EFFECTIVENESS OF INTERNAL CONTROL SYSTEMS IN SAFEGUARDING INVENTORY

A Case Study of Rift Valley Institute of Science and Technology

STEPHEN K CHERUIYOT

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DECLARATION

This research project report is my original work and has not been presented for a degree in any other university or academic institution for the purposes of examination or academic award.

STEPHEN K CHERUIYOT GMB/NE/0659/05/11

Signature..... Date.....

APPROVAL

This research report has been submitted with our approval as University Supervisors.

DR. NYANGAU ANDREW
SUPERVISOR: KABARAK UNIVERSITY

Signature..... Date.....

DR. S. KIPROP
SUPERVISOR: KABARAK UNIVERSITY

Signature..... Date.....

DR. B. KOIMA
SUPERVISOR: KABARAK UNIVERSITY

Signature..... Date.....

DEDICATION

To my wife Emily, my children: mark, mercy mike and Merriam for their encouragement. To the principal of Rift Valley Institute of Science and Technology (RVIST) Mr.Koimet who instilled a sense of determination and quest for more knowledge

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ABSTRACT

Internal control systems play a very critical role in the attainment of organizations goals and objectives. Introduction and implementation of such internal controls in all areas of an organization may only be beneficial if it attains the required level of performance or effectiveness. Inventories still remain the biggest cost element in most organizations and especially in learning institutions where they influence the success of their programs. This study sought to assess the extent to which the internal procurement control processes are effective; establish the effectiveness of internal stores control processes; determine the effectiveness of the internal stock distribution processes and then determine the level to which the managerial internal control policies influence the effectiveness of safeguarding inventories at Rift Valley Institute of Science and Technology (RVIST). A total of 351 employees from all the nine departments in the institute who are involved in the procurement, storage, distribution and usage of inventory were taken for the study's target population. The sample size of 187 employees was selected using stratified sampling method as study's respondents. Structured questionnaires were used as tools for collecting data and were distributed to the respondents with the approval of the relevant authorities. All questionnaires were administered personally by the researcher and the respondents were given one week to fill them. Spearman rank order correlation and regression analysis were used to establish the relationship between the different components of the internal control systems and the effectiveness in safeguarding inventories. From the findings, internal procurement control, stores controls, stock distribution control and management control policies were effective in safeguarding inventories at the institute. The study recommends for due consideration of internal control systems as an integral part of safeguarding and securing inventories

Key Words: Internal Control Systems and Safeguarding Inventory

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ABBREVIATIONS AND ACRONYMS

AGME	Agriculture and mechanics department
BCE	Building and civil engineering department
BSD	Business studies department
CCTV	Closed circuit television
COSO	Committee of sponsoring Organizations
EOQ	Economic Order Quantities
GOK	Government of Kenya
HOD	Head of department
HOS	Head of section
HRM	Human resource management
ICS	Internal Control Systems
ICT	Information Communication Technology
ISO	International organization for standards
JIT	Just-In-Time
MCP	Management control policy
PICS	Procurement internal control system
QMS	Quality Management Systems
RVIST	Rift Valley Institute of science and Technology
SCS	Stores control systems
SDCS	Stores distribution control systems
SME	Small and Micro Enterprises

OPERATIONAL DEFINITION OF TERMS

Internal Control Systems: A system implemented to provide guidance and regulate the activities or output of a process activity or machine. In this study the systems will encompass all procedures and activities put in place to monitor and control stock procurement, storage and distributions. (COSO, 2010)

Effectiveness: This is the degree to which an objective is achieved and the extent to which the desired results are attained. This will be taken to be the degree to which the organization has been able to achieve the desired levels and quality of its inventory control system objectives. (Duker, 2006)

Safeguarding Inventory: Safeguarding Inventory is the act of ensuring that the procured inventories are safely stored and their quality preserved. (Samchi-Levi et al, 2009)

Securing Inventory: This is a collection of all activities carried out to ensure that the required inventories are available to the end user as and when required. (Samchi-Levi et al, 2009)

Closed circuit television: CCTV as per the Cambridge dictionary is the use of video cameras to transmit a signal to a specific place on a limited set of monitors. In this study it is an inventory control measure which is used to monitor pilferage of stock.

CHAPTER ONE

INTRODUCTION

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

1.1 Background of the Study

According to the University of California (2012), internal controls are defined as a process or systems designed to provide reasonable assurance required to achieve objectives which include effectiveness and efficiency of operations, reliability of financial reporting and compliance with applicable laws and regulations. The Institute of Internal Auditors (2011) looks at internal controls as "any action taken by management, the board, and other parties to enhance risk management and increase the likelihood that established objectives and goals will be achieved". Although the concept of internal control is said to trace its history back to the beginning of the 20th century when audit on financial statements came into being, it has consistently evolved to what it is presently due to continuous change in the business environment (Heier et al (2005). The expansion of the world economy and the scale of enterprises growth after the turn of the century brought about major challenged in management leading to adoption of control systems that encompassed the entire enterprise. During this period "detailed audit" was undertaken on all the target items as an audit of financial statements, but a rapid growth in corporate scale made it virtually impossible to continue the practice.

Consequently, this further evolved into a "sampling test" where samples taken from the targets, assuming presence of own System of checks and balances that would reveal potential frauds and errors in operations. This internal check system effectively marked the birth of the concept of internal control. In the wake of the Great Depression in 1929, several countries enacted laws that would entrench internal control systems, most of which emphasized on auditors inspecting financial statements to see if they comply with accounting principles. In 1949, the American Institute of Certified Public Accountants published a special report on Internal Control defining it as safeguarding of assets, the "ensuring of the accuracy and

reliability of accounting data", the "promotion of operational efficiency" and the "adherence to prescribed management policies", which provided a foundation for building the internal control perspective into executive management. This definition, however, met criticisms for intending the scope of responsibility of auditors was too far, leading to arguments in favor of a narrower interpretation of the concept of internal control (Abeam, 2009).

In response to downfalls of financial institutions that occurred in the 1980s, American Institute of Certified Public Accountants (AICPA) established the Tread way which was given a mandate of creating and entrenching importance of internal controls and necessity of detailed examination and assessment criteria. This was followed by a publication in 1992 of the COSO framework by the Committee of Sponsoring Organizations of Tread way Commission with three objectives of internal controls; the "effectiveness and efficiency of business", "the reliability of financial report" and the "compliance with applicable laws" and further providing five components; control environment", "risk assessment", "control activities", "information and communication" and "monitoring". COSO framework contributed to a broadened concept of internal control as it built in the perspective of management and other executives of corporations as well as that of auditors. The COSO framework continues to provide a source of reference for most internal control systems up to today across the world (COSO, 2012)

In South Africa, a survey conducted by Department of Trade of South Africa (2007), found out that close to 42% of SME owners acknowledged that there was need for both assessment and improvement of internal control measures if they are to achieve their intended growth. Further, 75% of same SME owners called for a drastic improvement of internal control measures that will allow them to understand and apply them effectively. These statistics, in essence, reveals that SME owners are not only aware of the need to constantly review but also improve internal controls as a measure.

Ondiek & Odera, (2012) in their study on assessment of materials management in Kenyan manufacturing firms found out that Sixty four Percent (64%) of the firms

were applying materials management concept, though most were doing so unknowingly bringing to question whether most organization consider internal control systems as drivers of their performance or not. When evaluating the utilization of internal controls in SME in South Africa, Jongh et al (2012) reached a conclusion that SMEs do in fact make use of internal control processes, however the processes used are merely fundamental, routine in nature and basic management necessity.

1.1.1. A Profile of Rift Valley Institute of Science and Technology

Rift Valley Institute of Science and Technology (RVIST) was established in 1979 as an institution to advance education and development in the region. It has grown significantly over the last decade to be one of the key institutions within Rift Valley. Its expansion has seen the number of programs increased significantly and by the end of 2012 it has a total workforce of 351 of whom 203 are academic staff and 148 non-teaching staff. The employees estimated to be directly or indirectly involved in procurement, storage and distribution of inventories are 351.

To enhance the quality of its service delivery and to enhance management of its resources, the institution, initiated a process based management system and constituted an ISO team which developed systems to control operations (Strategic planning committee report, (2009). The institute since June 2010 has been in the process of implementing quality management systems based on International Standards Organization (ISO) 9001:2008 which was expected to be audited for certification on January, 2013. As a means to implementing the quality management system, all institutes' operations and process were redesigned and implementation of internal control systems strengthened. One of the core areas affected by adoption of the quality management systems was the supply chain processes entrusted with the responsibility of facilitating stock procurement, storage and distribution. Major changes were introduced during the initial stages of the system in 2010.

The objective of adopting new internal controls are to reduce on losses through procurement malpractice that were taking a toll on institutes resources and to improve significantly the ability of the department to deliver timely services in support of the institutes core mandate. Taking into account management representative's audit

notification circular to auditors and auditees, that numerous benefits of implementing ISO 9001:2008 (QMS) lies on the effectiveness of its integration of the existing organizational structures, it is critical that such systems should be kept under a constant watch E, Ruto, (2013)

1.2 Statement of the Problem

Internal control systems are a fundamental requirement that every organization must incorporate into its management structures. However it is how well they are designed and implemented that will determine their effectiveness in the attainment of goals. Inventory is a significant constituent of the total cost of production of any enterprise and hence calls for effective management and control in order to avoid losses. Given that inventory is a major cost element, it is as key subject of most internal control systems. The institute having misappropriated Ksh 1.2 Million in 2008-2009 financial years alone, most of which were attributed to poor procurement procedure and theft puts into focus the need for immediate interventions (Audit report, 2009). Failure to follow requirements of internal controls as envisaged in implementation of ISO 9001:2008 quality management system (QMS) has since 2010 continuously exposed the institute to higher levels of risk across the entire stock procurement and distribution systems (Annual General Meeting Report, Minute 3/04/2009).Clarity with regard to how internal control systems secure inventory is still unknown and if it is left to continue, it is likely to lead to higher levels of uncertainty, losses and lack of better inventory management systems being developed and implemented. This study therefore sought to establish the effectiveness of internal control systems on inventory control at RVIST.

1.3 Objectives of the Study

1.3.1 General Objective of the Study

The general objective of the study was to establish the effectiveness of internal control systems used by RVIST in safeguarding inventory.

1.3.2 Specific Objectives of the Study

The specific objectives were:

i. To assess the extent to which the internal procurement control systems are effective in safeguarding inventories at RVIST.
ii. To establish the effectiveness of internal stores control systems in safeguarding inventories at RVIST
iii. To determine the level to which the internal stock distribution control systems are effective in safeguarding inventories at RVIST
iv. To determine the level to which the managerial internal control policies influence the effectiveness of safeguarding inventories at RVIST

1.4 Research Hypotheses of the Study

The following hypotheses were used to guide the study:

$H0_1$: Internal procurement control systems have no significant effect in safeguarding inventories at RVIST

$H0_2$: Internal stores control systems have no significant effect in safeguarding inventories at RVIST

$H0_3$: Internal stock distribution control systems have no significant effect in safeguarding inventories at RVIST

$H0_4$: Internal managerial control policies have no significant effect in safeguarding inventories at RVIST

1.5 Significance of the Study

The study would be of benefit to RVIST as it would provide an analysis of the level to which their efforts in improving their procurement systems had been implemented from its current position. All stakeholders would seek to use the results of this study in coming up with policies that would enable further improvement of their internal inventory control systems. The findings of this study would also create awareness to the ISO 9001:2008 implementation team as it would highlight their performance in the implementation process as well as provide a valuable input into their continual

improvement process. Generally, researchers would find the study useful as it gives highlights on areas for further research and also contribute to new knowledge.

1.6 Scope of the Study

The study confined itself to Rift Valley Institute of Technology as a case for the study and was limited to internal processes that are core to the procurement, storage and internal distribution of stock items within the institution. The study was carried out between the months of April and May 2013.

1.7 Limitations and Delimitation of the Study

The study findings were limited to RVIST and the findings would not be generalized to cover other institutions of higher learning or of similar standings due to the uniqueness of the ISO 9001:2008 implementation strategies that varies from one entity to the other. Not all respondents involved in the procurement and distribution would be free or available for an intensive data collection process. The researcher intentionally used questionnaires designed to allow the respondents fill at their own time within the data collection period. Some of the respondents misrepresented the research process to be a performance evaluation and the researcher was available himself for clarification. During data collection, the researcher accompanied every questionnaire with an official letter to clarify on the objectives of the research as well giving an assurance of it being for academic purposes only.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter covers the empirical and theoretical literature review as well as the conceptual framework.

2.2 Theoretical Literature Review

According to the Institute of Internal Auditors (2011) internal controls are defined as processes designed to provide reasonable assurance regarding the achievement of objectives. It is also defined as "any action taken by management, the board, and other parties to enhance risk management and increase the likelihood that established objectives and goals will be achieved".

The internal control concept like other modern management frameworks emerged from classical theories that provide a foundation for modern thinking. This study relied on two key theories: systems theory and management control theory, that have found wide recognition in creating deeper understanding of how formal organizations operate.

2.2.1 The systems Theory

Systems theory is an interdisciplinary field which studies systems as a whole. Systems theory was founded by Ludwig von Bertalanffy, William Ross Ashby and others between the 1940s and the 1970s on principles from physics, biology and engineering and later was extended into other fields including organizational theory, management, psychotherapy and economics among others (Weinberg, 1975).

By systems, Bertalanffy means 'complexes of elements standing in interaction. The closed system is called closed if it neither takes in nor emits matter (only energy exchange is possible and taken into account). The system is called open if there is a continual input and output of both energy and matter in it. Also, Anthony (1964) added that all systems except the smallest have subsystems and all but the largest have supra systems, which are their environment. Each system or subsystem conceptualized as having a boundary. The boundary of a system is the component that

separates the system from its environment and filters the inputs to and the output from the system.

An organization is synonymous with interrelated units or sub systems that must work together to achieve its goal and deliver on mandate. The systems perspective holds that to fully comprehend the function of the entire system, the interrelationships among different components or individual units have to be understood. The internal control system covers all relevant areas of an entity and help in creating a properly organized and controlled unit. Internal control is all-inclusive activity in all areas of organizations operations. However, the most important thing is that internal control should also take into account the objectives and goals of the tasks in order to make as effective as possible (Vaclovas & Giriūnas, 2012). Synonymously, Controlling and safeguarding inventories is considered an organizational wide activity that requires every unit, department or section to participate. Each department or unit will have a unique set of responsibilities and tasks that may be viewed as independent while collectively contributing towards the overall inventory management goal.

The systems theory has over time found extended application in management activities across all sectors. Systems theory has been applied to a wide variety of organizational and management issues including innovation (Shen et al 2009), information systems change (Lytinen and Newman, 2008) and supply chain management (Helou and Caddy, 2006). With the applications of the systems theory is a supply chain context (Helou and Caddy, 2006) found out that it leads to a better understanding of the dynamics within supply chains and how they evolve over time significantly influencing its performance. Recently researchers have suggested that business in general benefits from leveraging a systems perspective in all its activities through the adoption of the systems approach (Atwater et al, 2008; Linden et al, 2007).

2.2.2 Management Control Theory

Management control theory is a relatively young body of knowledge found in the management (Otley, 1994).The theory derives most of its foundation from the concept of Management control which incorporates a wide range of formal and informal

approaches aimed at regulating the behavior of members of an organization and to assure that resources are obtained and used effectively in the achievement of an organization's objectives (Anthony, 1965). It is viewed as a process from where managers influence other members of an organization to implement the organization's strategies (Anthony & Govindarajan, 1998).In their work Anthony & Govindarajan (1998) noted that management control is a process by which managers at all levels ensure that employees whom they supervise implement their intended strategies. A view from organizational performance perspective, management control can be seen as a distribution of means used by an organization to elicit the performance it needs and to check whether the levels of such performances are in accordance with organizational specifications (Etzioni, 1960).

A main assumption underlying the management control theory is the recognition that economic activities in formal organizations are organized and managers are required to coordinate work and subunits through systematic rules and procedures (Whitley, 1999). The main task of the management control system is to ensure that the work activities and subunits conformed to the top managers' objectives and to supply the information to enable the managerial hierarchy to correct any deviations from set plans.

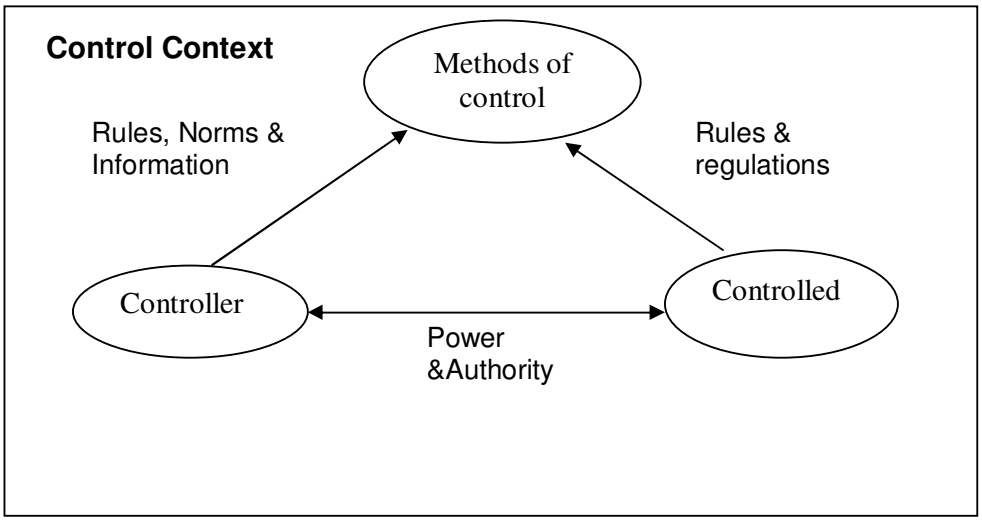


Figure 2.1: Elements of management Control Methods

Source: Whitley, (1999).

The concept recognizes the existence of three key elements that must be present for any managerial control to take place within the control context: controller, controlled aspect and the methods of control as the intervention tool. The controlled represents the activities that must be subjected to a controlled output or behavior in line with set rules goals or standards. The controllers, a central part of the system is made up of the elite group at the top of the administrative pyramid responsible for making decisions that makes the organization an efficient and effective entity (Whitley, 1999).

The management control theory has found numerous support and application on business due to its underlying concept that has given clarity and justification to most managerial decisions used to regulate behavior of organizational members so that organizational goals are accomplished with minimum use of resources.(Anthony & Govindarajan, (1995) fully recognizes that organizational effectiveness, is largely dependent on similarity of individual and organizational goals and this synchronization is made possible through implementing effective management control. It enables organizations to increase the probability of its employees to make decisions and take actions that are in the organizations' best interest (Chow, Shields, & Wu, 1999). Such a context is a direct replica of the application of internal control systems in businesses today. Inventory management must be carried out within the context of existing management policies and must provide a basis in which all related activities are controlled in compliance or conformity of an established benchmark.
In integrating the different models of internal control systems, Committee of sponsoring Organizations (COSO) have developed a widely accepted integrated model that is used to guide organizations internal control systems.

According to COSO (2000), internal control systems should have five key interrelated components namely; risk assessment, control environment, control activities, information and communication and monitoring. This must be based on the control objective of providing desired level of assurance as indicated in figure 1.

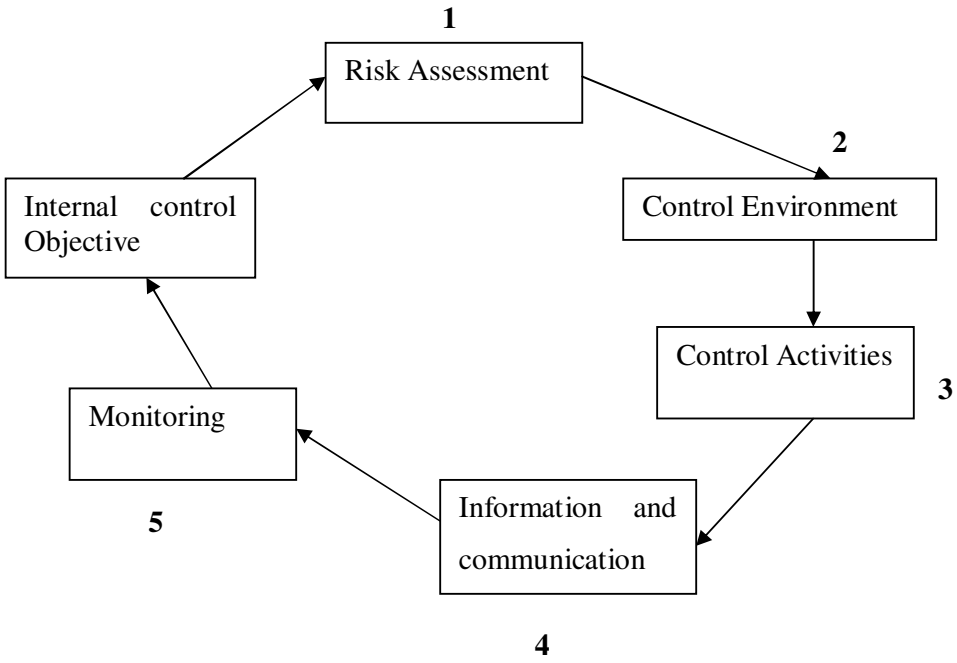


Figure 2.2: COSO Model

Source; COSO (2000)

Internal control systems are processes that assess the quality of the system's performance over time and are accomplished through monitoring, separate evaluations or a combination of both. Monitoring as a process will usually occur in the course of operations and manifested through regular management, supervisory activities, and other actions individual personnel will take in performing their duties. The scope and frequency of separate evaluations is seen to highly depend on an assessment of risks of the evaluation systems and the effectiveness of the chosen monitoring procedures. Internal control deficiencies should be reported upstream, with serious matters reported to top management and the board.

The Control Environment relates to a measure of consciousness inherent in the people within the organization forming the basis for all other components of internal control. Risk assessment within this control context refers to the act of organization's identification, analysis, and management of the risks that are related to inventory management in order to ensure inventories are safeguarded. Control activities on the other hand is highly derived from the organization's policies and procedures which creates a mechanism that ensures that necessary actions are taken to address the

potential risks involved in accomplishing the set objectives. Information and Communication on the other hand focuses on the nature and quality of information needed by those with the responsibility of ensuring effective control, the systems used to develop such information, and reports necessary to communicate effectively all internal control issues. The monitoring aspect involves assessing the quality and effectiveness of the organizations internal control process over time and includes assessing the design and operation of controls, and assessing compliance with policies and procedures

2.3 Empirical Literature Review

Critical to successful adoption of internal control system is a clear understanding of its components in line with the unique operating environment on which it is implemented. According COSO (2000), there exist five areas that must be addressed by an internal controls system as critical components namely: The control environment concerned with assessing of current internal controls that exist; the risk assessment that determines critical risks to an organization; the control activities required to test the strength of critical internal control activities; the information and communication supporting all relevant communication lines and monitoring and evaluating concerned with all issues pertaining to how internal controls are followed up. The same institution provides a narrow approach where internal control systems are classified as preventive (detect risks before they occur), detective (detect risks as they occur) and/or corrective (take corrective measures with risks after they have taken place).

Jackson and Stent (2007) on their side proposes a non-exhaustive list of internal control measures as key indicators on its components which includes: staff competency, segregation of duties, isolation of responsibility, access and authorization, comparisons reconciliations, and source document design. The consulting firm Ernst & Young (2003), in their advisory and assurance manual proposed that the internal control system should include any procedures used and relied on by management to prevent material misstatements, whether caused by error

or fraud from occurring during transaction processing or detect and correct on a timely basis material misstatements that may occur in processing transactions.

2.3.1 Procurement Control Systems

The first step of an internal inventory control checklist is a review of the company's procurement process. The checklist should include a review of the authorization process for large business purchases, how the purchase order process is completed and how the invoices are paid when the goods are received by the company. The checklist is used to verify that no fraud or collusion is going on that allows employees to purchase personal items with company funds. Additionally, all inventory items purchased should be for legitimate business purposes (Collins, 2012).

2.3.2 Stores Control System

Inventory storage facilities are an important part of the audit checklist. Auditors must physically review the storage facilities and determine how well the security features of the storage facilities protect the company from theft or spoilage. This part of the audit checklist may be more related to the operational procedures of the business rather than the financial procedures. Operational inventory audits also include a review of the inventory on hand in the storage facility, ensuring that what the company indicates as on-hand truly exists. Internal physical inventory documents are also included on the audit checklist to determine the inventory amount on-hand for tax purposes. Auditors test these items to ensure that all physical inventory assets are accurately reported by the company (Collins, 2012).

Stores control practice is a necessity if firms are to offer their customers a satisfactory service. Adequate levels of inventory must be available at any given point in time and can only be achieved if ordering, receiving, and record keeping functions are performed accurately and effectively. (Cooper, 2006). An effective system for inventories provides reasonable assurance regarding the achievement of a department's objectives especially with regard to lower inventory costs (Pillai 2010). To have an effective system of internal stock control, the management should be able to determine the specific controls that are operating effectively through direct and on-going monitoring of the functioning of controls (Jackson and Stent, 2007). Ernst &

Young (2003) in their manual recommends that for effectiveness, systems of stock control should include strong prevent controls (either programmed or manual) in addition to detect controls.

Overall, the role of inventory management as a tool to cut costs in the Small and Micro Enterprises (SME) received little attention of scholars and policy makers. However, significant operational cost cuts can be achieved through efficient inventory management systems. In his study of India's machine tools SMEs, Pillai (2010) reveled that SMEs are aware of the importance of inventory management practices, however, when it comes to practice, almost 25% of them did not pursue any kind of inventory management practice. This is primarily due to lack of motivation as well as lack of perception of immediate financial gains. Mazanai (2012) in his close look at the impact of Just in time systems on efficiency and quality of SMEs in South Africa noted that in overall, the role of inventory management as a tool of cut costing in the SME sector received little attention of scholars and policy makers. However, significant operational cost cuts can be achieved through efficient inventory management systems.

Ingram, (2012) in his article on examples of safeguarding inventory in small businesses contends that inventory can be one of the most valuable assets, making inventory security crucial in a wide range of industries. Inventory can be protected in a number of ways, and with a number of tools, including technology, manpower, internal controls and simple common sense. Reviewing a few examples of safeguarding inventory sheds light on common inventory security methodologies, helping organizations to implement the ideal inventory safeguards for business concerns or establishments. Procurement control systems based on technology like just –in- time (JIT) purchasing technique provides safeguards as a side effect as they automatically replace inventory at optimum reorder points. By storing inventory in a central location until it is needed at a branch, or ordering inventory directly from suppliers to meet current needs, companies reduce the number of locations a thief can steal from. Internal stores controls such as inventory audits count inventory on hand and compare it with internal inventory records, purchase records and sales records help to spot incidents of theft, spoilage or other forms of frauds. Internal audits act as a powerful psychological deterrent to internal theft.

As per sentiments of Tosdal (2006), stock control process focuses on factors related to time utility, supply of quantity and quality materials used by the operations of any industry. Stock control procedures are measures adopted to determine how much stock an establishment can hold at a given time and how they keep track of it (Bleigh, 2009). This practice covers stock at every stage of the production process, from purchases and delivery to using and reordering of items. This concept revolves on the fact that stores, being a service oriented department, must provide the entire organization with the right materials that are delivered and issued in the right quantities and quality which must be available at the right time, right place and at the right price (Levis, 2009).

The objective of practicing inventory control is to ensure that the conditions mentioned above are fulfilled by providing the information necessary to take appropriate action at every stage of the production process or operation. Stock control practice is a necessity if any institution is to offer their guests a balanced assortment; this means every item held in the store should be controlled. Different institutions' establishments adopt different measures that best suits them, this provides up to date information and also reduce excesses to the nearest minimum (Cooper, 2006).

2.3.3 Stock distribution control systems

Collins (2012) in reviewing internal control systems identified another important inventory checklist item to be the internal distribution, sales and returns process used by the company to record sales to consumers and other businesses. This checklist item is important because it affects both the operational and financial side of the company's operations. Auditors will review how a company records sales, the information reported on all sales orders and what the return policy is for inventory returns. The operational audit portion of the sales and returns process includes the verification of inventory items leaving the warehouse when sales or issuance occur and how returns are physically received at the storage facility.

The stock control process as part of the wider internal control systems focuses attention on factors related to supply of quantity and quality materials used by the operations of the organization (Tosdal, 2006). In support of Tosdal's proposition, Bleigh, (2009) asserts that Stock distribution control procedures are those measures

that are adopted to determine how much stock an establishment can hold at a given time and how they keep track of their movements internally. Both Tosdal and Bleigh are also in consensus that the practice covers stocks at every stage of the production process, from purchases and delivery to using and reordering of items.

2.3.4 Internal Management control systems

According to Noorvee (2006), control activities are manifested as policies and procedures that help to ensure management directives are carried out. They are critical to ensuring that necessary actions are taken to address risks necessary for the achievement of the organization's objectives. They include a range of activities as diverse as approvals, authorizations, verification, reconciliation, review of operating performance security of assets and segregation of duties.

The role of employees in the entire stock management process cannot be however ignored. As the responsible faction and service oriented department, procurement must provide the entire organization with the right materials and issued in the right quantities and quality at the right time, right place and at the right price (Levis, 2009). Segregating employee duties is an important internal control system feature for inventory management, as well as any other valuable asset. Fagbulo (2009). Dividing specific duties between employees helps minimize risk and fraud, and maximize inventory and supply protection. For all inventory related activities authorizing, recording, custody and reconciliation must be core to any stock security (Geyer, 2011). Geyer further recommends that one employee should be in charge of and authorized to complete the ordering function. However, if a specific act exceeds pre-established levels, the practice manager or owner must intervene. When the ordered inventory arrives at the unit or storage area, a different staff member than the order-placer should receive the inventory. This person should verify contents to assure complete order receipt. The receiver physically checks the items against the receiving document to ascertain everything is in order. Any damaged or expired goods should be immediately identified documented and the supplier notified (Geyer, 2011)

To strengthen the inventory safeguarding processes, the people responsible for ordering and receiving inventory should not be the same as the individual who placed

the order. If a single person performs all of these functions, theft risk is much higher and nearly impossible to uncover. Without the proper segregation of duties, the financial detriment to your practice can add up quickly. To that end, all inventory transactions should be supported by the proper documentation, such as approved purchase orders and invoices and delivery notes. (Geyer, 2011)

As pointed out by Levis (2009), desired levels of effectiveness can be accomplished through regular management and supervisory activities, monitoring adherence to policies and procedures, and other routine actions such as comparisons and reconciliations, supplemented by internal audit or other compliance functions that test, monitor, and evaluate the functioning of controls, or by various self-assessment programs. If management cannot identify current procedures that provide a basis for concluding the control operates effectively, it should develop procedures to test and evaluate the operating effectiveness of the controls (Ernest & Young, 2003).

The evaluation of the overall effectiveness of internal control is both the end and the beginning of the process (COSO, 2000) and hence systems require control enhancements to respond to new products or emerging risks. In other areas, the evaluation may point out redundant controls or other procedures that are no longer necessary hence call for self-monitoring and self-correcting. This means a company should establish mechanisms to continually evaluate and maintain the system of internal control and, when necessary, take corrective action in a timely manner.

Several previous studies (Hayes,1995, Coram et al (2006, Ashbaugh-Skaife, (2008 Synder et al, 1989 &Pillai (2010)) have found that effective internal management control if implemented effectively leads to success in key business parameters. (Hayes, 1995&Synder et al, 1989). Doyle et al, 2007) support this fact by noting that better internal management control should yield more reliable internal data and information such as inventories, payables and performance measure, thus leading to better internal decision making, improved operations, and lower employee fraud. Strong internal control system strengthens enterprise governance, allows management objectives to be achieved and mitigates the risk of fraud by increasing employee perception of detection (Ashbaugh-Skaife, 2008).

2.4 Internal Control System Benefits

Substantially, internal controls add value through improving the control and monitoring environment within organizations to detect fraud (Coram et al, 2006). The internal control system is vital to reasonable assurance regarding the company's capacity to achieve its objectives. Nevertheless, a function more independent and objective must be implemented in order to provide a satisfactory level of benefits to the organization.

2.5 Internal Control Systems Challenges

Despite the fact that many internal controls are a simple matter of common sense, the regular use of checklists to review the control processes can be a valuable tool in the control process and help identify errors. Not all requirements are justified, and standards system should be redefined to eliminate redundancy and ambiguity (Popescu&Dascalu , 2012). Rossi asserts that unless the weaknesses in the internal control system are corrected, managers will perceive that the system is performing as originally intended yet it may be open to weaknesses that lead to losses. Five primary contributors to internal control illusions are organizational size changes, technology improvements, process changes, failure of physical safeguards, and employee failure to perform (Rossi, 2012).

Organizations are at all times expected to maintain sufficient control over their inventory, and in such cases adopt proper measures that are effective and consistent in their operations. It will serve as guide to all staff and thereby help them improve on their performances, as the sole aim of every business is profit, (Enemuo & Uwazuruike, 2012)

As Brent, (2010) point out, the advantages of internal control are numerous, the greatest of which is creation of a more efficiently run organization, ensures company's resources are utilized only for their intended purposes, greatly minimizing the risk of resource misuse. Internal control also prevents any irregularities by detecting them quickly and thus resolving any issues that arise in a timely manner. In addition, having strong internal controls in place can prevent a company's employees

from being accused of any irregularities or misappropriations. However, if internal controls are badly planned or executed, employee frustration or apathy may result. In addition, an internal control system that is too rigidly designed to allow for adaptation to a particular organization may be difficult to sustain. Perhaps the biggest disadvantage to internal control is that it may cause an organization to become over-dependent on the system, which may lead them to relax other measures of checking for fraud and errors.

At wool and others, in their study of illusions of internal control noted that internal controls are often allowed to deteriorate over time or simply become ineffective because of organizational changes. Such a situation generates the perception of internal control protection that, in fact, is an illusion. These illusions can create trouble for an organization that must rely on the internal controls system to protect assets, ensure the integrity of financial information, and prevent and detect fraud (At wool, et al 2012). Because of wide adoption of internal control system, new challenges are arising related with the potential of internal audit to assure an adequate assets protection and to detect, prevent and deter fraud in comparison with the solution provided by other traditional prevention tools. (Lowe, et al, 2001)

In evaluating the value of internal audits, Coram et al (2006) noted that internal control is imperative to assure that the company will operate properly but in the same time the quality of internal control and its ability to reach its objectives are close related with the quality of internal control system. It is critical therefore that viability of internal control system must be assessed, tested and monitored permanently in order to identify and change the obsolete components with new and genuine internal control procedures that are delivering the expected results.

2.6 Conceptual Framework

This research was guided by the following conceptual framework

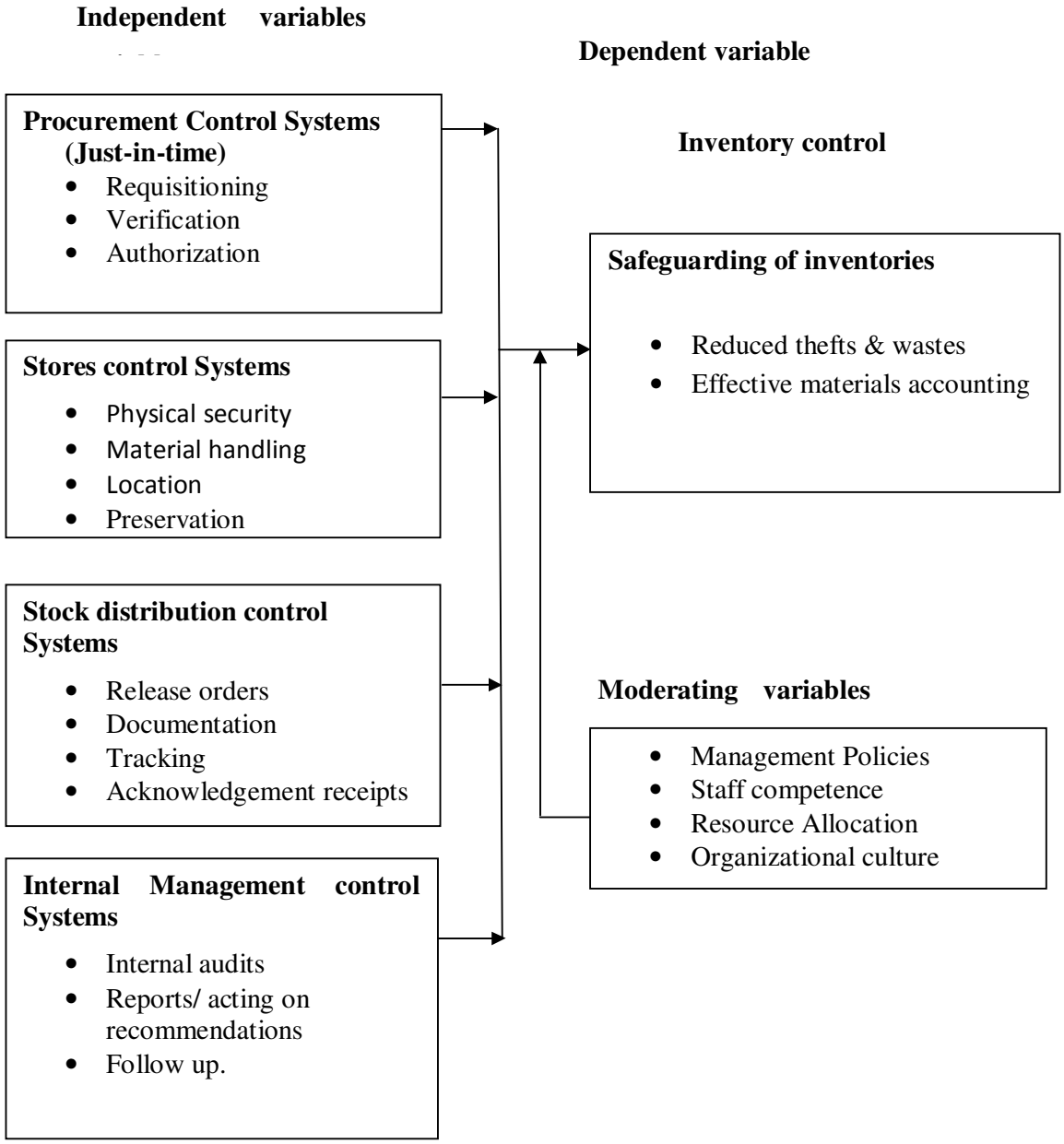


Figure 2.2: Effectiveness of Internal Control Systems in Safeguarding Inventory

Source: Researcher's own Conceptualization, (2013)

The extent, to which inventories of any establishment are secured or are safeguarded, is dependent upon management policies on procurement.

Procurement control systems which are effective provide protection to inventory. Effective purchasing systems for example, just in time systems, reduce opportunities for stealing of stock as orders are placed just at the time they are required.

Staff competence influences stores control as able and professional security personnel provide security to stores establishments. Resource allocation is critical to safety and security of inventory. Management which embraces proper control policies provides facilities to mitigate risks of inventory. Fire alarms, security alarms and other safety and health equipment are resources which indicate effective internal management control systems that impact positively on safeguarding/securing of inventory. A stock distribution control system is an important aspect of internal control which influences the safeguard of inventory. Effective distribution systems reduce risk of damages and mislaying of stock. Stores control systems have an influence on security and safety of inventory. Effective stores control systems are measured by existence of inventory audits. Systematic count on inventory on hand and comparison with internal inventory records, purchase records and sales records reflects on incidents of theft, spoilage or other forms of fraud.

2.7 Research Gaps

Internal control is undoubtedly the key necessity in all organization and especially for processes that are open to non-performance or large variations. Any comprehensive inventory control system must start with the establishment of the needed products or services and end with the provision of the desired service or product in line with the original need. Studies and literature reviewed (Fagbulo (2009), Harrngton et al(1990), Jongh (2010), Kakucha (2009) have all pointed out the need to consider internal controls systems as a critical tool for organizations success. On the same front, there are serious challenges that come with the implementation of the systems (At wool, et al (2012), Rossi (2012) that must be addressed. At RVIST, just like any other institution in Kenya that have adopted internal control systems that are meant to address previous losses and inefficiencies in its procurement systems should carry out continuous evaluation to ascertain their progress and performance. Previous studies have centered on manufacturing firms while service centered organizations are equally affected by similar inventory predicaments.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers the design of the study, target population, sampling designs and procedures, data collection instruments, data collection methods, and data analysis methods.

3.2Research Design

To achieve the objectives of the study, a descriptive research design was conducted in order to enable the researcher to collect data on the effectiveness of internal control systems used by RVIST by use of a structured questionnaire. The researcher administered questionnaires to 187 employees who filled in one week. With descriptive statistics, the researcher presented facts concerning the nature and status of the situation, as they existed at the time of the study and described present conditions, events or systems based on the impressions or reactions of the respondents of the research (Creswell, 1994).

Descriptive research design allows for systematic description of facts and characteristics of the given population or sample of the population or area of interest factually and accurately (Kothari, 2004).The researcher opted to use this kind of research design considering the desire of the researcher to obtain first hand data from the respondents so as to formulate rational and sound conclusions and recommendations for the study.

3.3 Study Area

The study was carried at Rift Valley Institute of Science and Technology main campus situated approximately 10 Km from Nakuru town. The institution currently has a total population of approximately 351 of which 203 are academic staff and 148 non-teaching staff. The target population estimated to have the desired characteristics for the study was 351. These were the employees who directly participate in stock procurement control, storage and distribution process as well usage of materials.

3.4 Target Population

The study collected data from all nine departments and sections of the institute. This was in consideration that the procurement process starts with the consumer of the products or services to be procured and ends with the same once the ordered items are supplied hence all the departments are subject to internal control systems that are in place. From all the nine departments and sections, only 351 staff members who were directly involved in the supply chain were considered to form the target population for the study who were then distributed as indicated in Table 3.1.

Table 3.1 Target Population

Department	Number of employees
Administration	29
Tender committee	28
Procurement	41
Accounts	37
Stores	38
Catering	37
HODs (academic departments)	53
Security	42
House keeping	46
Total	**351**

Source: HRM RVIST (2013)

3.5 Sampling Design and Sample Size

The accuracy of research findings generalization to the wider population is highly influenced by the selection of the right sample size. According to Mugenda and Mugenda (2003), a sample size of 10% -20% of the population is considered representative, however, where time and resources allow, the researcher should take a bigger/larger sample for better inferences. For this study, the sample size was determined by the use of the following formula developed by Cochran (1963)

$$n = \frac{N}{1+N(e^2)}$$

Where; n = the desired Sample size

N = the population

e = ±0.05, is the level of precision

Therefore the sample size was:

$$n = \frac{351}{1+351(0.05^2)}$$

= 187 respondents

A total of 187 employees were selected to participate in the study. With the target population already grouped into different strata, stratified sampling techniques were found to be the most appropriate. Stratified sampling was used to select the employees who participated in the study. In each stratum or department simple random sampling was used to select respondents. Allocation of each stratum was done through proportional stratified random sampling given in the following formula below:

$$n_i = \frac{n}{N} * N_i \qquad \frac{187}{351} \times 29 = 15$$

(For Administration as an example)

Where, n_i= Number of members in the sample from strata i for i = 1, 2, 3, 4…..9

N_i = Number of members in the population from strata i for i = 1, 2, 3, 4……9

N = Number of members in the entire population

n = Sample size. In administration for example, stratum size = 29/351(187) =15. Their distributions were as provided in Table 3.2.

Table 3.2: Selection of Sample Size

Department/strata	Number of employees	Sample size
Administration	29	15
Tender committee	28	15
Procurement	41	22
Accounts	37	20
Stores	38	20
Catering	37	20
HODs	53	28
Security	42	22
House keeping	46	25
Total	**351**	**187**

The nine departments represented the different strata and the choice of stratified sampling allowed the sampling process to incorporate proportionate representation of each group in the final sample hence eliminating any group misrepresentation that would arise in the sampling process.

3.6 Data Collection Instruments

A structured questionnaire was developed taking into consideration the four specific inventory processes in the procurement cycle and in line with the study's objectives.
After taking into consideration that the data would be collected during normal working hours, the questionnaires were given to the selected respondents and a period of one week was available for them to fill before collecting. This was expected to give them adequate time to respond to the questions and hence minimize chances of incomplete questionnaires. The researcher personally distributed the questionnaires and explained the purpose of the data collection process so as to reduce on chances of wrong perception being attached to the process. Heads of sections and departments were consulted to assist in encouraging the respondents to participate.

3.7 Validity and Reliability of Research Instruments

Cronbach's alpha reliability coefficient was calculated to estimate the reliability of the data. The results of the correlated sets gave the researcher positive correlation coefficient of 0.7 which showed that the instrument was reliable. These are within the threshold of 0.7 which is considered good (Sekaran, 2000).

3.8 Data Analysis and Presentation

Once all questionnaires were collected, the data were cleaned and coded into Statistical Package for Social Sciences (SPSS) for analysis. Using descriptive statistics inform of frequencies and percentages, the researcher established the general characteristics of the respondents and their responses on general research items in the questionnaires by use of a Likert scale or summated scale. Most of these analyses were presented in form of tables and charts. Inferential analysis was done with the aid of SPSS (Statistical Package for Social Scientist Version 20) where Pearson's correlation coefficient was used to test the relationship between the procurement, stores, distribution and organizational internal control policies against the effectiveness achieved. Further regression analysis was used to assess the extent to which each of the specific internal control processes had contributed to the overall effectiveness achieved. Both of the above analysis was used as the basis of rejecting or accepting the research hypotheses.

Since the variables involved were more than two, multiple regression analysis was done to determine the relationship, where:

The equation was in the form: $Y = a_o + a_1x_1 + a_2x_2 + \ldots. + a_nx_n + \dot{\varepsilon}$

Where $Y = a_i$ are coefficients to be estimated, Y is the dependent variable and x_i are the independent variables and e the error term.

(x_1) = internal procurement controls

(x_2) = internal stores controls

(x_3) = internal stores distribution controls

(x_4) = internal management controls

e = error term normally distributed with zero mean and variance

To enhance understandability of the results, tables, charts and graphs were used in presentation each accompanied by a descriptive narrative

3.9 Ethical Considerations

Permission to carry out the study was sought from Kabarak University, and from the respondents who participated in the study. The nature and the rationale for the study were explained to the respondents by the researcher. The researcher would respect the individuals' rights and also safeguard their personal integrity. In the course of the research, the respondents were assured of confidentiality.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the analysis of data collected in the field through the use of questionnaires that were administered to employees of RVIST. A total of 187 questionnaires were issued and 171 were collected back of which 3 were rejected for being incomplete for analysis leaving 168 questionnaires for analysis. This represents 89.8% response rate adequate for any inferential analysis and meaningful conclusions in research.

4.2 Respondents Characteristics

4.2.1 Age of the respondents

The age distribution of the respondents were examined and the outcome was as presented in Table 4.2.1

Table 4.2.1 Age distribution of the respondents

Age Bracket	Valid count	Percentage
Below 20 Years	27	16.1%
Between 20-30 Years	36	21.4%
Between 31-40Years	67	39.9%
Between 41-50Years	22	13.1%
Over 50 Years	16	9.5%

Source: Research data, 2014

From the analysis it was evident that a majority making up 39.9% of the respondents were aged between 31 – 40 years followed by those who were aged between 20-30 years represented by 21.4%. Those who were aged below 20 years accounted for 16.1% while those between 41-50years and above 50 years made up 13.1% and 9.5 % of the respondents respectively.

4.2.2. Gender of the Respondents

Each of the respondents was requested to indicate their gender as one of the key attributes of mapping out respondent's characteristics. Their responses were as provided in Table 4.2.2:

Table 4.2.2 Gender distribution

Gender	Valid count	Percentage
Male	111	66.1%
Female	57	33.9%
Total	168	100%

Source: Research Data, 2014

From the analysis majority of the respondents (66.1%), were male while 33.9% were female. This shows that male respondents were more than female.

4.2.3 Respondents Work experience

To establish the respondents experience with the internal control systems in use at RVIST they were requested to indicate the number of years they have worked for the institution and their response were as presented in Figure 4.2.3:

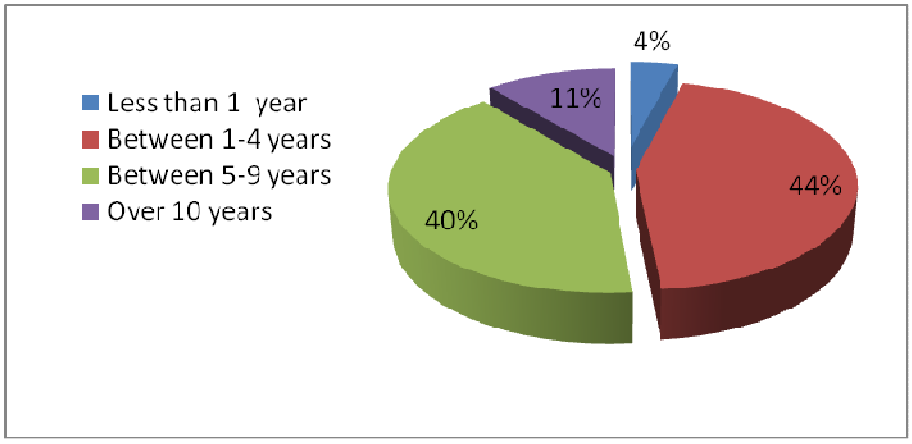


Figure 4.2.3: Years of Experience

Source: Research Data, 2014

The results indicate that majority of the respondents (44%) had experience of between1-4 years, while 40% have experience of between 5-9 years. 11% of the respondents indicated that they had experience of more than 10 years while 4 % had experience of less than 1 year. This gave the findings of the research more confidence since a good proportion of the respondents had a good exposure on the internal control systems used by the institution.

4.2.4 Respondent's Departmental distribution

The distribution of the respondents across the representative departments included in the study were as indicated in Table 4.2.4

Table 4.2.4 Response per department

Department	No of Respondents	Proportion In the total response	Departmental Response Rate
Administration	14	8%	93%
Tender committee	12	7%	80%
Procurement	20	12%	91%
Accounts	18	11%	90%
Stores	19	11%	95%
Catering	18	11%	90%
HOD(academic departments)	26	15%	93%
Security	19	11%	86%
House Keeping	22	13%	88%

Source: Research Data, 2014

Response from the administration department accounted for 8% of the total respondents and 93% of what was expected from the department was received. The tender committee represented 7% of the entire sample group with 80% response rate attained in the department. The response from the procurement department represented 12% of the total response received, internally attaining a 91% response rate. Accounts, stores catering and security equally contributed 11% in the total response received while each returning 90%, 95%, 90% and 86% response internally respectively. The head of departments in academic departments represented 15% of the response rate while 95% of what was expected was received. Housekeeping accounted for 13% of the total respondents while 88% of the expected respondents returned filled questionnaires. All the departments therefore were represented proportionately in the analysis with adequate response rate achieved from all the departments within the institute.

4.2.5 Overall responsibility for determining departmental procurement needs

The overall responsibility for determining departmental procurement need and hence the initiation of the process were indicated by the respondents as presented in Table 4.2.5

Table 4.2.5 Responsibility for determining procurement needs

Individual/office responsible	Frequency	Valid percentage (%)
HOD	72	43
HOS	37	22
User	27	16
Store keeper	8	5
Foreman	24	14

Source: Research Data, 2014

It was established that majority (43%) of the departments were vesting the responsibility of determining its procurement need on the Head of department. This was followed by sections head as was indicated by 22% of the respondents. Sixteen percent (16%) of the respondents noted that it was the user while 14% and 5% indicated that it was their foreman and storekeeper respectively.

4.2.6 Responsibility for communicating requisitions

Those with the specific responsibility of preparing and communicating departmental needs through the relevant procurement channels were as indicated in Table 4.2.6

Table 4.2.6 Communication Responsibility

Individual responsible	Frequency	Valid percentage (%)
HOD	99	59
HOS	37	22
User	4	2
Store keeper	16	10
Foreman	12	7

Source: Research Data, 2014

Majority (59%) of the departments were using the Head of department as their key communicator followed by sections head as was indicated by 22% of the respondents. Ten percent (10%) of the respondents noted that it was their store keeper while 7% and 2% indicated that it was their foreman and user respectively. This indicated that the heads of the sections or departments were given the responsibility of facilitating the procurement processes on behalf of their departments or units.

4.2.7 Inventory control procedures used

The approaches used in safeguarding inventory internally were as indicated in Table 4.2.7

Table4.2.7. Internal control methods used

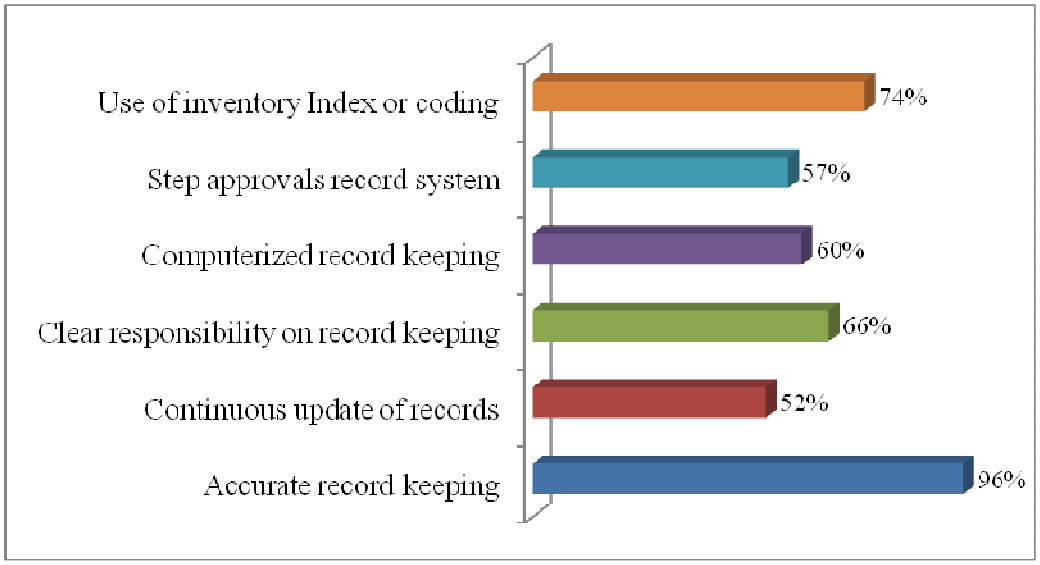
Procedure/Method used	Frequency	Valid percentage (%)
Inspection on entry & exit	123	73
Record keeping	154	92
Proper storage	139	83
Secure custody of storage keys	122	73
Proper Handling procedures	108	64
Segregation of duties	148	88
Others	12	7

Source: Research Data, 2014

Seventy three percent (73%) of the respondents indicated that they were carrying out inspections on any products that were either coming in or being issued to ascertain their quantities and nature. Record keeping was used by 92% of the respondents while 83% made sure that there was proper storage of their inventory items. Secure custody of store keys was noted by 73% of the respondents while 64% noted that there were proper procedure put in place to allow for safe keeping and securing of inventories. Segregation of duties was noted by 88% while 7% noted other procedures including continuous stock checks and periodic audits. This was an indication that the different approaches were being used in ensuring that inventories were safe and secure, notably use of records and assigning duties being the most widely used.

4.2.8 Managing Inventory Records

Management and prevention of errors is considered the key strategies for attaining effective inventory internal controls. The measures used in record keeping as a way of ensuring accuracy in different departments were as indicated in Figure 4.2.8



Source: Research Data, 2014

Figure 4.2.8 Inventory Record keeping Approaches

Emphasis on accuracy in its record keeping was used by 96% of the respondents while continuous update and setting out clear responsibilities on recordkeeping was noted by 52% and 66% respectively. Sixty percent (60%) 74% and 57% of the respondents indicated that they were using computerized record keeping systems, implemented a step approval recording system and used inventory index or coding for tracing their inventories respectively. It is therefore notable that most departments or sections in the institution were using a variety of measures for their record keeping with accuracy of the records and indexing/coding being widely used.

4.3 Effectiveness of inventory safeguard and security achieved.

In determining the extent of effectiveness achieved in the existing internal control systems at the institution, the respondents were requested to indicate their overall rating of its effectiveness. Their response were as indicated in Table 4.3.1

Table 4.3.1 Overall perception on the levels of effectiveness of inventory management

Effectiveness of inventory Safeguard and Security measures	**Frequency**	**Valid Percentage**
Very ineffective	0	0%
Ineffective	5	3%
Undecided	31	19%
Effective	46	28%
Very Effective	86	51%
Totals	**168**	**100%**

Source: Research Data, 2014

Half of the respondents (51%) indicated that their internal control system was very effective while 28% noted that it was effective. Three percent (3%) viewed the system as ineffective while 19% were undecided. It was therefore notable that the internal inventory control systems used by RVIST were relatively effective. To examine the security and safety status of the system further, the respondents were requested to rate the levels of effectiveness achieved in the different measures associated with inventory safety and security and their response were indicated in Table 4.3.2

Table 4.3.2 Individual Measures of effectiveness

Measure	VE	E	UN	I	VI	X^2 (P Values)
Adequate Security and safety	12 (7.1%)	11 (6.5%)	22 (13.1%)	31 (18.5%)	30 (17.9%)	102.667 (0.000)
Prompt ordering & receipt	70 (42%)	48 (29%)	42 (25%)	8 (5%)	0 (0%)	33.000 (0.000)
Theft & losses reduction	67 (40%)	55 (33%)	46 (27%)	0 (0.0%)	0 (0.0%)	11.107 (0.000)
Material accountability	59 (35%)	85 (51%)	16 (10%)	8 (5%)	0 (0.0%)	**91.571 (0.000)**
Reduced inventory cost	75 (45%)	70 (42)%	23 (14%	0 (0.0%)	0 (0.0%)	**39.250 (0.000)**

VE: Very Effective, E: Effective, UN: Undecided, I: Ineffective, VI: Very Ineffective

Prompt ordering and receipt of inventories was found to be a very effective indicator of effectiveness by 42% of the respondents while 29%, 25% and 5% found it to be effective, undecided and ineffective respectively. The ability of the system to reduce chances of theft and losses was found to be very effective by 40% of the respondents while 33% and 27% noted that it was effective and undecided respectively. More than half (51%) of the respondents noted that the system was effective in ensuring materials are accounted for while 35% , 10% and 5% found it to be very effective, undecided and ineffective respectively. Reduction of inventory costs was found to be very effective by 45% of the respondents while 42% noted that it was effective. The remaining 14% were undecided. The chi square test for each item in the scale gave p values of less than 0.05 set for the study. The outcome was in line with the overall effectiveness indicated in Table 4.3.2 with all the measures indicating considerable levels of effectiveness.

4.4 Internal procurement Inventory Control System

Respondents were asked to respond to a number of prepositions used as measures of the state of the institute's procurement control systems and their feedback were as indicated in Table 4.4.1

Table 4.4.1 Procurement Control Systems

Response statement	SA	A	U	D	SD	χ^2 (P-Value)
Our department rely on the Purchasing Department to coordinate procurement for goods and services	78 (46%)	42 (25%)	28 (17%)	20 (12%)	0 (0.0%)	34.905 (0.000)
Our department is fully responsible for determining the good or services we need	86 (51%)	54 (32%)	28 (17%)	0 (0.0%)	0 (0.0%)	139.500 (0.000)
We have our own internal system to monitor what we need in every period	79 (47%)	54 (32%)	27 (16%)	3 (2%)	5 (3%)	85.988 (0.000)
All purchases within our department are full centralized and controlled by assigned individuals	93 (55%)	26 (16%)	42 (25%)	7 (4%)	0 (0.0%)	73.476 (0.000)
There are clear and adequate written instructions on how to request for products/services required through the department	54 (32 %)	60 (36%)	42 (25%)	12 (7%)	0 (0.0%)	146.940 (0.000)
There is adequate supervision and control against procurement of excess and unnecessary goods/services?	77 (46%)	49 (29%)	36 (21%)	6 (4%)	0 (0.0%)	85.155 (0.000)
All the required documents are mandatory before a requisition is processed	88 (52%)	40 (24%)	31 (19%)	9 (5%)	0 (0.0%)	137.179 (0.000)
Everyone is aware of their responsibilities and limits in the requisition process	78 (46%)	52 (31%)	38 (27%)	0 (0.0%)	0 (0.0%)	25.857 (0.000)
All requisitioned products/services are directly used for only the intended purpose/need	69 (41%)	68 (41%)	25 (15%)	6 (4%)	0 (0.0%)	95.000 (0.000)

Forty Six (46%) percent of the respondents strongly agreed that their department was relying on the purchasing unit to coordinate the procurement of goods and services required. While 25%, 17% were undecided and disagreed respectively and 12% agreed.

Half (51%) strongly agreed that their department was fully responsible for determining the goods and services required while 32% agreed and 17% were however undecided. Forty seven percent (47%) of the respondents strongly agreed that there was existence of internal systems for monitoring period's inventory needs while 32%, 16%, 2% and 3% agreed , were undecided, disagreed and strongly disagreed respectively. The notion that all purchases within the department were fully centralized and controlled by assigned individuals was strongly supported by 55% of the respondents, 16% agreed, 25% were undecided and 4% disagreed.

The presence of clear and adequate written instructions on how to request for products or services through the department was strongly acknowledged by 32% of the respondents while 36% were just in agreement. 25% were undecided while 7% disagreed. Presence of adequate supervision and control against excessive and unnecessary procurement of goods and services received a strong agreement from 46% of the respondents while 29% were in agreement. Twenty one (21%) percent were undecided while 4% disagreed. More than half (52%) of the respondents strongly agreed that all the necessary documentation must be availed before a requisition being processed while 24% responded in agreement, 19% were undecided while 5%were in disagreement. Existence of clarity in individual responsibilities and limits in the procurement process received a strong agreement from46% of the respondents while 31% and 23% were in agreement and undecided respectively. Forty one percent (41%) of the respondents were in strong agreement that all product and services procured were used for the intended purpose. The same proportion was also in agreement while 15% and 4% were undecided and disagreed respectively. All the above response areas returned a Chi square values that were significant (P values < 0.05). It was clear from the above findings that most of the respondents were in agreement that the procurement internal control systems were contributing to inventory safety and security.

4.5 Store Control System

At the storage level the respondents responses obtained in relation to the control systems in use were as indicated in Table 4.5.1

Table 4.5.1 Stores internal control system measures

Response statement	SD	D	UN	A	SA	χ^2 (P-Value)
All received items are stored in secure storage facility/cabinets before they are used.	4 (2%)	16 (10%)	8 (5%)	82 (49%)	58 (35%)	**128.964 (0.000)**
There are procedures to ensure all inventories are adequately protected from damages, losses and theft	0 (0%)	7 (4%)	30 (18%)	48 (29%)	83 (49 %)	**88.571 (0.000)**
Storage of inventory are well organized and monitored	0 (0%)	0 (0%)	47 (28%)	38 (23%)	83 (49%)	**31.571 (0.000)**
Every inventory item is labeled and clearly documented	0 (0%)	0 (0%)	43 (26%)	54 (32%)	71 (42%)	**104.14 (0.000)**
All items are counted when moving to or from storage	0 (0%)	3 (2%)	39 (23%)	46 (27 %)	80 (48%)	**43.000 (0.000)**
Only responsible employees handles issues of storage and issuance from the storage area	0 (0.0%)	12 (7%)	11 (7%)	74 (44%)	71 (42%)	**38.905 (0.000)**

Close to Half (49%) of the respondents were noted to be in agreement that all items are stored in a secure place before they are used followed by 35% who strongly agreed with the preposition while the remaining 10% , 5% and 2% disagreed, were undecided and strongly disagreed respectively. Close to half (49%) of the participants in the study strongly agreed that there were procedures in place for ensuring all inventories are adequately protected from damages losses and theft. 29% were in agreement, 18% were undecided while the remaining 4% disagreed. Existence of a well-organized and monitored storage received a strong agreement by 49% of the respondents while 23% were in agreement and 28% were undecided. Forty eight percent (48%) of those who participated in the study strongly agreed that item were counted and verified when going into and coming out of the storage facility. 27% were also in agreement, 23% were undecided while only 2% disagreed. Lastly, 42% of the respondents strongly agreed that only responsible employees were handling issues of storage and issuance, 44% were in agreement while an equal proportion of 7% were undecided and disagreed respectively. All the above response areas returned Chi square values that were significant (P values < 0.05).

Similarly it was evident that most of the respondents were either in agreement or strongly agreed with the positive aspects of internal controls implemented at the storage level.

4.6 Stock distribution systems

The third component of the inventory internal control system to be evaluated was the distribution system. The levels of agreement or disagreements received from the respondents on prepositions evaluating the effectiveness of the distribution system were as indicated in Table 4.6

Table 4.6 Stock distribution control systems

Response statement	**SD**	**D**	**UD**	**A**	**SA**	**χ^2 (P-Value)**
All material released from store rooms only on the basis of requisitions which are approved by a responsible official of the department	0 (0.0%)	2 (1%)	33 (20%)	58 (35%)	75 (47%)	**76.571 (0.000)**
Only Individual responsible monitor and approve the write-offs of obsolete and inactive inventories	0 (0.0%)	0 (0%)	47 (28%)	46 (28%)	75 (44%)	**59.952 (0.000)**
Inventories are only released when all necessary documentation have been provided/approved	0 (0%)	9 (6%)	24 (14%)	41 (25%)	94 (56%)	**47.952 (0.000)**
Every product issued is always accounted for by the user	0 (0%)	8 (5%)	39 (32%)	39 (23%)	82 (49%)	**52.333 (0.000)**
Only inventories requisitioned are issued to the specific user.	0 (0%)	0 (0%)	34 (20%)	43 (26%)	91 (54%)	**22.619 (0.000)**
There is Proper accounting for goods that are consigned in and out	0 (0%)	4 (2%)	35 21%)	71 (43%)	58 (35%)	**47.000 (0.000)**

Close to half (47%) of the respondents were in strong agreement that materials are only released based on requisitions approved by responsible official of the department. 35% were in agreement, 20 % were undecided and 1% disagreed. On the approval of write off and inactive inventories by responsible individuals only, 44% of the respondents were in strong agreement, 28% were equally in agreement and undecided.

Release of inventories for distribution only when necessary documentation have been provided or approved was marked with a strong agreement by 56% of the respondents while,24%, 14% and 6% responded with an agreement, undecided and disagreement respectively. Having every product issued being accounted for by the user was strongly agreed to by 49% of the respondents while 23% were equally in agreement and undecided. Only 5% of the respondents were in disagreement. The preposition that only inventories requisitioned are issued to the specific user received 54% of the respondent with a strong agreement, 26% had an agreement while 20% were undecided. Existence of proper accounting for good coming in and going out received strong agreement from 35% of the respondents, 43% were in agreement, 21% were undecided while 2% were in disagreement. All the above response areas returned Chi square values that were significant (P values < 0.05). It is notable from the above finding that most of the elements defining the objectives on internal control system in regard to distribution of stock were being adhered to at RVIST.

4.7 Management Control Policies

The importance of the management policies adopted to guide the internal control systems cannot be overlooked. A number of prepositions were put to the respondents on specific management polices related to internal control systems and their response were as indicated in Table 4.7

Table 4.7 management policies on control

Response statement	SD	D	UD	A	SA	χ^2 (P-Value)
All our purchasing functions are centralized as per the management policies	0 (0%)	0 (0%)	12 (7%)	55 (33%)	101 (60%)	**44.143 (0.000)**
Management control policies and procedures are always up to date, in writing, and clearly approved.	0 (0%)	0 (0.0%)	42 (25%)	52 (31%)	74 (44%)	**98.095 (0.000)**
All internal control policies and procedures are clearly stated and systematically communicated to all	0 (0%)	5 (3%)	51 (30%)	51 (30%)	61 (36%)	**3.679 (0.159)**
Managerial policies and procedures support internal inventory control systems	0 (0.0%)	0 (%)	16 (10%)	64 (39%)	88 (53%)	**109.560 (0.000)**
The management policies supports detailed auditing and improvement of internal inventory control systems	0 (0%)	0 (0%)	24 (14%)	50 (30%)	94 (56%)	**49.286 (0.000)**
The management policies demand generation of all inventory related reports in all relevant levels	0 (0%)	8 (5%)	23 (14%)	66 (40%)	71 (42%)	**40.714 (0.000)**

A majority (60%) of those who participated in the study were in strong agreement that all purchasing functions were centralized as per the management policies of the institute. 33% were in agreement while 7% were undecided. The management control policies and procedure always being up to date in writing and approved was strongly agreed to by 44% of the respondents, while 31% and 25% were in agreement and were undecided respectively.

The preposition that all internal control policies and procedures are clearly stated and systematically communicated to all, received a strong agreement from 36% of the respondents. Equal proportions of 30% were in agreement and were undecided. The remaining 3% were in disagreement. The notation that the management policies support the internal control systems received a strong agreement from 53% of the respondents 38% were in agreement, while 10% were undecided.

Existence and support of detailed auditing and improvement of internal control systems by the management policies was supported by 56% of the respondents who were in strong agreement. Thirty Percent (30%) were in agreement while the remaining 14% were undecided. Lastly, the preposition that the management policies demand generation of all inventory related reports in all relevant levels returned 42% of the respondents in strong agreement, 39% were in agreement 14% were undecided and 5% in disagreement. From the above findings there is a strong indication from the respondents that the management policies in use at the institute are strongly in support of the use of internal control systems.

4.8. ICS improvement approaches

In addition to the four areas making up the objectives of the study, the respondents were requested to recommend means that can be used to improve on the effectiveness of the existing internal control systems at the institute. Their response were as indicated in Table 4.8

Table 4.8 ICS Improvement measures

Improvement approach	Count	Percentage
Streamlining of Stock locating and control system	142	85%
Install security monitoring systems	157	93%
Outsource security services	67	40%
Enhanced ICT usage	139	84%
Adherence to public procurement and disposal Act and other relevant policies	102	61%

Eighty five percent of the respondents were of the opinion that streamlining stock locating and control systems were a way of significantly improving on the effectiveness of the internal stock control systems. 93% suggested the installation of security monitoring systems, 40% proposed outsourcing of security services 84% recommends enhanced ICT usage and 61% noted that adherence to the public procurement and disposal act and other relevant policies will enhance the effectiveness of the internal inventory control systems.

4.9 ANOVA test for regression Model

To test the four hypotheses adopted in the study multiple linear regression analysis was adopted. Each of the dependent variable represented by the cumulative scores of the different attributes indicated in the questionnaire was tested against the total score of security and safety effectiveness of inventories at RVIST.

Preliminary analysis of the model to determine its significance in explaining the relationship between the control systems and effectiveness and weather the model assumptions of multicolinearity and heteroscedasticity were met. The ANOVA test of the model (Table 4.9.1) revealed that the independent variables were significantly explaining the dependent variable (F = 138.83, P-Value = 0.000)

Table 4.9.1: ANOVA Test for the Regression Model

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	604.839	4	151.210	138.830	0.000
Residual	177.536	163	1.089		
Total	782.375	167			

Source: Research Data, 2014

In testing for the presence of multicollinearity, pair wise correlation between the regressors was carried out and the results were as indicated in table 4.9.2

Table 4.9.2: Spearman's rank Correlation Results

Variables	PICS Total Score	SCS Total Score	SDCS Total Score	MCP Total Score
PICS Total Score	1.000	0.251**	0.485**	0.660**
SCS Total Score	0.251**	1.000	0.373**	0.261**
SDCS Total Score	0.485**	0.373**	1.000	0.466**
MCP Total Score	0.660**	0.261**	0.466**	1.000

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

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

Source: Research Data (2014)

As suggested by Gujarati (2004), the rule of thumb is that if the pair-wise or zero-order correlation coefficient between two regressors is high, in excess of 0.8, then multicollinearity is considered a serious problem. With the table 4.9.2 indication

correlation of between 0.251 and 0.660 and the regressors, presence of multicollinearity was ruled out. To examine the presence of heterscedasticity Value inflation factors from the regression output was examined. Similarly Gujarati (2004) recommends that VIF values of greater than 10 will signify presence of heteroscedasticity. From the results on Table 4.9.2, all VIF values for the independent variables were less than 2 indicating the absence of heteroscedasticity in the data.

4.10 Correlation Analysis

To test the significance of the four components of the internal inventory control system in explaining the overall effectiveness achieved in safeguarding inventory. The p-level represents the probability of error that is involved in accepting the observed result as valid, that is, as a representative of the population (MacColl, 2004). The results were as presented in Table 4.10.1

Table 4.10.1 Correlation Matrix

Correlations

		Securing Safeguard TotalScore	PICS Total Score	SCS Total Score	SDCS Total Score	MCP Total Score
securingSafeguard TotalScore	Pearson Correlation	1	.719**	.608**	.375**	.785**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	168	168	168	168	168
PICSTotalScore	Pearson Correlation	.719**	1	.497**	.193*	.543**
	Sig. (2-tailed)	.000		.000	.012	.000
	N	168	168	168	168	168
SCSTotalScore	Pearson Correlation	.608**	.497**	1	.377**	.488**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	168	168	168	168	168
SDCSTotalScore	Pearson Correlation	.375**	.193*	.377**	1	.275**
	Sig. (2-tailed)	.000	.012	.000		.000
	N	168	168	168	168	168
MCPTotalScore	Pearson Correlation	.785**	.543**	.488**	.275**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	168	168	168	168	168

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

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

From the Table 4.10.1, the results reveal that there is a strong positive relationship between procurement control systems and safeguarding of inventories (r= 0.719, $p<0.05$). Hypothesis states that procurement internal control systems have no significance in safeguarding inventories. The researcher therefore rejected the hypothesis and concludes that there is sufficient evidence at 5% level of significance that procurement internal control systems have a significant effect in safeguarding inventories at RVIST. Existence of adequate documentation process accompanied by clarity in individual responsibilities and limits in the procurement process to ensure that unnecessary procurements are minimized was also evident. This was in concurrence with the finding of Fagbulo (2012) and Jongh, (2010) in their studies on effects and utilization of internal controls in hospitality and fast food SMEs. The rejection of the null hypothesis and a conclusion that internal procurement was effective in safeguarding and securing of inventory, was therefore a clear confirmation that inclusion of procurement as a component of internal inventory control systems is necessary if the overall objectives of the system are to be achieved.

Based on table 4.10.1, the results revealed that there is a positive relationship between internal stores control systems and safeguarding inventories ($r=0.608$, $p<0.05$). Hypothesis states that internal stores control systems have no significant effect in safeguarding inventories. The researcher therefore rejected the hypothesis and concludes that there is sufficient evidence at 5% level of significance that internal stock distribution control systems have significant effect in safeguarding inventories at RVIST. In line with the findings of Kakucha, (2009), the stores departments was found to be a key unit and must provide the entire organization with the right materials that are delivered and issued in the right quantities and quality which must be available at the right time and at the right place, a fact fully supported by Harrington et al (1990).

Similarly, from table 4.10.1, the results reveal that there is a weak positive relationship between internal stock distribution control systems and safeguarding inventories ($r=0.375$, $p<0.05$). Hypothesis states that internal stock distribution control systems have no significant effect in safeguarding inventories. The researcher therefore rejected the hypothesis and concludes that there is sufficient evidence at 5% level of significance that internal stock distribution control systems have significant effect in safeguarding inventories at RVIST. This was an indication that the elements defining the objectives on internal control system in regard to distribution of stock were being adhered to at RVIST. In concurrence with the findings of Coram et al (2006) on the value of internal control and Harrington et al (1990) paper defining the benefits of an effective internal control system. It was notable that with the levels of implementing tight controls in stock distribution present in the institution, both direct and indirect benefits were expected.

From table 4.10.1, the results revealed that there is a strong positive relationship between internal managerial control policies and safeguarding inventories ($r=0.785$, $p<0.05$). Hypothesis states that internal managerial control policies have no significant effect in safeguarding inventories. The researcher therefore accepts the alternative hypothesis that internal managerial control policies have significant effect in safeguarding inventories at RVIST. Centralization of inventory systems as per the management policies, clarity existence and support of detailed auditing and improvement of internal control systems by the management policies and reporting were key strengths of the institutions in managing it's inventories. As recommended by Ernest & Young, (2003) in their manual, strong management policies provide a means to obtaining the critical data and information for decision making. The presence of strong management policies influences positively the performance of operations and activities. It was hence justifiable as confirmed by the hypothesis test to conclude that internal management control policies were effective in safeguarding inventories at the institute

4.11 Regression Analysis

The study sought to determine the effectiveness of internal control systems in safeguarding inventories. Regression analysis was conducted between independent variables and the dependent variable. The results in table 4.11.1 show the model summary of multiple regression analysis of independent variables and dependent variable.

Table 4.11.1 Regression Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.825[a]	.681	.679	1.226	.681	354.490	1	166	.000

a. Predictors: (Constant),

Source: Research data (2014)

The results in table 4.11.1 shows that there is a positive relationship between internal control systems and safeguarding of inventories (R=0.825). Coefficient of determination (R^2) is 0.681. This shows that 68.1% variation effectiveness of safeguarding is explained by internal control systems.

Table 4.11.2 Regression Model coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-7.276	1.309		-5.560	0.000		
PICSTotalScore	0.292	0.038	0.358	7.635	0.000	0.633	1.579
SCSTotalScore	0.108	0.034	0.149	3.175	0.002	0.629	1.590
SDCSTotalScore	0.099	0.035	0.116	2.856	0.005	0.845	1.183
MCPTotalScore	0.472	0.046	0.486	10.361	0.000	0.633	1.580

Dependent Variable: Safeguard effectiveness Total Score

Source: Research Data, (2014)

As shown in table 4.11.2, elements of internal control systems; procurement internal controls systems (β=0.358, p=0.000), stores control systems (β=0.149, p=0.002), stores distribution control systems (β=0.116, p=0.005), management internal control policies (β=0.486, p=0.000), were found to significantly influence safeguarding of inventories in RVIST. This means that the independent variables do contribute significantly to safeguarding of inventories. The results show that management internal control systems (β=0.486, p=0.046) has greater effect on safeguarding inventories followed by procurement internal control systems (β=0.358, p=0.038), stores control systems (β=0.149, p=0.034), and lastly stores distribution control systems (β=0.116, p=0.035).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter provides an overview of the results obtained during the analysis, takes a critical view in relation to other studies already carried out and develops the conclusions and recommendations.

5.2 Summary

From the descriptive and inferential analysis carried out, a critical look was taken to provide a relative understanding and a basis on which conclusions and recommendations were developed. In relation to responsibility over the determination of departmental procurement needs and communication of the needs, it was notable that most of the respondents were vesting it on the head of department or sections. This is in line with expectation that the head of departments and sections being the overall in charge are not only vested with the responsibility of guarding the resources assigned to the department but also are the decision makers.

The role of the procurement stage in influencing the effectiveness of the inventory control was notably evident in the institute. Relying on the purchasing unit to coordinate the procurement of goods and services as an expert department and the presence of clear and adequate written procedures on how to request for products or services through the department was strongly evident.

Stores control systems was the second component of the internal control systems that were found to be in use at RVIST. Storage of stock items in secure places protected from theft and damage, existence of a well-organized and monitored storage and ensuring that stocks are counted and verified when going into and coming out of the storage facility were effectively being implemented. These findings were confirmed by the rejection of the null hypothesis and acceptance that there is significant contribution of the stores controls in determining the overall safeguard achieved in the institute as indicated by the regression results.

In relation to internal distribution inventory control systems, the existence of strong control in requisition approval, issuance, documentation and the need for

accountability by the users was evident. This was confirmed by the null hypothesis being rejected leading to the conclusion that internal stock distribution control systems were effective in safeguarding inventories.

The last factor evaluated was the internal management control policies adopted by the institute. The benefits accruing from having the right management policy to guide all procurement activities could not be under estimated.

5.3 Conclusions

Based on the findings of the study a number of conclusions were arrived at in reference to the objectives of the study. First it was agreeable that the decision by the institute to adopt a systematic approach to its operation through implementing ISO 9000 standard was yielding desirable results in its inventory management systems. Despite some areas scoring moderately on the levels of effectiveness achieved, relatively there is notable success in ensuring that inventories were safe and secure.

The measures put in place at the procurement stage starting with the need of determination of requirements to the inspection of the supplies were effective in safeguarding and securing the inventories. Such measures have contributed significantly to the attainment of the overall levels of effectiveness of the institutes internal control system. At the storage level, measures directed towards reducing losses, theft deterioration of quality and enhanced record keeping have significantly enhanced the effectiveness of the inventory control systems at the institute. Similarly, distribution of stocks from the stores to the user departments was also performing well in relation to safety and security against losses and misuse despite being the least contributor to the overall effectiveness achieved.

The importance of management policies as the overall guide to all activities relating to internal control was clearly evident. It was found to strongly and positively influence the levels of effectiveness achieved by the control system. The correlation and regression test confirms that it was the biggest determinant of the levels of effectiveness achieved by the institute in its efforts to safeguard and secure its inventories. Despite the desirable levels of effectiveness of the control system being attained, there are still opportunities available for improvement.

5.4 Recommendations

In light of the above findings, the researcher recommends the following to be taken into consideration. First, the favourable results indicating high levels of effectiveness having been achieved in the safeguarding and securing inventories calls for the completion of the ISO: 9000 quality management systems implementation. The findings of this study confirm the results and benefits attained so far in its implementation and giving a justification for its full implementation. Moreover the benefits accruing from implementation of internal control system would accrue enormous benefits to the entire organization.

Secondly, it was established that there are a number of weak areas that requires intervention through new approaches or enhancement of existing measure that have not attained the required performance levels. With regard to internal controls adopted in procurement process, there are still low levels of clarity of procurement procedures that must be followed. It is therefore necessary for the management of the institute to develop measures to increase the clarity through effective documentation and communication of the same across all concerned departments or units. Two areas were noted in the store control systems that call for management's intervention: lack secure storage facilities, and slow pace of updating inventory records. The management should relook at their storage facilities and enhance their availability and security. This must also be accompanied by more emphasis on timely record keeping. In areas of internal distribution, movement of good in and out was not adequately monitored.

It is important therefore that the institute should emphasize more by holding those responsible to fully inspect at all times every product coming and being issued.

Thirdly, while presence and use of management policies in other areas of the institute, the core policies relating to inventory management should not be ignored. Individually, they contribute significantly to the overall effectiveness of internal control. Internal controls at the procurement stage acts as a gatekeeper in inventory management and must be given adequate consideration and recognition in the design and implementation of internal control systems. A store is always seen to be a vulnerable area to theft, pilferages and obsolescence and hence should not be ignored. While distribution may be seen to be subject to the procurement and stores

performance, it is critical that it is subject to controls systems adopted by the institute. Lastly, while the current systems are showing desired results, the concept of continuous improvement cannot be ignored. There are numerous areas that requires improvement to make the system more efficient and hence the management and employees of the institute must continuously seek new way of improving on their inventory control activities.

5.5 Suggestions for Further Research

The researcher recommends the following areas to be investigated further

i. The high levels of contribution from management policies to the effectiveness of internal controls used in safeguarding and securing inventories over emphasizes on its importance. There is need for a more focused study to be carried out to establish the specific attributes of the policies for the purposes of optimization.
ii. The role of suppliers was not within the scope of this study, it is important that a study should be carried out to assess their influence on the effectiveness of the internal control systems used by the organization.

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APPENDIX 1: INTRODUCTORY LETTER TO THE RESPONDENT

Dear Sir/Madam,

RE: Effectiveness of Internal Control Systems in Safeguarding Inventory

I am a postgraduate student in the Faculty of Commerce, Kabarak University pursuing master of Business Administration Degree. In order to be awarded the degree I am carrying out a research on, ***"Effectiveness of Internal Control Systems in Safeguarding Inventory: Case Study of Rift Valley Institute of Science and Technology."*** Kindly assist me in filling this questionnaire during your most convenient time. You are requested to note that this exercise is purely for academic purposes and will be treated with utmost privacy.

Thanking you in advance for your cooperation.

Yours Faithfully,

Stephen K Cheruiyot
(Researcher)

APPENDIX 2: QUESTIONNAIRE

SECTION A: PERSONAL INFORMATION

Instruction**:** Please tick ( ) as appropriate

1. Age : Below 20yrs ( ) 20-30yrs ( ) 31-40yrs ( ) 41-50yrs ( ) 50yrs-Above ( )

2. Gender : Male ( ) Female ( )

3. How long have you worked at RVIST?

Less than1 Year(s) ( ) 1-4 Years ( ) 5-9 Years ( ) 10-Above ( )

4. Which department do you work in?

Administration ( ) Tender committee ( ) Procurement ( ) Accounts ( )
Stores ( ) Catering ( ) HOD( ) Security House Keeping ( )
Others Specify)……..

5. Who is responsible for coordinating and communicating procurement processes in your section/department?

Head of department ( )
Head of section ( )
User ( )
Store- keeper ( )
Foreman ( )
Other (specify)……

6. Who is responsible for determining the goods or services required in your section/department?

Head of department ( )
Head of section ( )
User ( )
Store- keeper ( )
Foreman ( )
Other (specify) ……..

7. What procurement and stores controls are implemented to prevent theft, damage and other losses on inventories?

Strict inspection on entry & exit ( )
Proper record keeping ( )
Use of proper storage ( )
Secure custody of all storage keys ( )
Proper Handling procedures is used ( )
Segregation of duties for accountability ( )
Others(Specify)……..

8. How does your department/section ensure that no errors occur in inventory records

Accurate record keeping ( )
Continuous update of records ( )
Clear responsibility on record keeping ( )
Computerized record keeping ( )
Step approvals record system ( )
Use of inventory Index or coding ( )

9. Do your department/ section follow management control policies to safeguard and secure stock?

Yes ( ) No ( )

10. How do you rate the effectiveness of safeguarding inventory in your department/section?

Very effective ( ) Effective ( ) Undecided ( ) Ineffective ( ) Very Ineffective ( )

11. Rate the following aspects relating to effectiveness of security and safety of inventories in your department/section

Aspect score	**Very Effective** **5**	**Effective** **4**	**Undecided** **3**	**Ineffective** **2**	**Very Ineffective** **1**
Providing adequate security and Safety of inventories					
Facilitation of safe ordering and distribution of inventories					
Reduced inventory theft and losses					
Accountability of all inventories items					
Effective Management of inventory cost					

12. Please respond to the following statements relating to the different components of the internal inventory control systems at your departmental/section by ticking the appropriate.

Key: **SA: Strongly Agree A: Agree UD: Undecided D: Disagree SD: Strongly Disagree**

Procurement internal control systems **Score**	**SA** **5**	**A** **4**	**UD** **3**	**D** **2**	**SD** **1**
Our department relies on the Purchasing Department to coordinate procurement for goods and services					
Our department is fully responsible for determining the goods or services we need					
We have our own internal system to monitor what we need in every period					
All purchases within our department are fully centralized and controlled by assigned individuals					
There are clear and adequate written instructions on how to request for products/services required through the department					
There is adequate supervision and control against procurement of excess and unnecessary goods/services					
All the required documents are mandatory before a requisition is processed					
Everyone is aware of their responsibilities and limits in the requisition process					
All requisitioned products/services are directly used for only the intended purpose/need					
Stores control systems					
All received items are stored in secure storage facility/cabinets before they are used.					
There are procedures to ensure all inventories are adequately protected from damages, losses and theft					
Storage of inventory are well organized and monitored					
Every inventory item is labeled and clearly documented					
All items are counted when moving to and from storage					
Only responsible employees handles issues of storage and issuance from the storage area					
Stock distribution control systems					
All material released from storerooms only on the basis of requisitions which are approved by a responsible official of the department					
Only designated Individual(s) to monitor and approve the write-offs of obsolete and inactive inventories					

Inventories are only released when all necessary documentations have been provided and duly approved					
Every product issued is always accounted for by the user					
Only inventories requisitioned are issued to the specific user.					
There is Proper accounting for goods that are consigned in and out					
Management control policies					
All our purchasing functions are centralized as per the management policies					
Management control policies and procedures are always up to date, in writing, and clearly approved.					
All internal control policies and procedures are clearly stated and systematically communicated to all					
Managerial policies and procedures support internal inventory control systems					
The management policies supports detailed auditing and improvement of internal inventory control systems					
The management policies demand generation of all inventory related reports in all relevant levels					
Measure to improve internal control systems (Tick where applicable)					
Stock location systems should be streamlined					
Install security monitoring systems like CCTV and alarms					
Outsource security services like guarding and gate-keeping					
Use information communication technology (ICT)					
Adhere to the public procurement and disposal Act					

Thank you for your Participation

APPENDIX THREE: CRONBACH ALPHA RELIABILITY TEST

Reliability Statistics

Cronbach's Alpha	N of Items
.700	32

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PIC15a	126.86	80.215	.220	.694
PIC15b	126.64	79.572	.305	.688
PIC15c	126.91	79.806	.224	.693
PIC15d	126.73	82.042	.128	.700
PIC15e	126.76	91.910	-.347	.742
PIC15f	126.95	82.573	.085	.704
PIC15g	126.68	80.411	.196	.696
PIC15h	126.56	80.224	.314	.688
PIC15i	126.66	80.453	.298	.689
SCS16a	127.20	80.075	.224	.693
SCSS16b	126.83	79.026	.330	.686
SCS16c	126.90	80.020	.219	.694
SCS16d	126.61	83.712	.043	.705
SCS16e	126.85	81.936	.160	.697
SCS16f	126.95	81.129	.193	.695
SDCS17a	126.68	77.130	.515	.675
SDCS17b	126.84	78.076	.376	.682
SDCS17c	127.01	80.892	.223	.693
SDCS17d	126.76	80.329	.238	.692
SDCS17e	126.96	79.232	.269	.690
SDCS17f	126.80	76.785	.492	.675
MCP18a	126.92	85.760	-.077	.712
MCP18b	126.52	79.772	.351	.686
MCP18c	126.83	81.126	.254	.692
MCP18d	127.03	80.209	.271	.690
MCP18e	126.80	75.276	.556	.669
MCP18f	126.83	76.311	.486	.674
MIICS19a	126.89	77.670	.474	.678
MIICS19b	126.54	83.292	.114	.699
MIICS19c	126.55	84.704	-.022	.711
MIICS19d	126.44	83.925	.085	.700
MIICS19e	126.46	82.477	.159	.697