle resources, and loss of sales. In any business, stock-outs should be avoided by all means. Riggs (1978), cite accelerated demand, extended lead time and spurt in demand coupled with delivery delay as the conditions that contribute to stock-outs after a replenishment order has been placed. The most used approach in attaining the goals of inventory management is the economic order quantity (EOQ) analysis which is used the EOQ model. The size of order that minimizes the total inventory cost while assuring liquidity to the business is called the Economic Order Quantity (Kakuru, 2007). The EOQ model makes the following assumption:

- i. The rate of usage (demand) of the product over the planning period is known with certainty and is constant.
- ii. The inventory is replenished periodically over time. Such replenishment is instantaneous and there is no lead time between the ordering and receipt of inventories in the business.
- iii. Ordering cost per order are known with certainty and fixed.
- iv. Carrying costs per unit of inventory are known with certainty.

In practice, these assumptions are not realistic and attainable. There is thus a risk of running out of supplies created by variations in the usage rate & replenishment lead-time. Riggs (1987) states that the way to avoid running out of stock is to hold a buffer supply (safety stock) beyond the amount consumed by average usage during an average lead time. This involves determining a safety stock level that balances the opportunity cost of stock-outs against carrying costs for the extra stock in storage.

2.2.2 Minimizing Wastage

Wastage in inventory especially petroleum products will refer to losses due to pilferage, leakages, spillages and evaporation. Good inventory management through internal control systems will ensure that these losses are minimized. Wastage is classified under the carrying cost in inventory management. Other carrying costs include space, insurance and opportunity cost of holding inventory (Brealy et al, 2004). However, for an ideal quantity of inventory, the latter three will be more or less like fixed costs. This leaves the losses due to spoilage and theft as the controllable variable of carrying costs. Internal control will ensure that these losses are minimized or eliminated together.

2.3 Equipment and climate

Equipment used in handling petroleum products inventory will have impact towards its successful management. This is because the products are in liquid form and quantities sold will depend on customers demand. Thus, very reliable and accurate equipment will be required. However, it is important to note that equipment can only be accurate to a certain tolerance given the varying environment conditions. This is very true for the petroleum products whose characteristics may slightly change due to climate. For example in a very sunny day (season) petrol will tend to vaporize and making it difficult for accurate measurement. On the other hand, equipment is also bound to break down or malfunction without notice. This may frustrate the other efforts made in inventory management.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This section describes the research methodology and includes the research design, target population, sampling produces, sample size, sources of data, data collection methods, data processing and analysis.

3.1 Research design

The study across sectional research design to evaluate the determination of internal control systems and inventory management in petroleum industry. This was because data about the variable can be easily obtained from secondary sources at any time.

3.2research population

The research targeted a population about 51 people which will include the top managers as well as the support staff from different departments in the company. The main target sample will be employees as a whole number totaling to 51.

3.3 sampling procedure

3.3.1 Simple random sampling

The researcher used this method in order to avoid bias in the process of selecting the respondents from the group of possible respondents for the number needed for this study.

3.3.2 stratified sampling

The researcher also used the methods where group of possible respondents were arranged in different groups within targeted such as administrators, committee members and other officers in the department.

3.4 Sample size

From the targeted population of 51 employees selected, 20 from top management, 15 were employees from the financial department and 16 were subordinate workers from other departments. The researcher used the Yamane formula (1973) to calculate the sample size.

$$N = \frac{N}{1 + ne^2}$$

Where n= sample size, N= total population, e= deviation of sampling (degree of error at 0.05 level of significance)

$$N = \frac{51}{1 + 0.05^2}$$

=48people

From the above formula 48 people were taken as the sample size.

3.5 Data collection

3.5.1 Sources of data

Data was collected from two main sources that are primary and secondary sources. The study based on primary source was collected from Petro City Uganda and secondary source was collected from journal articles, textbooks, magazines and other literature which were relevant to the variables under study.

3.5.2 Data collection methods

The researcher set and looks formalized to the respondents. They were later collected by the researcher for presentation and analysis.

3.5.3 Observation

The researcher used participant observation whereby researcher attempted fully in the lives and activities of subjects the data collected through observation is highly reliable because the researcher has to see exactly that is being on the ground.

3.5.4 Questionnaire

The researcher used questionnaire to collect primary data where by the questionnaires was distributed to various respondents within the targeted population so as to reliable and various views of the respondents.

3.5.5 Interviews

The researcher used interview method to collect data where by structured interview was used that is face to face questions were asked to respondents. This is because the researcher wanted to get more details through the use of probe questions.

3.5.6 Documentary review

This method involves reading documents related to inventory management. It is advantageous because it will enable the researcher to the first-hand information through critical examination of recorded information. It will also be used to cross check information received from the researcher procedures.

3.6 Data processing and analysis

Data obtained from the field and available literature was compiled, sorted, edited, classified, coded and entered into the computer for analysis using statistical package for social scientists (spas). Correlation statistics was used to explain the relationship between internal control systems and inventory management.

3.7 Limitations of the study

- i) Low levels of literacy of the respondents. Some respondents were illiterate and unable to give the required information. The researcher used probe questions so as to get all the required information.
- ii) Lack of enough secondary data. The researcher lacked enough secondary data from the petro city because the management never wanted to reveal their sensitive information. And the researcher was able visit public libraries and different plus reading articles and newspapers to overcome lack of enough secondary data.
- iii) Some respondents may refuse to give detailed information due to fear that they may lose their jobs. The researcher got an introduction letter from the university seeking permission to carry out research in Petro City Uganda.
- iv) Limited access to data within the university library thus limiting access to enough literature to be used in the study.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Overview

This chapter presents and analyses findings. The sample of the study considered of twelve petrol stations operated by petro city Uganda ltd in Kampala district. Forty eight questionnaires were distributed to twelve stations of each of the sampled stations.

4.1 Demographic information

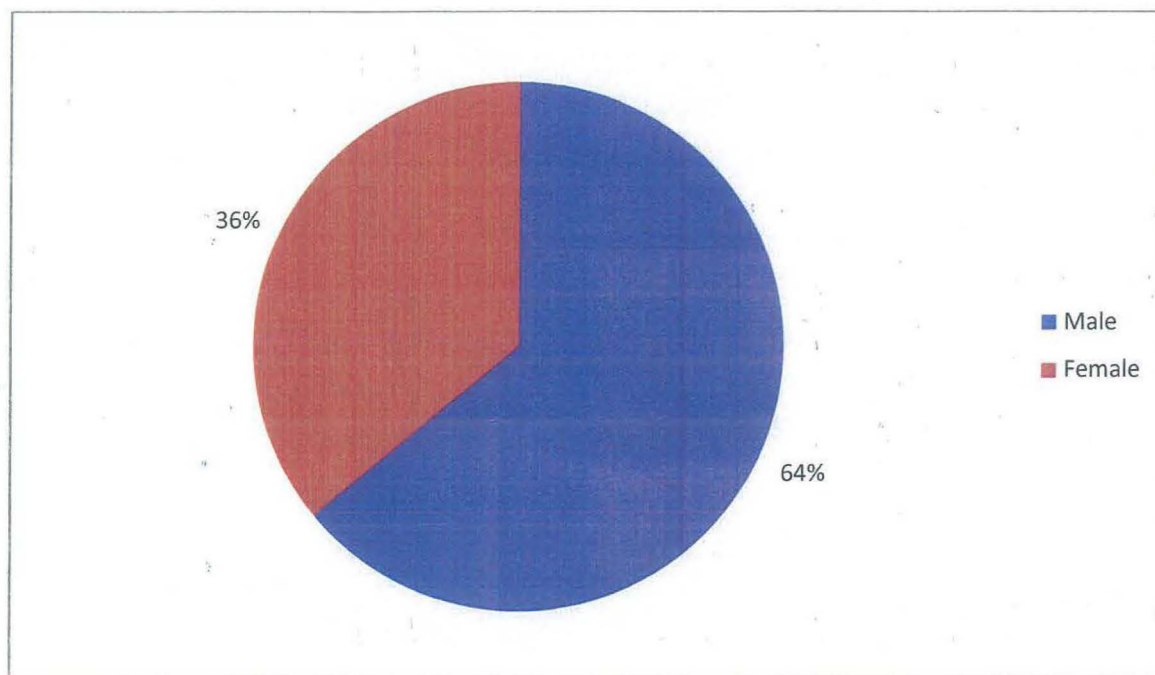
The data in this section is presented using pie charts, frequency tables and figures and show the general characteristics of the sample including gender, age and category of education, category of position, duration in position held and the level of education.

Table 4.1: Showing Gender Composition

The findings indicate that 64% of the respondents are males and 36% females. This means that males dominated list of the respondents. It also implies that petrol stations decisions are male dominated.

Sex	Frequency	Percentage
Male	31	64%
Female	17	36%
Total	48	100%

Figure 1: Gender



4.2 RESPONDENT'S AGE

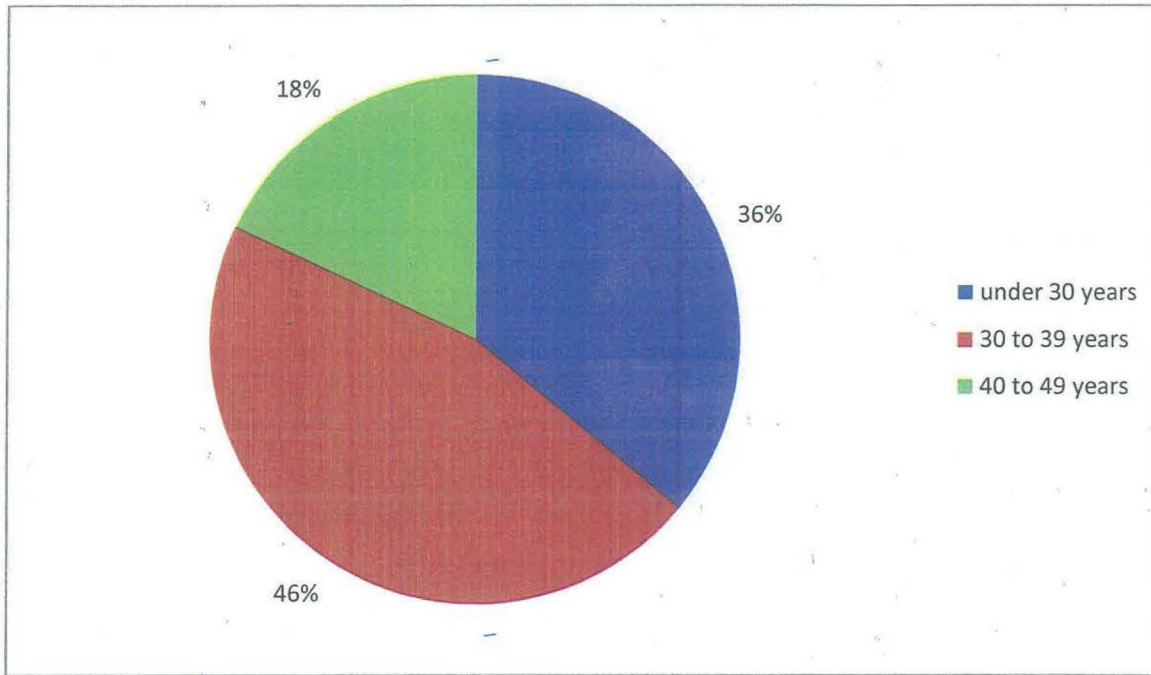
It was observed that majorities i.e. 45.5% of informants are aged between thirty and thirty nine years, 36.4% are under 30 years whereas 18.2% are forty to forty nine years old as it is shown in table 4.2. It was also found that 54.5% of the respondents were married whereas the rest 45.5% are single.

TABLE 4.2 AGE OF RESPONDENTS

	Frequency	Percent (%)
Under 30 years	17	36.4%
30 to 39 years	22	45.5%
40 to 49 years	9	18.2%
Total	48	100.0%

Source: Field Data

Figure 2: Age of Respondents



4.3 Educational Level

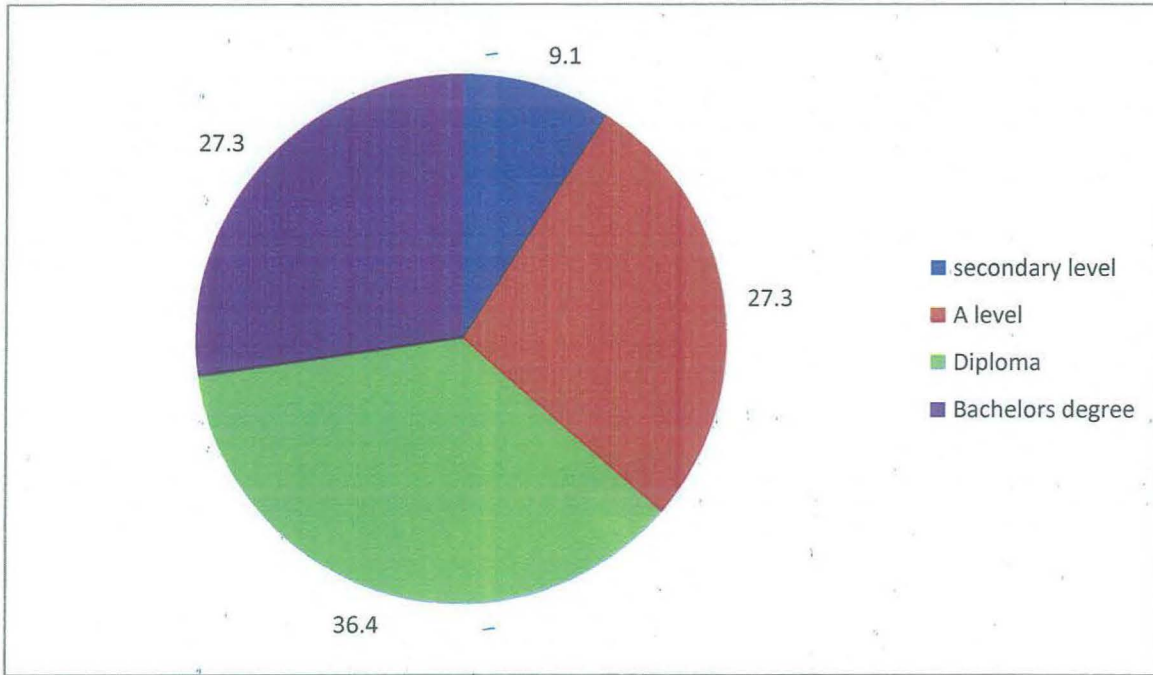
It was observed that 36% are bachelor's degree holders 27.3% are diploma holders and another 27.3% have only A level of education while 9.1% have secondary level of education. None of the respondents has a master's degree. This information is displayed in table 4.3.

Table 4.3: Educational Level

	Frequency	Percent (%)
Secondary level	4	9.1
A level	13	27.3
Diploma	13	27.3
Bachelors degree	18	36.4
Total	48	100.0

Source: Field Data

Figure 3: Educational Level



4.4 Duration At Petro City Uganda

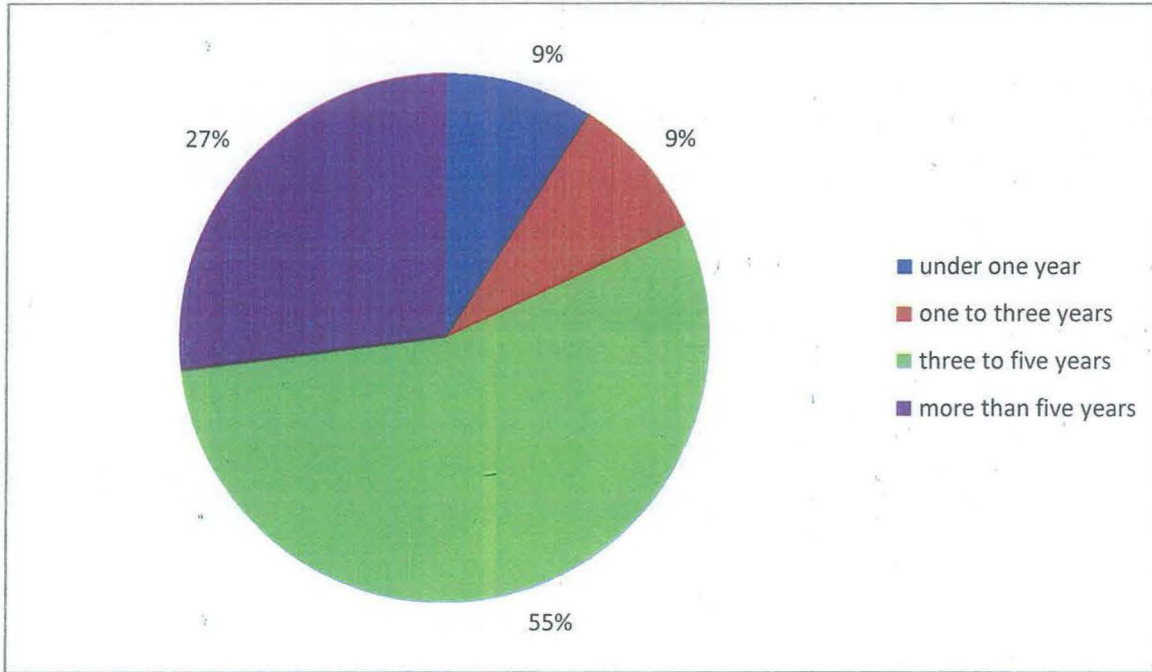
Table 4.4 respondents the periods in which, participants have worked for this particular company. 54.5% of the respondents have worked for petro city Uganda between three to five years. 27.3% have worked for the company for over five years. The rest have worked for company for less than three years.

Table 4.4: duration worked for petro city Uganda by the respondents

	Frequency	Percent (%)
Under one year	4	9.1
One to three years	4	9.1
Three to five years	26	54.5
More than five years	12	27.3
Total	48	100.0

Source: Field Data

Figure 4: Duration Worked For The Company



4.5 The nature control system employed at petro city Uganda stations in Kampala district

Table 4.5 summarizes the data collected on the existence other various elements of internal control systems at petro city Uganda in Kampala district. The model response by the participants was code 2 which represents the statement I Agree.

Table 4.5: Existence Of Internal Control System at petro city Uganda stations in Kampala district.

	Existence of policies	Categorization of duties into different levels	Authorization by responsible staff	Collecting & summarizing of data	Contacting of regular internal audits	Existence of reporting system
N	11	11	11	11	11	11
	0	0	0	0	0	0
Mean	2.00	1.91	1.91	2.09	1.73	2.73
mode	2	2	2	2	2	2

The modal response by the participants is code which represents them statement 'agree'

Source: field data

4.6 The Relationship Between The Various Elements Of Internal Control Systems Existing At Petro City Uganda Stations In Kampala

Table 4.6 shows the correlation relationship of the existence variables. Existence of policies and procedures, segregation of duties, authorization of transactions by responsible staff and collecting & summarizing of data all has a positive Pearson's correlation coefficient against each other. This means that these variables positively influence each other. However, this relationship is strongest between collecting and summarizing of data and the existence of policies and procedures with $r=0.677$ and significance level of 0.02. the positive relationship is also strongest between collecting and summarizing of data and authorization by responsible staff with $r=0.671$ and significance level of 0.024.

Containing of regular internal audits and categorization of duties have a weak negative relationship with $r=-0.194$ whereas existence of reporting system has a negative correlation internal with all the other elements (variables). The

relationship is strongest against of internal audits with $r=0.741$ and significance level of 0.009.

Table 4.6: Correlation Of The Variables (Nature Of Internal Controls)

Correlations

	Existence of policies	Categorization of duties into different levels	Authorization by response staff	Collecting of regular internal audits	collecting of regular internal audits	Existence of reporting system 1
Existence of policies Pearson correlation sig. (-tailed N)	1.11	.303 .65 11	.303 .65 11	.677* .022 11	.195 .565 11	.83 .809 11
Categorization of duties into different levels. Pearson correlation sig. (2 tailed N)	.303 .365 11	1.11	.100 .770 11	.056 .870 11	.194 . 588 11	.382 .246 11
Authorization by response staff Pearson	.303 .365 11	.100 .770 11	1.11	.671 .024 11	.516 .104 11	.046 .894 11

correlation sig. (2 tailed N						
Collecting and summarizi ng of data Pearson correlation sig. (2 tailed N	.677 .022 11	.056 .870 11	.671 .024 11	1.11	108 .751 11	.046 .894 11
Contacting of regular internal audits Pearson correlation sig. (2 tailed N	.195.565 11	.194 .568 11	.516 .104 11	.108 .751 11	1 . 11	.741 .009 111
Existence of reporting system 1 Pearson correlation sig. (2 tailed N	.083 .809 11	.382 .246 11	.382 .246 11	.046 .894 11	.46 .894 11	1 . 11

4.7 Effects of policies & procedures on inventory losses

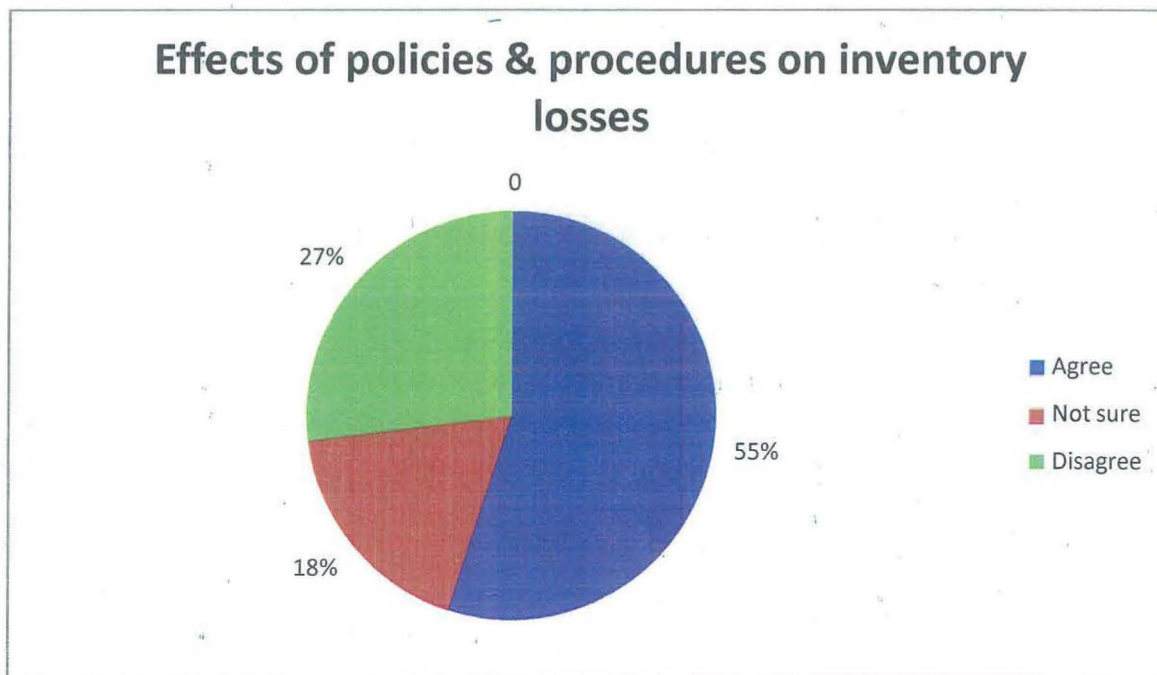
Respondents were asked whether policies and procedures had any effects on inventory losses (management). Out of the 11 respondents 54.55 agreed, 18.2% were not sure whereas 27.3% disagreed. This summarized in table 4.7

Table 4.7 effects of policies & procedures on inventory losses.

	Frequency	Percent (%)
Agree	26	54.5
Not sure	10	18.2
Disagree	12	27.3
Total	48	100.0

Source: Field Data

Figure 5: Effects of Policies & Procedures On Inventory Losses



4.8 Effects of segregation of duties on inventory control

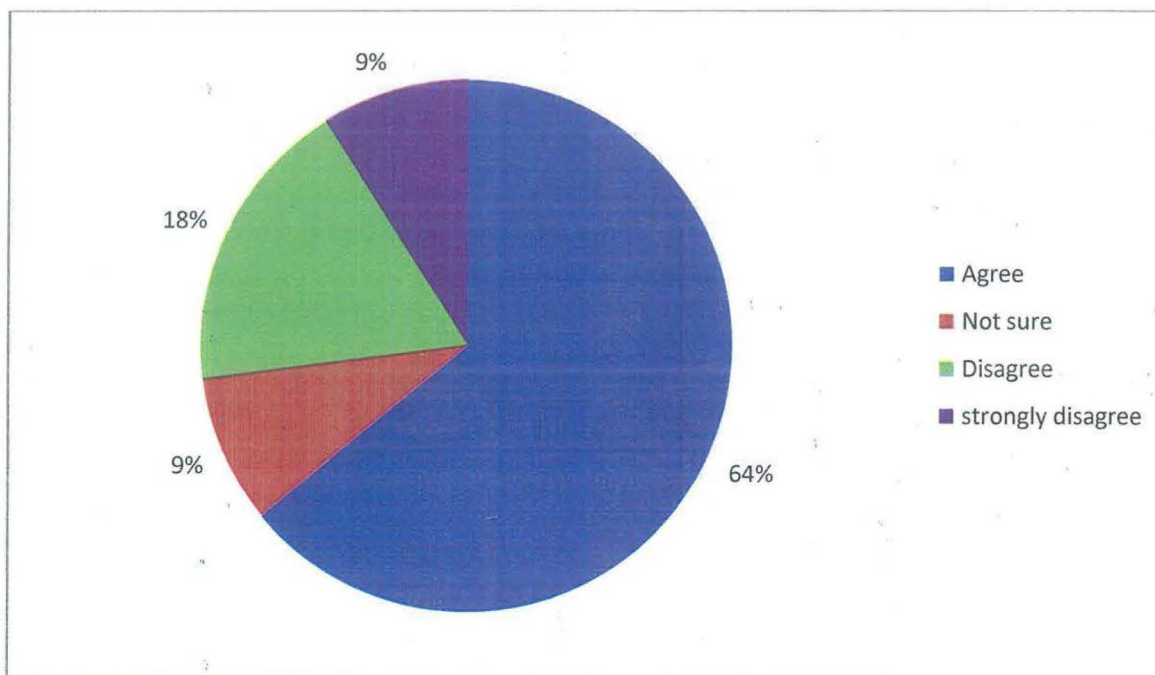
Table 4.8 presents the response of the participants on the effects of segregation of duties on inventory control. 63.6% agreed that segregation of duties at the station had an impact on the inventory management 18.2% disagreed whereas 9.1% were not sure.

Table 4.8: Effect of segregation on inventory control

	Frequency	Percent (%)
Agree	31	63.6
Not sure	4	9.1
Disagree	9	18.2
Strongly disagree	4	9.1
Total	48	100.0

Source: Field Data

Figure 6. Effects of segregation on inventory control



4.9 Effects of authorization of transactions on successful inventory management

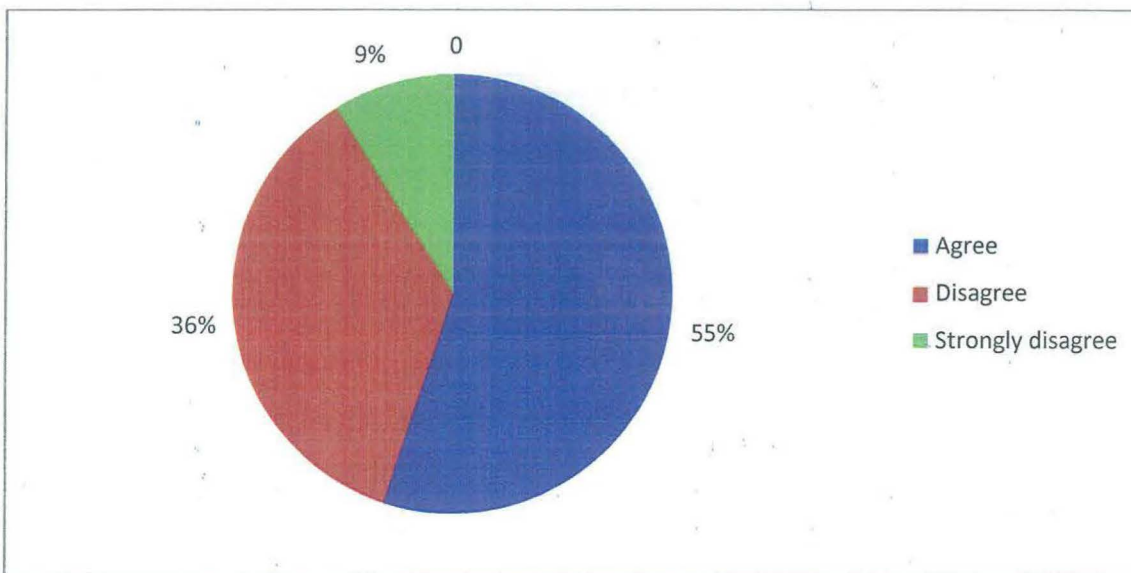
As shown on table 4.9, 54.5% of the respondents agreed that authorization of transactions had impact on successful management of inventory whereas 45.5% disagreed.

Table 4.9 Effect of authorization of transactions on successful inventory management

	Frequency	Percent (%)
Agree	26	54.6
Disagree	18	36.4
Strongly disagree	4	9.1
Total	48	100.0

Source: Field Data

Figure 7: Effect of authorization of transactions on successful inventory management.



4.10 Effect of recording and summarizing data on successful inventory management.

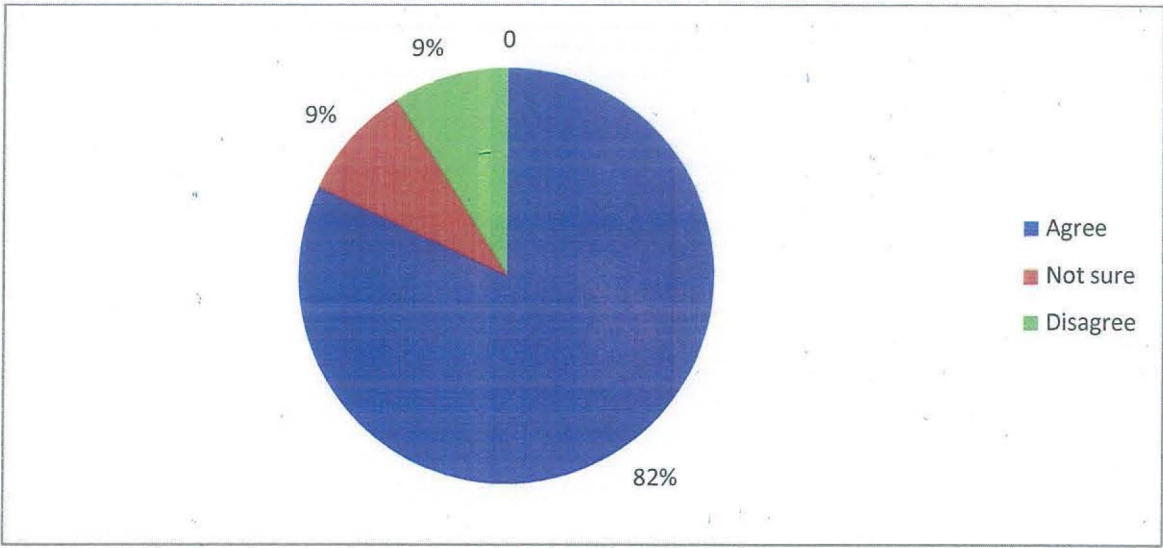
Table 4.10 shows that 81.8% of the respondents agreed that recording and summarizing of data led to successful management of inventory whereas only 9.1% disagreed 9.1 % were not sure.

Table 4.10: Effect/use of recording & summarizing data in successful management of inventory.

	Frequency	Percent (%)
Agree	40	81.8
Not sure	4	9.1
Disagree	4	9.1
Total	48	100.0

Source: Field Data

Figure 8: Effect of recording & summarizing data in successful management of inventory



4.11 Level of stock outs at petro city Uganda stations

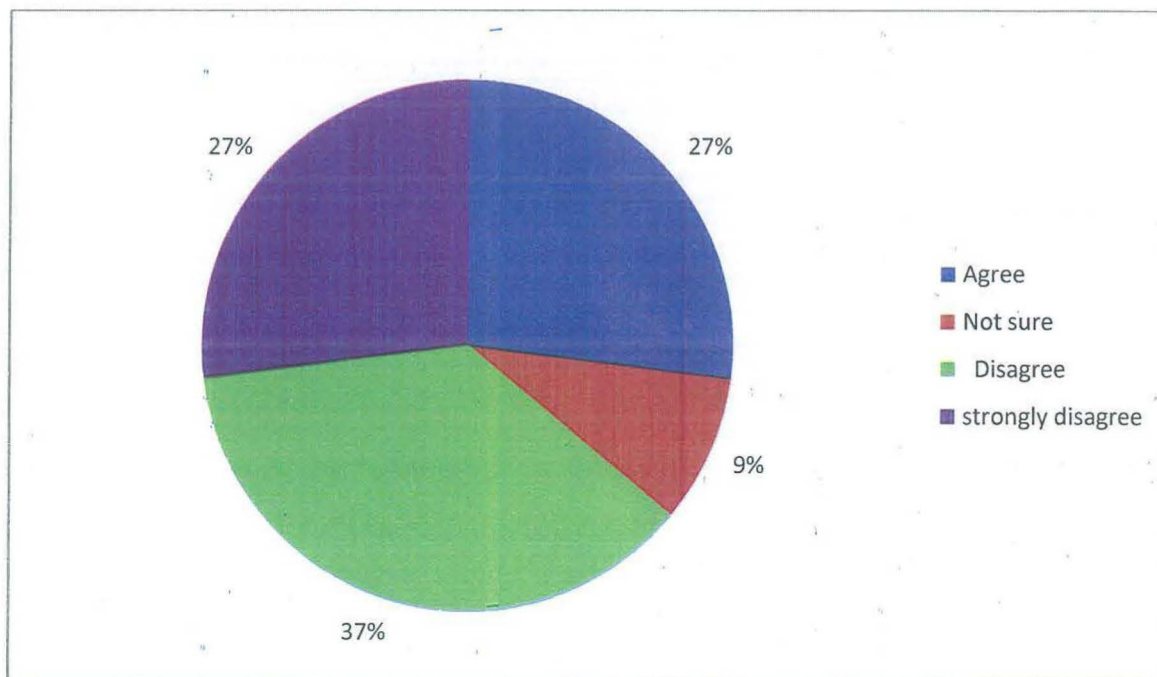
It was observed as presented on table 4.11 that 63.7% of the respondents disagreed that they had a stock out at least once per every month. Only 27.3% agreed that they had stock out at least per month while 9.1% were not sure.

Table 4.11: There are stock outs at the stations at least once per month.

	Frequency	Percent (%)
Agree	13	27.3
Not sure	4	9.1
Disagree	18	36.4
Strongly disagree	13	27.3
Total	48	100.0

Source: Field Data

Figure 9: There are stock outs at the stations at least once per month



4.12 Level of inventory wastage at petro city Uganda stations

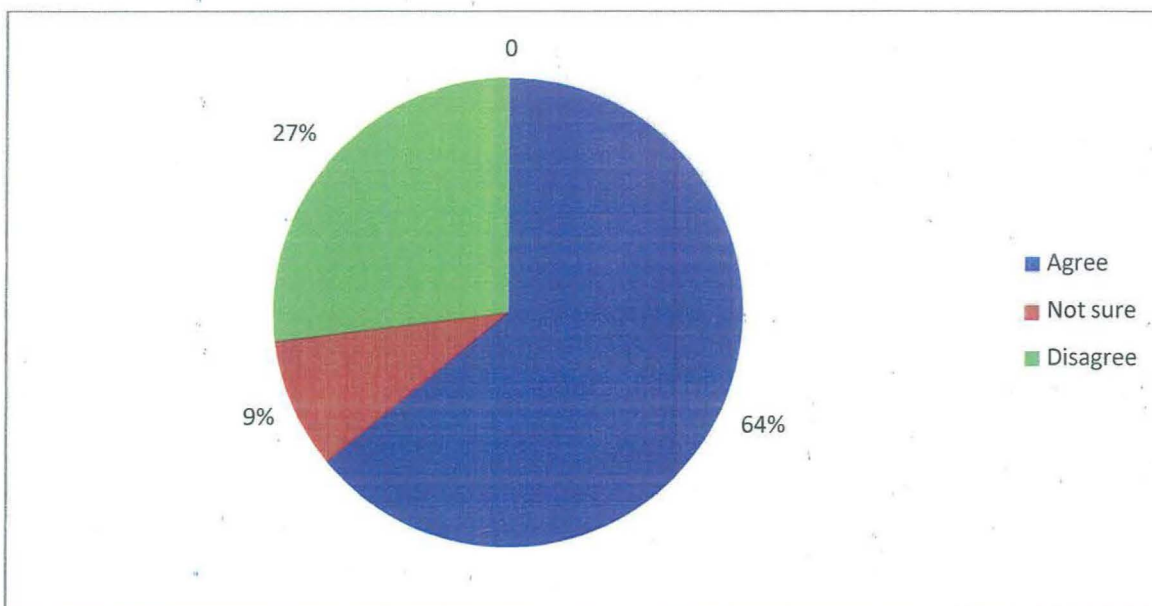
Table 4.12 show that 63.6% of the respondents agreed that inventory wastage (losses) was within industry’s norm whereas 27.3% disagreed 9.1% were not sure.

Table 4.12: Losses (wastage) within allowable limits (industrial norm)

	Frequency	Percent (%)
Agree	31	63.6
Not sure	4	9.1
Disagree	13	27.3
Total	48	100.0

Source: Field Data

Figure 10: Losses (wastage) within allowable limits (industrial norm)



4.13: Optimum wastage and stock-out

As presented on Table 4.13 of the respondents agreed that inventory wastage and stock out was at the minimum and could not be improved further.

However, 5 4.5% of the respondents still believed that the wastage and the frequency of stock outs could be improved. 18.2% of the respondents were not sure of whether the wastage and level of stock-out was optimum.

Table 4. 13: Wastage & stock-outs are at the minimum

	Frequency	Percent (%)
Agree	13	27.3
Not sure	9	18.2
Disagree	26	54.5
Total	48	100.0

Source: field data

CHAPTER FIVE

DISCUSSION, SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

This chapter discusses the implication of the results as presented in chapter four. In addition, the chapter summarizes findings, and presents conclusion and recommendations of the study. The chapter also presents the limitation of the study and suggests areas for further researchers.

5.1 Discussions of Findings

This section is concerned with discussion of findings relevant to each research question.

5.1.1 The nature and scope of internal control system employed at petro city Uganda stations in Kampala district.

This section discusses information gathered to answer research question one. In chapter four, 90.9% of the respondents agreed that policies and procedures exist in their stations. This concurs with Taylor and Glezen (1991) who stated that for all financial statement accounts, valid policies and procedures must exist to assure that the recording, processing, summarizing and reporting data the financial statement accounts are consistent with financial assertions. Figure 4.3 shows that there is segregation of duties at all the petrol stations that participated in the study. It is also observed that 100% of all the participating stations have their transactions authorized by responsible staff as shown on figure 4.4. This is line with Manassch (1990) view that segregation of duties is achieved by assigning different custody of assets. Transactional data is collected and summarized at the 81.8% of stations under study as confirmed by the respondents. It is uncertain that 19.2% of the stations collect and

summarize data. According to Guy et al. (1999), an accounting system should have and appropriate methods to identify and record all valid transactions.

Once again, it is found out that all the stations under the study contact internal audits regularly (every month) as confirmed by 100% of the respondents. Manasseh (1990) pointed out that Internal audit is a managerial tool, which acts as a watchdog over the company's entire internal control system.

However, it is observed that only 54.5% of the stations have a reporting system. 36/4 of the stations do not have a reporting system and it is no clear that the reporting system exists 9.1% of the stations as indicated by the respondents who are not sure.

Figure 4.8 presents the data collected on the scope of internal control systems at petro city Uganda stations in Kampala district. 100% of respondents agree that policies and procedures are communicated to the employees. They also agree that every employee is assigned specific duties at the station.

The system of internal control according to American Institute⁴ o Certified Public Accountants (1963) must be under continuing supervision to determine whether prescribed policies are being interpreted properly cumbersome, absolute, or inadequate, and effective corrective measures are taken promptly where breakdowns in a system appear. On the other hand, 100% of the respondents agree that there is monitoring of transactions at the stations.

One of the most important step in collecting organizational activities as stated by Settlers (1982) is designing and operating an information system to accurately record, summarize and report on all activities in order to provide necessary feedback on the result accomplished. It is through this report of activities on the past activities that will prompt institution of corrective actions. However, 54.5% of the respondents disagree that there is feedback on the

reports they sent after analysis. 45.5% confirm that there is feedback after the analysis of reports.

It is also observed that 81.8% of the respondents being not sure whether it is easy to understand the procedures and policies with 18.2% of the respondents being not sure whether it is easy to understand the procedures and policies or not.

Table 4.5 summarizes the response on the existence of the elements of internal control system. The model response by the participants is coded 2 which represent the statement; Agree'. This shows internal control system exists at petro city Uganda station at in Kampala district. Table 4.6 shows the relationship of the elements of internal control system. Existence of policies and procedures, segregation of duties, authorization of transactions by responsible staff and collecting & summarizing of all has a positive Pearson's correlation (r) against each other. This means that these variables positively influence reach other. However, this relationship is strongest between collecting and summarizing of data and the existence of policies and procedures with $r = 0.677$ and significance level of 0.02. The positive relationship is also strongest between collecting and summarizing of data and authorization by responsible staff with $r = 0.671$ and significant level of 0.024. We are thus over 95% sure that the above sets of variables positively influence each other. This confirms the importance of each particular element to the proper functioning of internal control system.

It is also noted that existence of reporting system has a negative correlation with all the other elements (variables). The relationship is strongest against the existence of internal audits with $r = 0.741$ and a significance level of 0.009. We are thus over 99% sure that Existence of internal audit negatively affects the existence of reporting system.

5.1.2 The impact of internal control system on the successful management of inventory at petro city Uganda stations in Kampala

Figure 4.9 summarizes the impact of the various elements of internal control system on successful management of inventory at petro city Uganda stations in Kampala district. The study found out that policies and procedures have an influence on the inventory management to 54.5% of the stations. 18.2% are not sure whereas 27.3% disagree. 63.6% of the stations have their inventory management affected by segregation of duties among the employees whereas 9.1% of the stations are uncertain on the effects of segregation of duties among the staff on the successful inventory management. According to the study 54.5% of the stations have the success of their inventory management influenced by authorization of transactions by responsible staff. Authorization of transactions by responsible staff has no influence on inventory control at 45.5% of the stations participating on the study.

Table 4.11 shows that 81.8% of the respondents agree that recording and summarizing of transactional data at the stations leads to successful management at 72.7% of i.e stations participating in the study is influenced by monitoring of transactions in one way or another.

Figure 4.11 shows that 63.6% of the respondents agree that the reporting system has an impact on successful management of inventory at stations whereas 18.2% disagree and another 18.2% are not sure.

5.1.3 Effectiveness of the existing internal controls at petro city Uganda stations in Kampala district.

The various elements of internal control system have to be properly balanced for them to be effective in the management of inventory. To establish how effective the system is the indicators of a good inventory management are used. These are the presence of stock outs and losses (wastage). Presences of stock outs indicate poor inventory management due to lack of or poor estimation of reorder levels. Product losses signify presence of wastage, fraud or pilferage.

Riggs (1987) emphasizes that stock outs demonstrate a failure in inventory management and can be very expensive to a business due to idle resources and loss of sales. Only 27.3% of the stations under the study have regular stock outs as presented on Table 4.12. Brealey, et al. (2004) stated that the losses due to spoilage, and theft as the controllable variable of the carrying cost. This study found out that 63.6% of the stations have unaccounted for losses (wastage) which is within the industry norm. 27.3% of the stations had wastage above the industry's norm while 9.1% of the stations were uncertain on their position on terms of the level of wastage.

The study also established that the 54.5% of the stations are not operating on the stock outs and wastage and an improvement is possible. 27.3% of the stations are operating optimally and their level of stock outs and wastage in minimum and could not be improved further 18.2% of the Stations under the study are uncertain.

5.2 Summary of findings

This research has found out that internal controls exist at petro city Uganda. However, the impact of the internal controls depends on the level of implementation of the study. Application of some elements of internal control system and omission or lax on at least one of the rest could completely jeopardize the whole process. This is because the elements are interlinked and they have to be applied together for the system to function properly. For instance, the study found out that the reporting system is weak and it does not exist at all stations. This has affected the system even though the other elements are confirmed to be present.

The study has also reviewed that existence of internal audits has a negative influence on the existence of the reporting system at the station. This is interpreted that the stations will tend to substitute the reporting system with the internal audits. The manager will thus be of the opinion that since internal

audits are regularly conducted, then there should be no reporting. This should be discouraged.

Each of the variables (elements of internal control system) has a way it affects the inventory management and is not related to how the others affect the same inventory.

The study has shown that stock outs and wastage exist at the station. This is an indicator that internal control system is not functioning as required. The system thus has an impact on the level of stock outs and wastage. Improvement of the system will go a long way in optimizing the stock out and wastage levels.

Since the wastage and stock outs are still reported at the station, it means that the existing internal controls are not effective enough. The system of internal control reduces but not eliminates the possibility of poor judgments in decision making, human controls being violated by employees and other stakeholders, and the occurrence of unforeseeable circumstances. A sound internal control system therefore provides reasonable but not absolute assurance that an organization will not be hindered in achieving the objectives of the organization in the orderly and legitimate conduct of its business.

5.3 Recommendation

The main goal for an organization like petro city Uganda limited is to make profit. For it to achieve this goal, it must minimize on its operational costs and maximize on trading. The following are the recommendations that will come handy in trying to achieve the said organization goals.

Though policies exist at petro city Uganda stations, they should be re-evaluated and reviewed to ensure that they serve the purpose intended.

Internal control system should be applied in totality if it were to be effective as intended. A lapse, any of the elements will render the system inefficient.

After internal audits the results should be shared with the station staff so as to explore ways of improvement and correction where necessary. The same should apply to the transactional reports.

It seems that internal audits are being taken to replace the function of reporting. This should be discouraged.

5.4 Areas for future research

This research concentrated on the impact of internal control systems on inventory management in Kampala stations. Given that petroleum products are distributed through stations scattered all over the country, there is need to carry out similar study for upcountry station.

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APPENDICES

APPENDIX A: RESEARCHER INSTRUMENTS

Appendix: 1 QUESTIONNAIRE

QUESTIONNAIRE FOR MANAGEMENT AND SUPERVISORY OFFICERS.

Dear Respondent,

This questionnaire is intended to facilitate a study on the study on the impact of internal control system on inventory management in petroleum industry. The study is for academic purposes and is carried out as a partial requirement of award of bachelors' degree in Supplies and Procurement Management of Kampala International University.

Your responses will be treated with utmost confidentiality. In order to accomplish the study you are requested to complete this questionnaire. In case you are interested in receiving a copy of the outcome of the study, please indicate your contact address.

The data obtained from you will be very useful in understanding the impact on the internal control system on inventory management in petroleum industry Uganda.

SECTION A: GENERAL INFORMATION

GENDER (Tick in the appropriate box).

SECTION A: DEMOGRAPHICAL INFORMATION

1. GENDER (Tick in the appropriate box).

A) Male

B) Female

2. AGE OF THE RESPONDENTS

- A. 18-28 years of age.
- B. 29 to 38 years of age.
- C. 39 to 48 years of age.
- D. 49 to 58 years of age
- E. above 60 years of age

3. INFORMATION ON POSITION

- Name of department
- Category of position
 - a. Management
 - b. Supervisory
 - c. Other

4. DURATION IN CURRENT ORGANIZATION EMPLOYMENT

- a. Below 1 year
- b. 1 to 4 years
- c. 5 to 9 years
- d. 10 to 14 years
- e. Above 14 years

5. HIGHEST LEVEL OF EDUCATIONAL/PROFESSIONAL QUALIFICATION

- a. Ordinary level
- b. Advanced level
- c. Diploma level
- d. Bachelors degree
- e. Honors degree
- f. Master degree
- g. Professional level

h. Others
(Specify).....

SECTION B: INTERNAL CONTROL SYSTEMS

From the following set of questions, tick the box that matches your view most closely

NB: **SA:** Strongly Agree; **A:** Agree; **SD;** Strongly Disagree; **D:**Disagree; **NS:** Not sure

		SA	A	NS	D	SD
6	Policies and procedures exist in petro city Uganda					
7	The guidelines and work procedures are communicated to all staff					
8	These guidelines and work procedures are easy to understand by all staff					
9	The procedures are regularly reviewed and changes made known to concerned employees					
10	The policies help in the prevention of fuel losses due to fraud and spillage					
11	Duties at station are categorized into different levels					
12	An employee other than the one dispensing the product balances and reconciles the daily sales					
13	Employees are trained for the work they do					
14	Segregation of duties helps in minimizing cases of fraud and fuel losses					
15	Employees are more efficient because they do specific jobs					
16	Transactions are authorized by staff who are given such responsibilities					

17	Authorization by responsible persons has reduced cases of fraud and fuel losses					
18	There are specific pre-printed stationery for the various operations at petro city Uganda					
19	The record kept at petro city Uganda is adequate to safeguard against loss of petroleum products					
20	Information recorded at various points of operation at petro city Uganda is used to detect and control fraud and fuel losses					
21	Petro city Uganda conducts an internal audit every month					
22	An internal audit in petro city Uganda is only conducted when there is a suspected losses of fuel or cash					
23	Petro city Uganda has a daily stocks tracking procedure					
24	Stations send reports to petro city Uganda head office every day and at end of the week					
25	Feedback on the sent reports is sent back to the stations					
26	Once the reports are analyzed, the findings are used for improvement purposes					
27	The reports help in preventing future fuel losses and stock outs					
28	There is improved performance due to sharing of reports					

SECTION C: INVENTORY MANAGEMENT

✓ From the following set of questions, tick () the box that matches your view most closely.

NB: **SA:** Strongly Agree; **A:** Agree; **SD;** Strongly Disagree; **D:**Disagree; **NS:** Not sure

		SA	A	NS	D	SD
29	The station replenishes fuel only after a stock out					

30. Do you have stock outs?

At least once per month

Before every restocking

Never

APPENDIX II:

INTERVIEW GUIDE

1. What is the nature and scope of the elements of internal; control system employed at petro city limited?
2. How has internal control system impacted on the successful management of inventory in your organization?
3. How effective is the existing internal control system in your organization?
4. How are internal control system emphasized in your organization?
5. What are weaknesses within the internal control systems in your organization?
6. How the above are challenged solved?
7. Who are the key players when dealing with internal controls in your organization?

Thank you for your previous time and contribution

Researcher

From Kampala international university

APPENDIX III

TIME FRAME OF THE STUDY

ACTIVITY	TIME IN WEEKS			
	1	2	3	4
PROPOSAL WRITING	✓			
DATA COLLECTION		✓		
DATA ANALYSIS			✓	
SUBMISSION				✓

APPENDIX IV:

BUDGET

No	Item	Amount
1	Transport	15000
2	Photocopying	50000
3	Printing	80000
4	Binding	9000
5	Literature collection	100000
6	Internet	20000
7	Food facilitation	60000
Total		334000