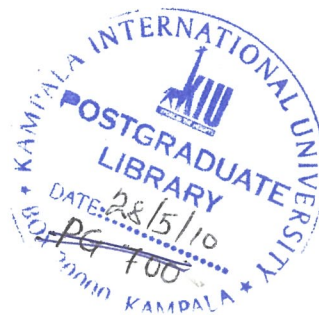


IMPACT OF INTERNAL CONTROL SYSTEMS ON THE PETROL STATION INVENTORY
MANAGEMENT IN UGANDA: A CASE STUDY OF KAMPALA STATIONS
OPERATED BY PETRO UGANDA LIMITED.

By

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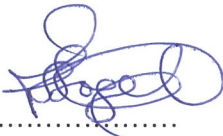
A THESIS SUBMITTED TO THE SCHOOL OF POST GRADUATE STUDIES IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF
MASTERS OF BUSINESS ADMINISTRATION OF
KAMPALA INTERNATIONAL UNIVERSITY

March, 2009



DECLARATION

I, **Festus John Ngeta** hereby declare that to the best of my knowledge, this Thesis has not been submitted for an award in any other university or for publication as a whole or in part. It is my effort and original piece of work. Whereas, other documents that were consulted have been cited and mentioned in references.

Signed.....

Date 25/09/09.....

Festus John Ngeta



APPROVAL

This Thesis has been submitted for examination with my approval as the University supervisor.

Signed

Date.....

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Mrs. Ouma Maureen

Supervisor

ACKNOWLEDGEMENTS

The success of this work would not have been possible without the efforts and support from others. For this reasons I appreciate all the assistance provided to me during the course of my study, research and the compilation of this report.

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My sincere thanks are expressed to management of PETRO Uganda Ltd for allowing me carry out the study at their stations and also to the station managers who provided me with data by responding to the questionnaires.

To you all, I say

THANK YOU AND GOD BLESS YOU

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ABSTRACT

The purpose of this study was to find out the impact of internal control systems on inventory management at Petro Uganda stations in Kampala district. The first objective was to establish the nature and scope of internal control system employed at Petro Uganda. The second objective was to examine the impact of internal controls on successful management of inventory at petro Uganda stations in Kampala district. The third objective was to assess the effectiveness of the existing internal control system at Petro Uganda stations in Kampala district.

The design of the study was a case study with Petro Uganda limited used as an illustrative example. The population was 12 station managers and all the population was utilized for the study. The study found out that internal controls exist in Petro Uganda. However the study also established that if at least one or more elements of internal controls are weak or inexistent the whole process is jeopardized. It was confirmed that a weak internal control system provides opportunities for fraud, waste and negligence which negatively affect inventory management thus the profitability or success of an organization. At the end of the study, it was recommended that there is need to re-evaluate and review the existing policies at petro Uganda. It was also recommended that internal audits however frequent conducted should not be seen to replace the reporting element of internal control system.

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

Most organizations fail to realize their desired goals as planned due to poor or lack of 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 stations in Kampala. Petro Uganda Limited was used as an illustrative example.

Inventory takes many different forms depending on the nature of the business. For retail or wholesale business, the most important inventory is the merchandise on hand available for sale (Arens & Loebbecke, 1994). Inventory is generally a major item on the balance sheet and it is often the largest, making up the accounts included in the working capital. 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 the 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.

According to McClain, Thomas and Mazzola (1992), there are often discrepancies between stock at hand and stock on record and thus physical count is needed to set records right. Reasons for discrepancies vary from record keeping errors to theft or spoilage. Efforts to reduce these discrepancies are an important part of inventory control. Whittington and Pany (2001) concur that inventory often constitute the current asset of an enterprise and are very susceptible to major errors and fraud. This makes the inventory have a special significance attached to it thus

strict controls become inevitable. Fraud, spoilage and errors in record keeping will negatively affect inventory thus leading to poor profitability.

Oil companies are in the business of distribution of petroleum product. They hold huge volumes of inventory in form of petroleum products (Diesel, petrol 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. 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 very handy to protect and safeguard these current assets.

According to American Institute of Certified Public Accountants (1963), internal control is defined as a management tool used to provide reasonable assurance that management objectives are achieved. It is a process by which an organization governs its activities effectively and efficiently accomplishes its mission. Generally an internal control is consisting of methods and procedures used to safeguard assets and other resources and assure that they are used as directed by management. Establishing an effective internal control involves an assessment of the risks an organization faces from both internal and external sources. Managers are responsible for establishing an effective control environment in their organizations. This is part of their responsibility over the use of organization's resources. Indeed, the top management through their actions, policies and communications can result on a culture of their positive control. It is essential to understand that a strong internal control system is fundamental to control an organization, its purpose, operations and resources.

Meigs and Larson (1985) stated that a system of internal control consists of all measures employed by the organization for the purposes of safeguarding its resources against the waste, fraud and inefficiency, promoting accuracy and reliability in accounting and operating data,

encouraging and managing compliance with company policy, and judging the efficiency of operations in divisions of the business. This definition indicates that internal control is much more than a device for the prevention of fraud or the detection of accidental errors in the accounting process. From the above definitions, internal control involves actions taken within an organization to protect assets, protect against improper assets disbursement, protect against the incurrence of improper liabilities, assure the accuracy and dependability of all financial and operating information, judge operating efficiency, and measure adherence to the organizations established policies.

Stettler (1982) emphasized that the basic objectives of the broader term internal control may be summarized as: controlling operations through a system of authorizations and information feed back on the results achieved by those organizations; safeguarding assets from loss, theft, waste, inefficiency, and misappropriation; producing information that is comprehensive, reliable, timely and related to responsibility, so as to facilitate management control of operations.

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 the increased competition. The ensuing competition has maintained low fuel prices against rising cost price 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 2008. Prices have rallied from a dip below \$50 at the start of 2007 and by May 2008, have risen by around 40 percent from \$95.98 a barrel at the end of 2007. (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 other than minimizing on their costs if they are to remain in the business. Since inventory forms the bulk of their current assets, its proper control and management has a significant impact on the profitability. This can be achieved by employing a sound internal control system. Manasseh (1990) stated that internal control system plays a vital role in giving management a direction while taking major strategic decisions 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.

This research was aimed at finding out the importance of internal control system in the management of Inventory at petrol stations operated by Petro Uganda limited in Kampala district.

1.3 Purpose of the study

The purpose of this study was to find out the significance of internal control system on the management of Inventory at Petro Uganda in Kampala district.

1.4 Research objectives

This study was guided by the following objectives

1. To establish the nature and scope of internal control system employed in Petro Uganda Limited.
2. To examine the impact of internal control systems on successful management of inventory at Petro Uganda stations in Kampala.
3. To assess the effectiveness of existing internal control system at Petro Uganda Limited.

1.5 Research Questions

The study answered the following questions

1. What is the nature and scope of the elements of internal control system employed at Petro Uganda Limited?
2. How has internal control system impacted on the successful management of inventory at Petro Uganda stations in Kampala?
3. How effective is the existing internal control system at Petro Uganda Ltd?

1.6. Scope of the study

Petroleum products are distributed through petrol stations spread all over the country so as to reach all targeted consumers. However, over 40% of the sales volumes are from Kampala district. This research was limited to internal controls systems on petroleum products inventory at the petrol stations operated by Petro Uganda Limited in Kampala district. Petroleum products will be limited petrol, diesel and kerosene.

1.7 Significance of the study

1. 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 where they are supposed to be applied.
2. 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 in their systems.

3. The findings of the study will equip future investors with knowledge relevant to effective running of petrol stations in Uganda.
4. The study was on the assessment of the importance of internal control system. It is therefore a support to the existing data in the same area, and will be used in future by other researchers and other persons in need.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

To operate effectively and to 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 an integral part of the organizational processes administered by management to achieve its organizational objectives. An effective internal control 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 performance of oil companies through better management of inventory losses at petrol stations.

2.2 Conceptual Framework

This study employs conceptual framework to discover the link between variables under investigation. The conceptual framework is shaped from the theory of internal control systems adapted from Saleemi (1989).

The study will be composed of six Independent variables and two dependent variables. Successful inventory management at petrol stations will mainly depend on the level or effectiveness of internal control systems applied. According to Saleemi (1989), successful inventory management will depend on the following independent variables:

1. Policies & Directives
2. Segregation of duties
3. Responsibilities and Authorities
4. Procedures for collecting & Summarizing data
5. Monitoring transactions and internal audits.
6. Reporting system.

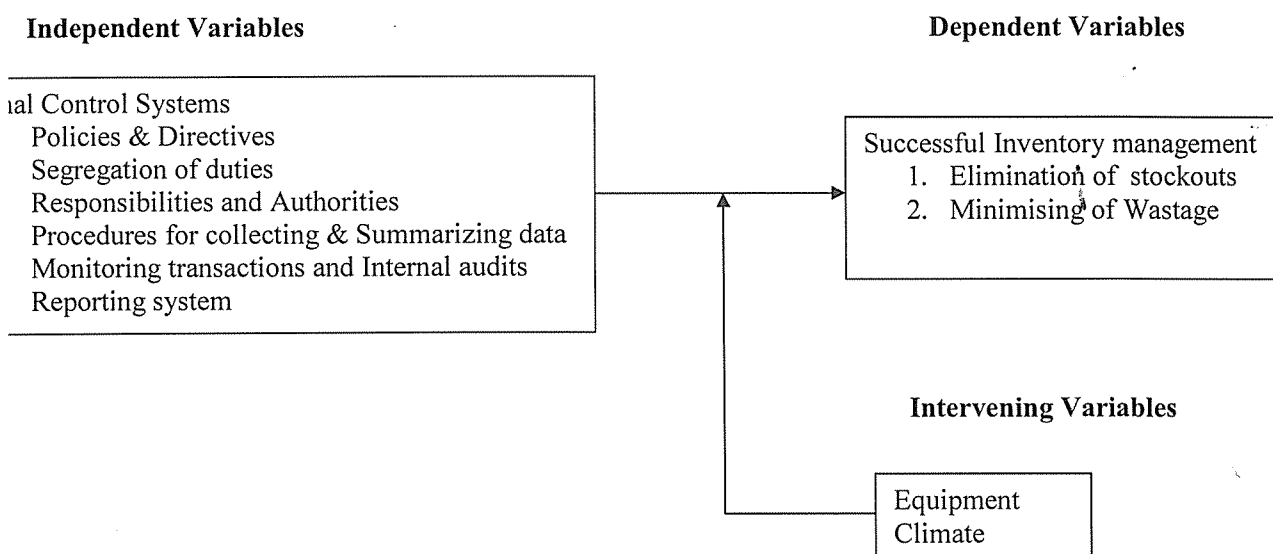


Figure2. 1: Conceptual Framework of the Study

Source: As amended from Saleemi (1989)

2.2 Internal Control System

According to American Institute of Certified Public Accountants (1963), management has the responsibility for devising, installing and supervising an adequate system of internal control. Any system regardless 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 carried out, changes in operating conditions have made the procedures cumbersome, absolute or inadequate, and effective corrective measures are taken promptly where breakdowns in a system appear.

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

1. Organizing, planning, and making the decision implicit in the development of the plan.
2. Authorizing action to implement plans that have been agreed upon.
3. Maintaining custody and control over usage of resources acquired in accordance with the plan.
4. 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.
5. Taking such corrective action as may be prompted by feedback on past action and results.

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

1. Establishment of standards of performance within the organization's overall strategic plan. Managers define goals for organizational departments in specific, operational terms that comprise a standard of performance against which to compare organizational activities.
2. Measurement of actual performance.
3. Comparison of performance to standards.
4. To take corrective action. Corrective action is follow up to change work activities in order to bring them back to 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 the plan of the 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 operation efficiency and encourage adherence to prescribed managerial policies. (American Institute of Certified Public Accountants, 1963).

2.2.1 Policies & Directives in Inventory management

Managers are responsible for establishing an effective control environment in their organizations. This is part of their responsibility over the use of organizational resources. Indeed, the top management's directives through their actions, policies and communications can result on a culture of positive control. It is essential to understand that a strong internal control system is fundamental to control an organization, its purpose, operations and resources. To operate effectively and to attain its goals and objectives, organizations should set and implement a well-designed internal control structure through policies & 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 Glezen (1991) stated that all financial statement accounts have financial assertions embodied in them. For these assertions to be valid 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 and 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 procedures will lead to poor internal control and likelihood of theft and wastage of inventory.

Since Inventory is an important entry into the balance sheet of any 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 the 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 characteristic. The high value of the product and ease to resell also makes petroleum products very susceptible to theft. In this regard, the management of petro Uganda ought to have a very strict and clear policy to safeguard its inventory.

2.2.2 Segregation of duties

Any internal control will only be strong if duties and responsibilities are segregated. The benefits of segregation are to reduce the risks of fraud, errors and manipulations in the business, to increase efficiency in the company's operations due to specialization and to 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 perpetrating and concealing errors or irregularities in the normal course of his or her duties. Segregation of duties is achieved by assigning different people the responsibilities of authorizing transactions, recording 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 product at the depot should not do the same at the stations. A staff that authorizes the loading at the depot should not be involved in the actual loading. Likewise at the station level, the cashier who handles the 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 tasks to accomplish during the handling of the petroleum products. An employee who is assigned to handle diesel product should not get involved with petrol. He or she will be held accountable for any loss on mismanagement of diesel.

2.2.3 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 transactions must be authorized and approved by the right/responsible officer. This is aimed at preventing frauds and safeguarding of the company's assets. It is also aimed at streamlining the flow of authority to avoid bureaucracy and conflicting authorized activities.

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

However, too much responsibility given to a few individuals may result in errors because of excessive workload. Also a concentrated authority might create a climate in which irregularities are more likely to occur and diminish the chances of such irregularities 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 product and form the bulk of Inventory for Petro Uganda. It is thus very important for any purchase or sale of the products 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 the depot manager. Lack of such controls as far as authorization by responsible persons is concerned will lead to inventory losses that are hard to trace.

2.2.4 Procedures for collecting & 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 transactions. The data for all the transactions prior to the purchase and after the payroll must also be documented as it forms part of the supporting documents. This data is then summarized and the ensuing reports are used for controls purposes.

According to Guy et al. (1999), an accounting system should have sufficient and appropriate methods to identify and record all valid transactions. This objective concerns the financial statement assertions of existence occurrence and completeness.

Operations of Petro Uganda involve continuous buying and selling of petroleum products. The units of sale vary depending on customers demand. There is thus need to keep track of the daily transactions for ease of reconciliation. Records of what has been purchased (addition of 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. Prices of the products keep on changing every now and then. The cash collected will depend on the price per liter. Records of the price changes and the amounts of stock at the time of the change will go a long way in control of fraud.

2.2.5 Monitoring transactions and internal audits

According to American Institute of Certified Public Accountants (1963), management has the responsibility for devising, installing and supervising an adequate system of internal control. Any system regardless 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 carried out, changes in operating conditions have made the procedures cumbersome, absolute or inadequate, and effective corrective measures are taken promptly where breakdowns 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 procedures.

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

According to Tandon (2002) internal control is exercised in the form of internal check and internal audit. Internal audit is a 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 enterprises 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 system, for improving the productivity and profitability of business practices 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 irregularities, the internal audit staff attempts to uncover wasteful and inefficient situations. To be effective, the internal staff must be independent of operating functions and should report to a high ranking executive or to the firm's board of directors.

Like any other organization, Petro Uganda will require to uncover wasteful and inefficient situations. This will be done by monitoring the situation on a 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.

2.2.6 Reporting system

One of the most important step in controlling organizational 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 that will prompt institution of corrective actions.

In the case of Petro Uganda, reports will have to be made to the management for the subsequent corrective action. For instance, a pump attendant will report a 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 measurement, or fraud. Accounting reports send to head office from the station will be analyzed to show the profitability and efficiency of the given station. Corrective action will be taken on non performing stations.

2.3 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 activity thereby enabling the business to be flexible in purchasing, operations and marketing. Ross, Westerfield and Jordan (2003) noted that a retailer's inventory could represent over 25% of the assets. This implies committing huge amounts of business resources in idle stocks thus successful inventory management will be mandatory for survival of the business.

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

Ordering costs include administrative costs in preparing and dispatching orders, communication with suppliers, placing orders into warehouses etc. These are costs incurred right from the time the orders of inventories are placed to when the order is actually received and placed in the 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 obsolete,
5. Lighting, security, insurance, heating and other charges needed to maintain the value of the inventory.

These costs increase as more inventories are maintained. For instance, Petro 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 cost storage. 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 leakages will be inevitable.

According to Ross, et al. (2003), inventory management involves acquiring the inventory, selling it and collecting the sales proceeds smoothly. Brealey, Myers, and Marcus (2004) sites the following as the features of inventory management.

1. Optimal inventory level involves trade-off between carrying costs and order costs.
2. Carrying costs involves storage costs and tied up capital cost.
3. Inventory level decrease when storage/interest costs increase and inventory level increase when restocking costs increase.
4. 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 restocking costs (or shortage or ordering costs).

2.3.1 Managing stock-outs

Stock-outs demonstrate a failure in inventory management and can be very expensive to a business due idle resources and loss of sales. In any business, stock outs should be avoided by all means. Riggs (1987), cite accelerated demand, extended lead time and a 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 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 assumptions:

1. The rate of usage (demand) of the product over the planning period is known with certainty and is constant.

2. The inventory is replenished periodically over the time. Such replenishment is instantaneous and there is no lead time between the ordering and receipt of inventories in the business.
3. Ordering costs per order are known with certainty and fixed.
4. Carrying costs per unit of inventory are known with certainty and are fixed.

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 and 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.

2.3.2 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 (Brealey 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 the carrying cost. Internal controls will ensure that these losses are minimized or eliminated all together.

2.3 Equipment and Climate.

Equipment used in handling petroleum products inventory will have an 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 environmental 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

3.1 Overview

This chapter explains in details the methods that have been used in this research. It comprises of the research design, the population of the study, sample and sampling procedures; data collection instruments; the procedure followed in conducting the study; data analysis and ethical considerations.

3.2. Research Design

The design of the study was case study. It focused on understanding and exploring the importance of internal control system in the management of inventory losses at petrol stations in Uganda. Petro Uganda Ltd through the station it operates in Kampala district was used as an illustrative example.

3.3. Research Location

The research was carried out in Kampala district which is the home of Uganda's capital Kampala city.

3.4. Research Population

In this research the population was composed of twelve stations of Petro Uganda Ltd stations in Kampala district as shown on Table 3.1. Petro station managers coordinate all the aspects of the petro station and act as the link between the station and the oil company. The researcher found them to be very appropriate as the respondents who could give the required

information about the station. All the population was utilized and thus sampling was not necessary.

Table 3.1 Research population

Location (Name of Station)	Number of station managers
Petro Banda	1
Petro Bombo Road	1
Petro Bwaise	1
Petro Kabalagala	1
Petro Kakindu	1
Petro Kampala Road	1
Petro Kibuye	1
Petro Mackay road	1
Petro Martin Road	1
Petro Mpererwe	1
Petro Old Portbel Road	1
Petro Wakaliga	1
Total	12

Source: Primary Data

3.6. Data Collection Instruments

To achieve objectives and answer research questions both primary and secondary data were used. To collect primary data the researcher used a structured questionnaire in order to answer research questions. As far as secondary data is concerned, the researcher consulted multiple-sources and documentary secondary data in order to gather literature review respective to research questions. Multiple sources include books, industry statistics and reports. Documentary secondary data includes written materials such as organizations' databases, journals and newspapers.

3.6.1 Primary Data

Structured Questionnaire

The researcher designed the questionnaire in such format where there were closed-ended questions. From these questions, respondents picked a response from list, category, or Likert-scale that best represented their opinion on the given statement.

The questionnaire contained three sections A, B and C. Section A sought to collect the demographical data of the respondents. Section B sought the opinion of the respondents on the various components of internal controls with respect to their existence and to what extend. Data on inventory management and effectiveness of internal controls was collected in Section C.

3.7 Procedures

Before starting research, the researcher requested for an introduction letter from the school of Post Graduate Studies and Research and presented it to Petro Uganda Ltd so as to get authorization to conduct the research in the organization. The country manager of Petro Uganda then issued a letter introducing the researcher to the station managers for the purpose of data collection. The researcher then distributed four questionnaires for pilot test to determine the clarity of questions, their effectiveness and the time it will take to complete the questionnaire. Once the questionnaires were returned to the researcher, the necessary amendments with harmony to the feedback were made.

The researcher then disseminated the amended questionnaires to four research experts together with the objectives of the study and research questions for the purpose of determining validity and reliability. On passing the validity and reliability tests, the questionnaire was then ready for dissemination.

The introduction letter from the Country Manager of Petro Uganda was then attached to the questionnaire before administering it to the respondents. On receiving back the questionnaires, they were scanned and cleaned to remove incomplete, inaccurate, inconsistent and irrelevant answers. Subsequently, data was entered into the SPSS, and then errors were checked and corrected to ensure the consistency of information. Data was analyzed, explored and presented using different diagrams and tables. The researcher then interpreted results, wrote the absolute report, which was approved by the University supervisor before submitting to the School of Post Graduate Studies and Research of Kampala International University.

3.8. Data Analysis

Data were analyzed using SPSS and Windows Excel. In order to analyze quantitatively the researcher coded qualitative data by giving it numerical codes for it to be analyzed statistically. Answers for closed questions were coded in ascending order. The first answer of every question was given code “1” the second answer was coded “2” and so on. Missing data were coded “999”. After the data was coded, it was entered into the computer statistical package (SPSS 11.0 for windows Students version). Individual labels were given to each variable while ensuring that labels replicate that exact words used in the data collection thereby reducing the number of opportunities for misinterpretation when analyzing data. The researcher then checked for possible errors that might have been committed by looking for illegitimate codes and illogical relationship.

The profile of the respondents was determined through frequency and percentage tables. Data respective to answer question one on the existence and scope of the various elements of internal control systems at petro Uganda stations in Kampala district was explored and presented using pie charts, tables, bar graphs and central tendencies. To test the relationship between the

existing variables Karl Pearson's coefficient of correlation was used. To determine the effects or impact of internal controls on Petro Uganda stations in Kampala, the data from the relevant variables was described and presented through pie charts, tables and bar graphs. Finally, data collected to determine the effectiveness of internal control system at Petro Uganda Stations in Kampala district was presented through frequency tables and pie charts.

3.8 Reliability and Validity.

A pilot test was conducted to ensure the clarity of questions, their effectiveness and the time required to complete the questionnaire, and to make sure that the questionnaire measures what it intends to measure. The researcher then assessed the content validity and reliability of the questionnaire to ensure that it measured what it is intended to measure.

The researcher used a panel of four individuals to evaluate whether each question in the questionnaire is fundamental and valuable. These people were given the questionnaire that was supposed to be distributed together with the objectives of the study, research questions and hypotheses. They were asked to assess the validity of questions in the questionnaire by ranking them from one to four against objectives of the study, research questions and hypotheses. Scale 1 represented 'not relevant', 2 stood for 'some what relevant', 3 stood for 'quite relevant' and 4 stood for 'very relevant'. Content Validity Index (CVI) was then generated with the help of SPSS (SPSS for windows Students version Release 11.0.0) computer software. SPSS gave the CVI as 0.79. This CVI was accepted because normally it should be greater than 0.5 ($CVI \geq 0.5$) and preferably greater than 0.7. The CVI of 0.8 showed that the questionnaire was worth to be administered.

To test the reliability of the questionnaire, internal consistency or Chronbach Alpha coefficient was used. This was generated using SPSS from the pilot study data. It is perceived

that for the instrument to be reliable, the coefficient has to be at least 0.7 and more. Chrombach alpha coefficient value generated was $\text{Alpha} = 0.7717$ which is acceptable. The questionnaire was thus deemed reliable for administration.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION.

4.1 Overview

This chapter presents, and analyses findings. The sample of the study consisted of twelve Petrol stations operated by Petro Uganda Ltd in Kampala district. Twelve questionnaires were distributed to twelve station managers of each of the sampled stations. Eleven of the twelve questionnaires were returned to the researcher. So, the subsequent is the analysis of data gathered from eleven respondents.

4.2 Demographic Information

This section presents demographic information of informants. Data was collected using questions one to five (section A) of the questionnaire.

4.2.1 Respondents' Age

It was observed that majority 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 4.1. It was also found that 54.5% Of the respondents were married were as the rest (45.5%) are single.

Table 4. 1: Age of respondent

	Frequency	Percent
Under 30 years	4	36.4
30 to 39 years	5	45.5
40 to 49 years	2	18.2
Total	11	100.0

Source: Field data

4.2.2 Educational Level

It was observed that 36.4% are bachelor's degree holders, 27.3 % are diploma holders, 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 4.2.

Table 4. 2: Education level

	Frequency	Percent (%)
Secondary level	1	9.1
A level	3	27.3
Diploma	3	27.3
Bachelors Degree	4	36.4
Total	11	100.0

Source: Field data

4.2.3 Duration at Petro Uganda

Table 4.3 represents the period in which, participants have worked for this particular company. 54.5% of the respondents have worked for Petro Uganda for between three to five years. 27.3% have worked for the company for over five years. The rest have worked for the company for less than three years.

However it was also observed that 45.5% of the respondents have worked in their current positions of station managers for between three to five years. 27.3% of the respondents have only worked as station managers for less than one year whereas 18.2% have worked in their current positions for between one and three years. Only 9.1% have worked for the company in their present position for over 5 years. This information is displayed on table 4.4

Table 4. 3: Duration worked for PETRO Uganda by the respondents

	Frequency	Percent
Under One Year	1	9.1
One to Three years	1	9.1
Three to Five years	6	54.5
More than Five years	3	27.3
Total	11	100.0

Source: Field data

Table 4. 4: Duration worked in Current Position

	Frequency	Percent
Under One Year	3	27.3
One to Three years	2	18.2
Three to Five years	5	45.5
More than Five years	1	9.1
Total	11	100.0

Source: Field data

4.3 Research Question One: What is the nature and scope of internal control system employed at Petro Uganda Limited?

This section presents data gathered on the existence of the elements of internal control systems. It also represents data on the extent to which these elements are applied at Petro Uganda Ltd. To answer this question, the researcher used questions 6, 12, 19, 24, 28 and 33 on the questionnaire for the nature of internal control systems and questions 7, 8, 13, 25, 30 and 35 for the scope.

4.3.1 The nature of internal control system employed at Petro Uganda stations in Kampala district

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

Table 4. 5: Existence of Internal control system at Petro 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 2 which represent the statement ‘ Agree ‘

Source: Field Data

4.3.1.1.Existence of Policies and Procedures

A strong internal control system must be guided by policies and procedures. It was observed that 90.9% of the respondents agreed that policies and procedures exist at Petro Uganda with only 9.1% disagreeing as shown on figure 4.2

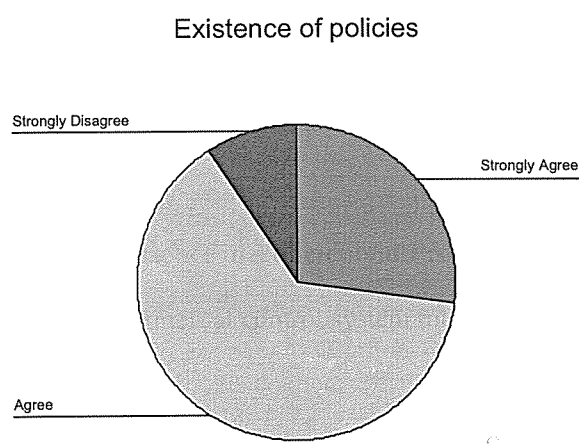


Figure 4. 2 : Existence of Policies & procedures at Petro Uganda stations in Kampala District.

Source: Field Data

4.3.1.2.Segregation of Duties

All the respondents agreed that there is segregation of duties at the Petro Uganda stations in Kampala with 9.1% Strongly agreeing as shown on Figure 4.3

Categorisation of duties into Different levels

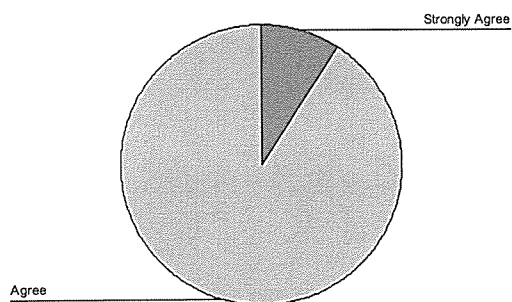


Figure 4. 3 : Segregation of duties at Petro Uganda stations in Kampala district.

Source: Field Data

4.3.1.3 Authorization of transactions by responsible staff.

Figure 4.4 shows that all the respondents agreed that there is authorization of transactions by responsible staff at the Petro Uganda stations in Kampala with 9.1% Strongly agreeing.

Authorisation by responsible staff

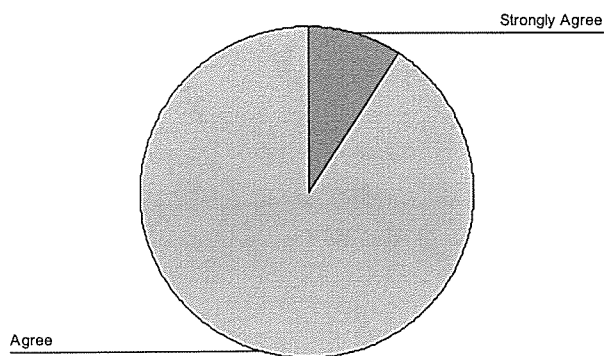


Figure 4. 4: Authorization of transactions by responsible staff at Petro Uganda stations in Kampala District.

Source: Field Data

4.3.1.4 Collecting and summarizing of data

Data on transactions at Petro Uganda stations is collected and summarized at Petro Uganda as observed on figure 4.5. 81.8% of the respondents agreed on this fact with 19.2 % not being sure of the fact.

Collecting & summarising of data

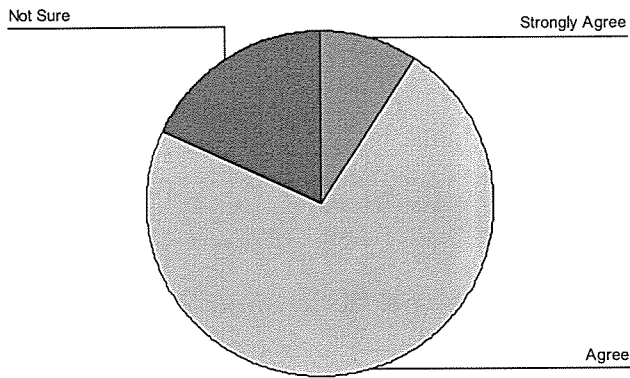


Figure 4. 5 : Collecting and summarizing of data on transactions at Petro Uganda stations in Kampala district.

Source: Field Data

4.3.1.5 Contacting of Internal Audits

Figure 4.6 shows that 100% of the respondents agreed that Internal Audits are regularly carried out at Petro Uganda stations is collected and summarized.

Contacting of regular internal Audits 1

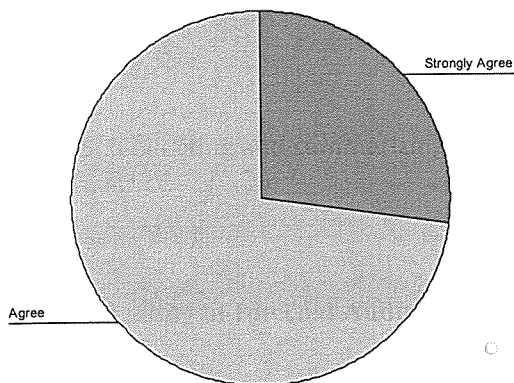


Figure 4. 6: Contacting of Internal Audits at Petro Uganda stations in Kampala district.

Source: Field Data

4.3.1.6 Reporting system

Figure 4.7 shows that 54.5% of the respondents agreed that there is a reporting system at Petro Uganda stations. 36.4% disagreed with this fact whereas 9.1 % were not sure whether a reporting system existed or not.

Existence of reporting system 1

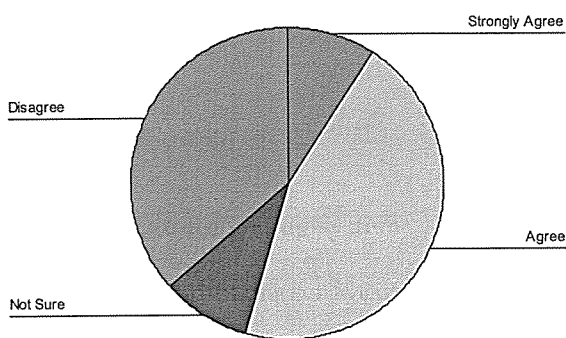


Figure 4.7 : Existence of a Reporting system at Petro Uganda stations in Kampala district

Source: Field Data

4.3.2 The Scope of internal control system employed at Petro Uganda stations in Kampala district

Figure 4.8 presents the data collected on the scope of internal control systems at petro Uganda stations in Kampala district. 100% of the respondents agreed that policies and procedures were communicated to the employees. They also agreed that every employee is assigned specific duties at the station. All the respondents further agreed that there was monitoring of transactions at the stations. However, 54.5% of the respondents disagreed that there is feedback on the reports they sent after the analysis. 45.5% confirmed that there was feedback after the analysis of reports. It was also observed that 81.8% of the respondents

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.

Contacting 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 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.

Table4. 6: Correlation of the variables (nature of internal controls)

Correlations							
		Existence of policies	Categorisation of duties into Different levels	Authorisation by responsible staff	Collecting & summarising of data	Contacting of regular internal Audits 1	Existence of reporting system 1
Existence of policies	Pearson Correlation	.1	.303	.303	.677*	.195	-.083
	Sig. (2-tailed)	.	.365	.365	.022	.565	.809
	N	11	11	11	11	11	11
Categorisation of duties into Different levels	Pearson Correlation	.303	1	-.100	.056	-.194	-.382
	Sig. (2-tailed)	.365	.	.770	.870	.568	.246
	N	11	11	11	11	11	11
Authorisation by responsible staff	Pearson Correlation	.303	-.100	1	.671*	.516	-.382
	Sig. (2-tailed)	.365	.770	.	.024	.104	.246
	N	11	11	11	11	11	11
Collecting & summarising of data	Pearson Correlation	.677*	.056	.671*	1	.108	.046
	Sig. (2-tailed)	.022	.870	.024	.	.751	.894
	N	11	11	11	11	11	11
Contacting of regular internal Audits 1	Pearson Correlation	.195	-.194	.516	.108	1	-.741**
	Sig. (2-tailed)	.565	.568	.104	.751	.	.009
	N	11	11	11	11	11	11
Existence of reporting system 1	Pearson Correlation	-.083	-.382	-.382	.046	-.741**	1
	Sig. (2-tailed)	.809	.246	.246	.894	.009	.
	N	11	11	11	11	11	11

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

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

4.4 Research Question Two: How has internal control system impacted on the successful management of inventory at Petro Uganda stations in Kampala?

This part of the chapter presents and analyses data collected to determine the effects or impact of internal controls applied at Petro Uganda stations. These effects are manifested through the level of inventory wastage and stock-outs. The data was collected from respondents using questions 11, 16, 20, 23, 27, 31 and 37 of the questionnaire. Figure 4.9 presents the summary of the results.

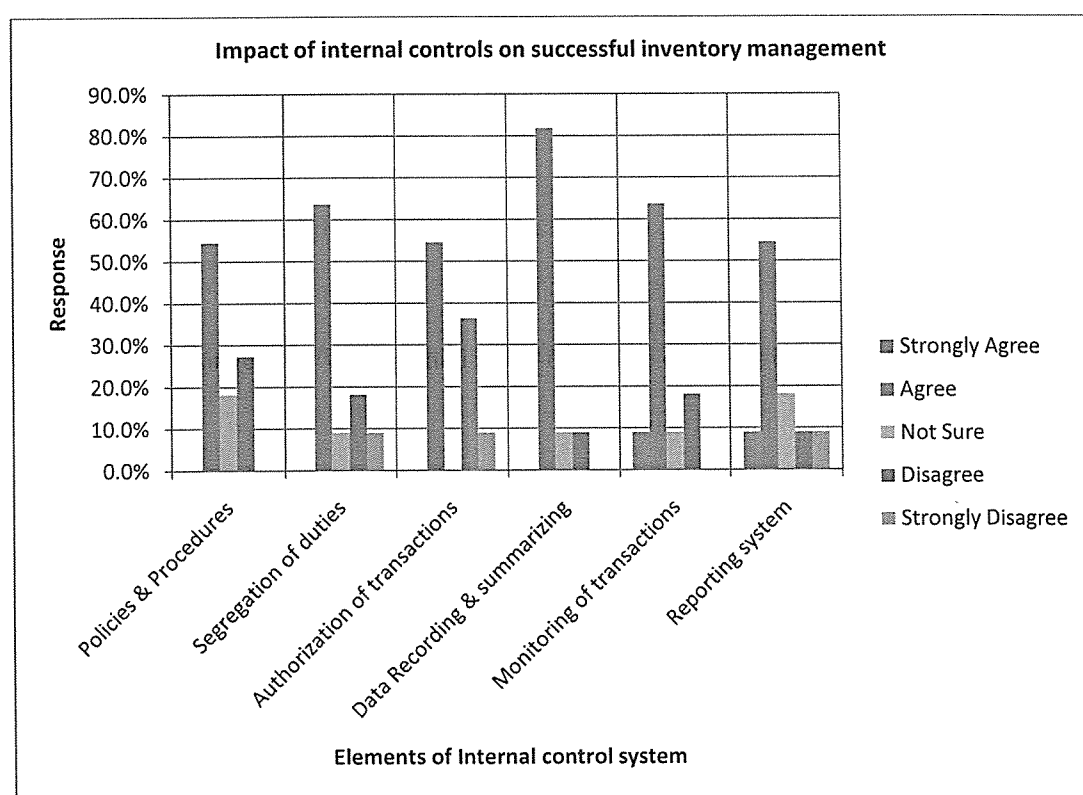


Figure 4. 9: Impact of internal control systems on successful inventory management at Petro Uganda stations in Kampala district.

Source: Field Data

4.4.1 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, 54.5% Agreed, 18.2% were not sure whereas 27.3% disagreed. This is summarized in Table 4.7

Table 4. 7: Effect of Policies & Procedures on Inventory losses

	Frequency	Percent
Agree	6	54.5
Not Sure	2	18.2
Disagree	3	27.3
Total	11	100.0

Source: Field Data

4.4.2 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: Effects of Segregation on Inventory control

	Frequency	Percent
Agree	7	63.6
Not Sure	1	9.1
Disagree	2	18.2
Strongly Disagree	1	9.1
Total	11	100.0

Source: Field Data

4.4.3 Effect 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 an 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	6	54.5
Disagree	4	36.4
Strongly Disagree	1	9.1
Total	11	100.0

Source: Field Data

4.4.4 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	9	81.8
Not Sure	1	9.1
Disagree	1	9.1
Total	11	100.0

Source: Field Data

4.4.5 Effect of monitoring of transactions on successful Inventory management

Figure 4.10 shows that 72.7% of the respondents agreed that monitoring of transactions led to successful management of inventory whereas 18.2% disagreed. 9.1% were not sure.



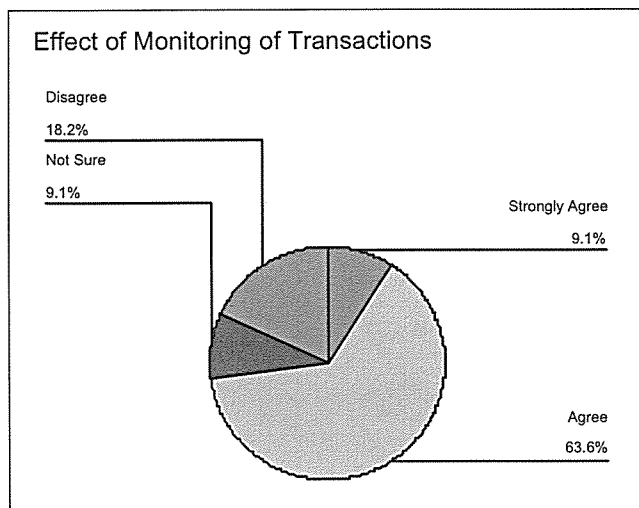


Figure 4. 10: Effects of monitoring of transactions on successful inventory management

Source: Field Data

4.4.6 Effect of reporting system on successful Inventory management

Figure 4.12 shows that 63.6% of the respondents agreed that the reporting system had an impact on successful management of inventory whereas 18.2% disagreed and another 18.2% were not sure.

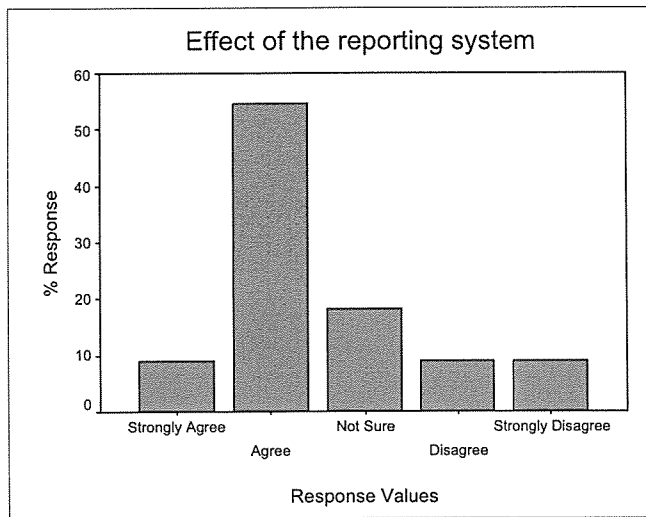


Figure 4. 11: Impact of reporting system on successful inventory management

Source: Field Data

4.5 Research Question Three: How effective is the existing internal control system at Petro Uganda Ltd?

This part of the chapter presents and analyses data collected to determine the effectiveness of internal control system at Petro Uganda Stations in Kampala district. Questions 39, 40, 41, and 42 on the questionnaire are used to answer this question.

4.5.1: Level of stock outs at Petro 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 once 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	3	27.3
Not Sure	1	9.1
Disagree	4	36.4
Strongly Disagree	3	27.3
Total	11	100.0

Source: Field Data

4.5.2: Level of inventory wastage at Petro Uganda stations

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

Table 4. 12: Losses (wastage) is within allowable limits (industrial norm)

	Frequency	Percent
Agree	7	63.6
Not Sure	1	9.1
Disagree	3	27.3
Total	11	100.0

Source: Field Data

4.5.3: Optimum wastage and stock-out

As presented on Table 4.13, 27.3% of the respondents agreed that inventory wastage and stock out was at the minimum and could not be improved further. However, 54.5% 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	3	27.3
Not Sure	2	18.2
Disagree	6	54.5
Total	11	100.0

Source: Field Data

4.5.3: Frequency of stock-outs

Figure 4.12 show that 72.7% of the stations never had stock outs whereas 27.3% of the stations had stock-outs at least once per month.

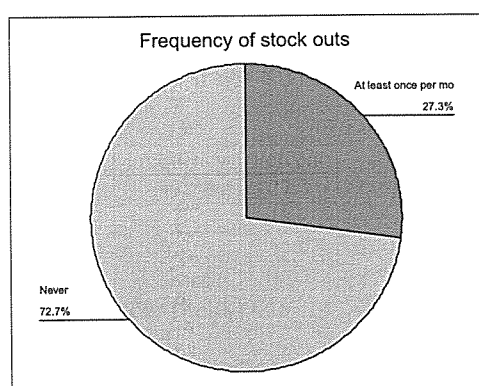


Figure 4. 12 : Frequency of Stock outs at Petro Uganda stations.

Source: Field Data

4.5.3: Sources of inventory wastage

Figure 4.13 presents the various sources of inventory wastage. 72.7% of the stations got their inventory wastage through leakages and spillages, 18.2% through theft and the rest through poor documentation.

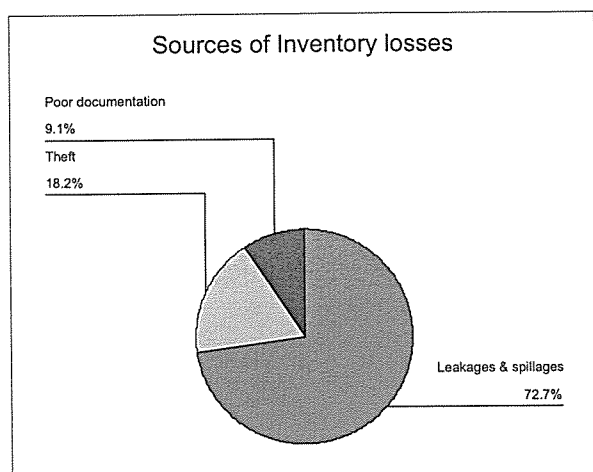


Figure 4. 13 : Sources of inventory losses.

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 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 petro 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 in line with Manasseh (1990) view that segregation of duties is achieved by assigning different people the responsibilities of authorizing transactions, recording transactions, and maintaining 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 sufficient and appropriate methods to identify and record all valid transactions.

Once again, it is found out that all the stations under 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 not 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 Uganda stations in Kampala district. 100% of the 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 Institute of Certified Public Accountants (1963) must be under continuing supervision to determine whether prescribed policies are being interpreted properly and are being carried out, changes in operating conditions have made the procedures 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 controlling organizational 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 that will prompt institution of corrective actions. However, 54.5% of the respondents disagree that there is feedback on the reports they sent after the analysis. 45.5% confirm that there is feedback after the analysis of reports.

It is also observed that 81.8% of the respondents agreed that it was easy to understand the policies and procedures 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 Modal response by the participants is code 2 which represent the statement 'Agree '. This shows internal control system exists at Petro 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 have a positive Pearson's correlation coefficient(r) 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. 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.

From Table 4.6, 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 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 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 their staff. 18.2% of the stations do not have their inventory management affected by the 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 of inventory whereas only 9.1% disagree. 9.1% are not sure. Successful inventory management at 72.7% of the 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 the stations whereas 18.2% disagree and another 18.2% are not sure.

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

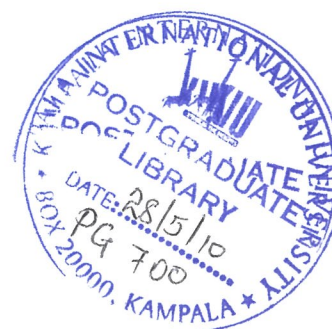
The various elements of internal control system have to be properly balanced for them to be effective in the management of inventory. To establish how effective the system is the indicators of a good inventory management are used. These are the presence of stock outs and losses (wastage). Presences of 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 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 station 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 in terms of the level of wastage.

The study also established that the 54.5% of the stations are not optimizing on the stock outs and wastage and an improvement is possible. 27.3% of the station are operating optimally and their level of stock outs and wastage is minimum and could no 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 Uganda. However, the impact of the internal controls depends on the level of implementation of the system. 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 the 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 managers 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. However, it should be noted that the ineffectiveness could be caused by one of the elements of internal control system and not necessarily all of them.

5.3 Conclusion

A weak internal control system provides the opportunities for fraud, waste, negligence, employee's incompetence. The system of internal control reduces but not eliminates the possibility of poor judgments in decision making, human errors, and 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.

5.4 Recommendations

The main goal for an organization like Petro 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 organizational goals.

Though policies exist at Petro 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 on 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.

5.5 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.

5.6 Chapter Review

Chapter five discussed findings presented in chapter four in relation to the literature review discussed in chapter two from different scholars, it summarizes the findings, gives conclusion and recommendation. The chapter also proposes the area for further researchers.

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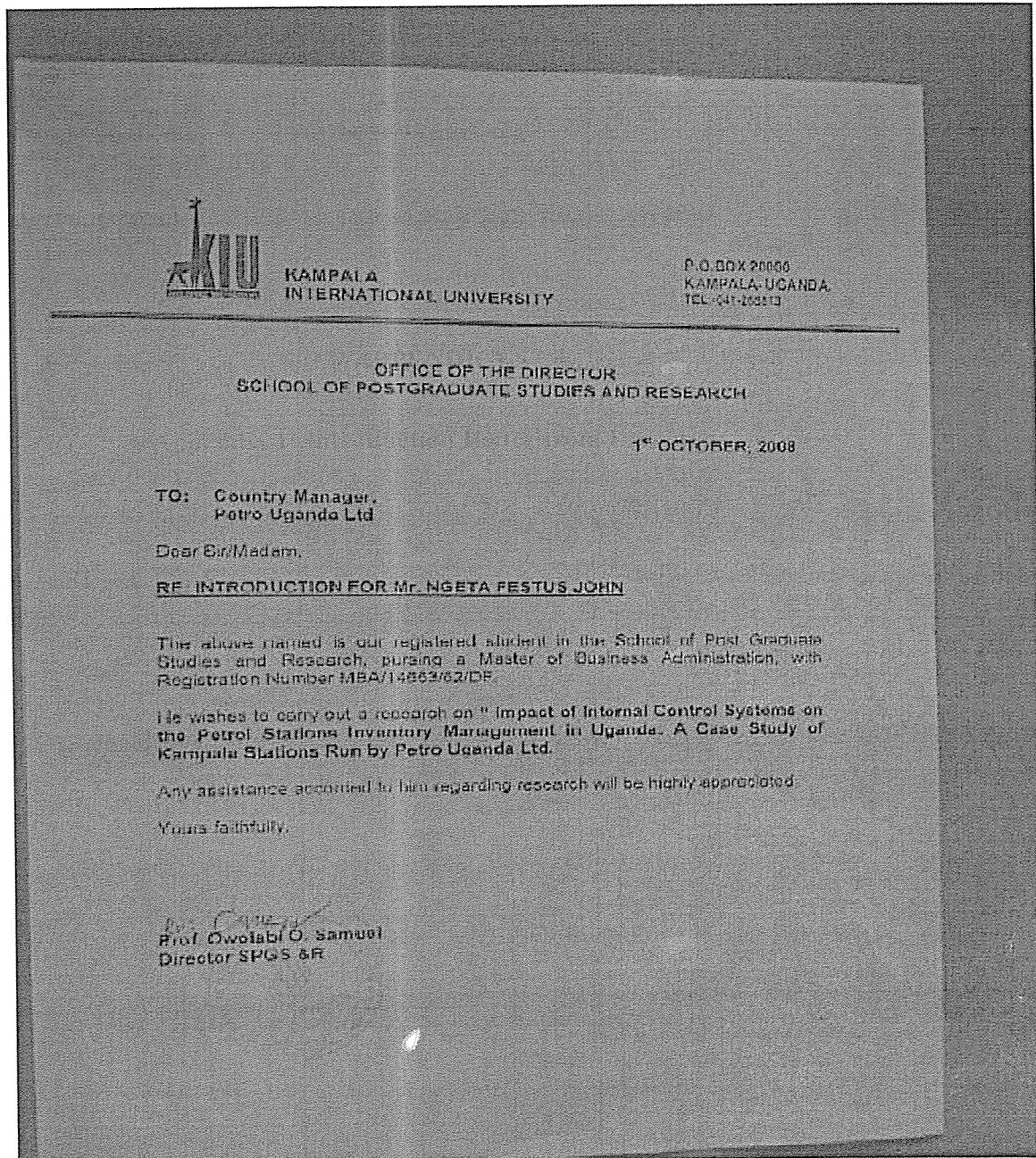
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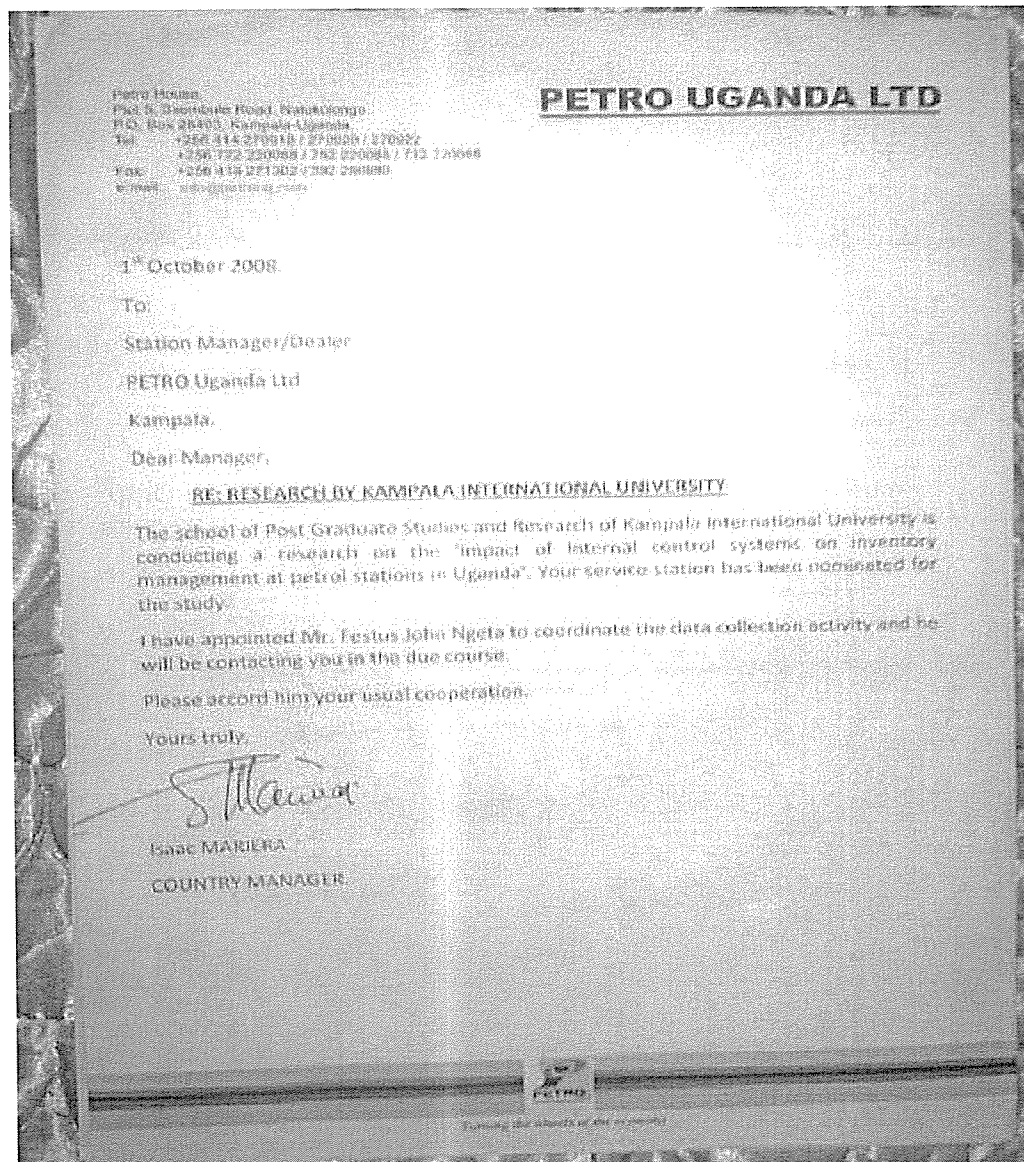
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APPENDICES

Appendix 1: Introduction Letter from University



Appendix 2: Letter from Country Manager of Petro Uganda



Appendix 3: Structured Questionnaire

SECTION A: DEMOGRAPHICAL INFORMATION

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

1. Age

☐ Under 30 years old

☐ 30 to 39 years old

☐ 40 to 49 years old

☐ Above 50 years old

2. Martial status:

☐ Single

☐ Married

☐ Divorced

☐ Widower

3. Educational level

☐ Secondary-Level

☐ A- Level

☐ Diploma

☐ Bachelor degree

☐ Masters Degree

☐ Other (Specify)

4. Duration worked in Petro Uganda

☐ Under one year

☐ One to three years

☐ Three to five years

☐ More than Five years

5. Duration worked in your current position:

☐ Under one year

☐ One to three years

☐ Three to five years

☐ More than Five years

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 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 the concerned employees.					
10	The guidelines and work procedures are relevant to the work we do					
11	The policies help in the prevention of fuel losses due to fraud and spillage					
12	Duties at station are categorised into different levels					
13	Every Employee of station is assigned specific duties depending on job description					
14	An employee other than the one dispensing the product balances and reconciles the daily sales.					
15	Employees are trained for the work they do					
16	Segregation of duties helps in minimising cases of fraud and fuel losses					
17	Several employees find themselves doing a job that was supposed to be done by either of them					
18	Employees are more efficient because they do specific jobs.					
19	Transactions are authorized by staff who are given such responsibilities					
20	Authorisation by responsible persons has reduced cases of fraud and fuel losses					
21	Fuel losses have reduced because sales/purchases are only done after authorisation by the relevant officers					
22	It is only the Country Manager who approves purchase of fuel at Petro Uganda					
23	Company assets at Petro Uganda are easily lost and not recovered					

		SA	A	NS	D	SD
24	Transactions are recorded at all levels of operation at Petro Uganda					
25	There are specific pre-printed stationery for the various operations at Petro Uganda					
26	The records kept at Petro Uganda are adequate to safeguard against loss of Petroleum products.					
27	Information recorded at various points of operation at Petro Uganda is used to detect and control fraud and fuel losses.					
28	Petro Uganda contacts an internal audit every month.					
29	Internal Audit in Petro Uganda is only conducted when there is a suspected loss of fuel or cash.					
30	Petro Uganda has a daily stocks tracking procedure					
31	The daily stock tracking reduces fuel losses due to fraud and negligence(spillages)					
32	After an internal Audit, suggestions for increasing profitability are suggested					
33	Stations send reports to Petro Uganda Head Office every day.					
34	Stations send reports to Petro Uganda Head Office every week.					
35	Feedback on the send reports is send back to the stations					
36	Once the reports are analysed, the findings are used for improvement purposes					
37	The reports help in preventing future fuel losses and stock outs.					
38	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
39	The station experiences stock outs at least once every month					
39	The station replenishes fuel only after a stock out.					
40	Product losses at the station are within the allowable industry limits					
41	Product losses and stock-out are minimum and cannot be reduced beyond the current state					

42. We have stock outs

- ☐ At least once per week
- ☐ At least once per Month
- ☐ Before every restocking
- ☐ Never

43. Most of our un-accounted for (lost) stocks are due to

- ☐ Leakages & spillages
- ☐ Theft
- ☐ Evaporation
- ☐ Poor documentation



Thank You for your Precious time and contribution.

Researcher,
For Kampala International University.

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