Effect of Internal Control Systems on Financial Performance of Public Universities in Kenya

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Abstract:
Background: *Most public Universities across the world have reported suboptimal financial performance compared to private universities. The poor financial performance can be attributed to financial management practices. The sound financial management practices require the institutions to have robust internal control systems. However, there are limited empirical research findings regarding the relationship between the internal control systems and financial performance in public universities in Kenya. The general objective of the study was to establish the effect of internal control systems on financial performance of public universities in Kenya. Specifically, the study specific objective was to investigate the effect of preventive controls on the financial performance of public universities in Kenya. The study was anchored on agency theory, stewardship theory, systems theory and attribution theory.*
Materials and Methods: *The study adopted a causal research design. The target population of respondents were the deputy vice chancellors finance, registrar finance and administration, ICT personnel, finance officers and internal auditors in the 37 public universities in Kenya. The target population was 185 respondents. The study worked with a sample of 34 public universities through stratified random sampling, and the other three were used for pilot testing. Primary data was collected from sample population using semi-structured questionnaires. Secondary data was collected through evaluation of reports, organizational journals, publications and review of information from the organizations website. Quantitative data was analysed using Statistical Package for Social Sciences (SPSS). All the questionnaires received were referenced and items in the questionnaire coded to facilitate data entry. After data cleaning which entailed checking for errors in entry, descriptive statistics and frequencies were estimated for the variable and information presented inform of tables, graphs and pie charts. Descriptive statistics and inferential statistics were used because they enabled the researcher to meaningfully describe distribution of scores or measurements using a few indices. Inferential data analysis was done using Pearson Correlation coefficient and regression analysis.*
Results: *It was established that a unit increase in preventive controls would cause an increase in financial performance by a factor of 0.322. This clearly showed that there was a positive relationship between the independent and dependent variable. P-value was less than 0.05, which shows that variables covered in the study on preventive controls were statistically significant to influence financial performance of public universities in Kenya.*
Conclusion: *Based on the findings, the study concluded that preventive controls had a positive and significant influence on financial performance of public universities in Kenya. The research findings of this study advocate for policy makers to formulate policies that promote public universities internal control systems which will benefit the policy makers in ensuring that the objective of vision 2030 of is achieved.*
Key Word*: Internal Control Systems, Preventive Controls, Financial Performance, Public Universities*

I. Introduction

In the business world today, organizations have developed a variety of processes and techniques designed to contribute to the planning and control functions. One of the most important and widely used of these processes is the internal control systems which involve the establishment of predetermined goals, the reporting of actual performance results and evaluation of performance in terms of the predetermined goals (Anderson, 2014). Internal Controls are systems of policies and procedures that safeguard assets, ensure accurate, reliable financial and accounting reporting, promote compliance with local laws and regulations, and achieve efficient operations. As a response to well-publicized accounting scandals, internal controls frameworks such as COSO

(Committee of sponsoring organizations) and SOX (Sarbanes Oxley Act) have been introduced requiring organizations to disclose internal controls over financial and accounting reporting (Katua, 2014).

Inherent in these internal controls are assumptions that help designers and auditors of internal controls. These include the concept of management responsibility that embraces the fact that the establishment and maintenance of a scheme of internal control is a management obligation (Muraleetharan, 2013). The internal control system should also offer realistic assurance that the objectives of internal control are achieved in a cost-effective manner. This means that no system of internal control is impeccable and the cost of achieving improved control should not overshadow its benefits. Internal controls should also achieve the objectives regardless of the data processing technique used. The control methods used to achieve these objectives will, however, vary with different types of technology (Stephen, 2017).

Every system of internal control has weaknesses on its effectiveness. These include the possibility of mistakes, personnel may circumvent the system through conspiracy and other means. Management is in a position to supersede control procedures by directly distorting transactions or by ordering a subordinate to do so and conditions may change over time so that existing controls may become weak. Internal control measures document transactions by creating an audit trail by limiting the actions of employees through requiring authorization, approval and verification of selected transactions. They segregate duties because certain job responsibilities are mutually incompatible and, if left unchecked, allow one person too much unsupervised access to organizations assets (Vian, 2012). These internal controls are classified as either preventive, detective, corrective or budgetary controls.

Prevention is the first line of defence in the control structure. Preventive controls are passive techniques designed to reduce the frequency of occurrence of undesirable events. Preventive controls force compliance with prescribed or desired actions and thus screen out deviant events. Preventing errors and fraud is far more cost-effective than detecting and correcting problems after they occur. The massive majority of unwanted events in public universities can be blocked at this first level. The source documents from students or suppliers can therefore prevent necessary data from being corrupted. However, not all problems can be predicted and prevented and some will escape the most comprehensive network of preventive controls (Ogundipe, Idowu, & Ogundipe, 2012).

The Global Perspective

Globalization refers to the integration of an organization's operations, processes and strategies into diverse cultures, products, services and ideas. Understanding the effects of globalization on internal controls can help managers to better equip their universities so that they have the capacity to make a global impact . Today, most of the developing countries are producing organizations that are competing successfully with multinational giants of the most developed countries (Snell, 2012). As a result of globalization and the various economic and political reforms implemented by the developed world, there is the emergence of an impressive array of institutions of higher learning that have enhanced their systems with proper internal controls to enhance performance necessitating more research in public universities particularly in the developing world.

Many of these institutions have performed so well within their national borders that they have ventured into the international arena; they have become international universities. However, the transformation is not generally accompanied by a change in the way these organizations manage their budgets and internal control systems employed to safeguard their resources. A major challenge which globalization therefore poses to these organizations is how to manage these systems effectively within the international setting (Pamela *et al*., 2010).

In this era of expanding globalization and increasing competition, institutions of higher learning worldwide have recognized that the internal control systems employed within their organization represent a major challenge in dealing with fraud that can lead to huge losses. It is within this climate that internal control systems have emerged as a key strategic issue. Recently, substantial analysis has focused on the association between the internal control systems employed and financial performance (Boudreau & Cascio, 2012). The theme across this work highlights the value of internal control systems as an unequivocal factor contributing to the financial performance of these institutions of higher learning.

Recently a number of financial scandals have been witnessed in universities in the international scene. In America, Harvard University and Yale University lost over $10 Million in 2018 through an admission scandal involving students and staff and donors who paid in monies to have their children considered for positions in these universities. The University of Toronto and the University of British Colombia equally faced fraud and financial misappropriation in the year 2016 to a tune of $ 16 million. In the year 2010, a number of high profile corporate accounting scandals resulted in demands for a greater emphasis on budgeting and tighter internal control systems. In July 2002, the United States Congress passed the Sarbanes-Oxley Act (SOX) in an effort to reduce public concern over a number of high profile corporate failures in the US (Kennedy, Tennet, & Gibson, 2016).

Regional Perspective

In today's fast changing and tough global environment, universities are finding it difficult to function at optimum levels under the circumstances. Financial performance is now considered a natural process for effective performance of universities and other organizations (Armstrong, 2014). Universities in the African region are striving hard to induce internal control measures by using different means and methods to enhance the financial performance in the face of adverse competition. It is not surprising that internal controls are becoming a fundamental activity for the success of these universities. The objective of internal control systems on financial performance is to improve the capacity of these universities to increase their efficiency for achieving their set strategic objectives.

Chancellors and Councils of Universities in Africa are focusing on improving the financial performance of their institutions, but it's becoming more difficult to enhance the financial performance in the face of heightened risk and fraud in these institutions that they have to deal with. Development and implementation of proper internal control systems has become top agenda for these leaders in most African states. Many upcoming universities in most African countries have lost their resources through fraud and outright theft by employees for not having proper internal control systems that could possibly prevent such losses (Garavan & Heraty, 2016).

In South Africa, cases of accounting scandals have been recorded in Monash University where an amount of 38 million dollars' worth was lost in 2010 through misappropriation or misuse. These scandals emphasize the need to evaluate, scrutinize, and formulate systems of checks and balances to guide corporate executives in decision-making. These executives are legally and morally obliged to produce honest, reliable, accurate and informative corporate financial reports periodically (Hayes, Dassen, Schilder, & Wallage, 2009).

Kenyan Perspective

Most organizations world over are continuously realigning their internal policies in order to enhance their internal control systems, and universities in Kenya are slowly aligning themselves to embrace internal controls to enhance their financial performance. The internal control mechanism of organizations is key to fostering the efficiency and performance of universities. The economic downturn being experienced in the world is sparing nobody and has thus compelled organizations executives and managers to employ austerity and prudent measures that will pull down operational costs. These measures include enhancing budgets and incorporating internal control measures geared towards improving the financial performance of institutions of higher learning (Terziovski, 2010).

Universities offer education, research, grants and academic awards to students at various levels of Postgraduate, Degree, Diploma, and Certificate in a variety of subjects as guided by their statutes. In Kenya, public universities are created under the Act of Parliament to conduct research in different fields with the help of qualified staff (Onsongo, 2007). The success of an institution is measured by its ability to conduct outreach programs, extension services and research. Public universities, like other government institutions and parastatals, operate within a controlled government environment and as such are environment dependent. Public universities have to adapt to change to survive and compete effectively due to economic instability, liberation, and new government policies especially in this era of reduced capitation from the state.

The scandals of recent years emphasize the need to evaluate, scrutinize and reformulate control systems of checks and balances in order to guide corporate executives and persons in decision-making. Therefore, as much as an organization would like to implement appropriately derived control measures; it must also consider the amount of money involved in implementing such measures. The embezzlement of funds from public institutions or organizations, particularly in essential services and public institutions, is becoming more common. Such scandals have raised concerns about their internal control systems. Despite the lack of any reported financial scandals, there is a growing concern as to whether they experience the same deficiencies as other public regulatory institutions do. Recent reports on the mismanagement of funds in public universities in Kenya by the media coupled with exposure of the complex web of rot and poor control systems which was highlighted in the recent past by the work of an investigative journalist raises serious questions.

Statement of the Problem

The higher education sector globally has undergone transformation of unprecedented magnitude in the last half-century. In Africa, the higher education sector has witnessed some remarkable growth during the same period especially in public universities. In Kenya, the demand for university education has continued to expand as indicated by the rapid increase in the gross enrolment rates in public universities (Akalu, 2018). This expansion in university education has, however, been accompanied by several challenges as demonstrated in some key indicators of university financial performance due to poor internal control systems.

There is rising concern about financial performance in public universities in Kenya and the concern has become a national issue especially at this time that the government has reduced its financial support of these

public institutions. Internal control systems are set up by organizations to aid them in meeting their objectives, ensure generation of reliable financial reports, increase organizational compliance to financial regulations as well as prevent loss of organizational resources (Emasu, 2010). Active involvement and proper financial management of public universities by their leaders through the introduction of internal controls is likely to contribute positively to financial performance of these institutions. Despite the documented benefits of adopting such systems, it remains unclear if such systems significantly affect financial performance of public universities in Kenya.

Evidence from empirical literature by Ndiwa (2014) and Ndifon (2014) found that organizational internal controls and financial performance is an understudied area. Their studies identified low liquidity ratios, untimely financial reporting, low accountability, frauds and mismanagement of funds in organizations that affected performance. Mohammed (2003) research on the effect of the internal controls of Ethiopian Airlines in Nairobi found that internal controls put in place did affect performance of the airline.

General Objective
The general objective of the study was to investigate the effect of internal control systems on financial performance of public universities in Kenya
Specific Objective
Specific Objectives of the study was to investigate the effect of preventive controls on financial performance of public universities in Kenya.
Research Hypothesis
H_{01}: There is no statistically significant effect of preventive controls on the financial performance of public universities in Kenya.
The chapter addresses the theoretical literature as well as empirical literature, as well as a summary and critique of literature reviewed with the aim of bringing out the research gaps to be addressed by the study. A conceptual framework was also provided to clearly show the relationships among the research variables.

II. Literature Review
A theory is a set of statements or principles devised to explain a group of facts or phenomena, especially one that has been repeatedly tested or is widely accepted and can be used to make predictions about a natural phenomenon. This study focused on two theories to explain the effect of independent variable on the dependent variable. These theories were; the Agency theory and the Stewardship theory.

Theoretical Review
Agency theory was developed in 1976 by Jensen and Meckling. This theory is an agency relationship as a contract under which one or more persons (the principal) engages another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent. Agency theory analyses the relationship between two parties: investors and managers. The agent (manager) undertakes to perform certain duties for the principal (investors) and the principal undertakes to reward the agent. According to the agency theory, a firm consists of a nexus of contracts between the owners of economic resources (the principals) and managers (the agents) who are charged with using and controlling those resources. The theory posits that agents have more information than principals and that this information asymmetry adversely affects the principals' ability to monitor whether or not their interests are being properly served by agents (Jensen & Meckling, 1976).

As such, the theory describes firms as necessary structures to maintain contracts, and through firms, it is possible to exercise control which minimizes opportunistic behavior of agents (Mwangi, 2012). According to the theory, in order to harmonize the interests of the agent and the principal, a comprehensive contract is written to address the interest of both the agent and the principal. The agent-principal relationship is strengthened more by the principal employing an expert and systems in form of auditors and internal control systems to monitor the agent. Further the theory recognizes that any incomplete information about the relationship, interests or work performance of the agent described could be adverse and a moral hazard. Moral hazard and adverse selection impact on the output of the agent in two ways; not possessing the requisite knowledge about what should be done and not doing exactly what the agent is appointed to do.

The agency theory therefore works on the assumption that principals and agents act rationally and use contracting to maximize their wealth (Jensen & Meckling, 1976). This theory was applicable to this study because internal controls are one of many mechanisms used in business to address the agency problem by reducing agency costs that affects the overall performance of the relationship as well as the benefits of the principal. Internal control enhances the provision of additional information to the principal (shareholder) about the behavior of the agent (management) and reduces information asymmetry and lowers investor risk and low revenue. This theory lays more emphasis to the preventive controls objectives in the study.

The Stewardship theory has its roots from psychology and sociology and is defined as "a person who protects and maximizes shareholders' wealth through firm performance, because by so doing, the steward's utility functions are maximized". Unlike agency theory, stewardship theory stresses not on the perspective of individualism but rather on the role of top management being as stewards, integrating their goals as part of the organization. The stewardship perspective suggests that stewards are satisfied and motivated when organizational success is attained.

Meckling and Jensen (1994) further state that the cost incurred to curb agency problems by reducing information asymmetries and accompanying moral hazards is less when owners directly participate in the management of the firm as there is a natural alignment of owner managers' interest with growth opportunities and risk. It follows from the above that stewardship theory unlike agency theory is a complete contrast and does not emphasize on the need to incur monitoring or agency cost which includes establishing an internal audit function.

The stewardship theory was therefore relevant in this study and supported the study by the fact that managers of institutions of higher learning act as stewards of stakeholders, suppliers, creditors, students and employees of these institutions, and therefore helped in managing and ensuring good financial health of the institution. This theory stressed on financial performance of an organization as envisaged in the objective of financial performance in the study.

Empirical Review of Preventive Controls and Financial Performance

Preventive controls are designed to prevent errors, inaccuracy or fraud before it occurs. Detective controls are intended to uncover the existence of errors, inaccuracies or fraud that has already occurred. Preventive and detective controls are often required in combination to provide sufficient protection. Preventive controls attempt to deter or prevent undesirable events from occurring and are proactive controls that help to prevent a loss based on the concept of separating duties (Dixit, 2013).

In accounting, they include prohibiting the same person from conducting related transactions such as initiating and recording transactions; making purchases and approving payments; ordering and accepting inventory; approving vendors and making payments; receiving bills and approving payments; and authorizing returns and issuing refunds. Payroll preparation and distribution duties and approving, writing and signing cheques should also be done by different people. Preventive controls are essential since they are proactive and emphasize quality.

Abdi (2015) investigated how internal controls impacted on financial performance among private banks in Mogadishu. The demographic profile of the respondents was age, gender, qualification and experience. The main objectives were to assess the functionality of internal control systems in Mogadishu private banks and to examine financial performance of private banks in Mogadishu. The study was based on 33 target population especially Accountants, finance directors, chief cashiers, internal auditors and managers of private banks in Mogadishu Descriptive analysis was used. It administers questionnaire as a research instrument. The findings of this study reveal that majority of the private banks in Mogadishu have enough cash to meet its intended goals. Also there is a clear separation of duties. This study suggests that the internal auditors perform their duties fast, efficient and reliable.
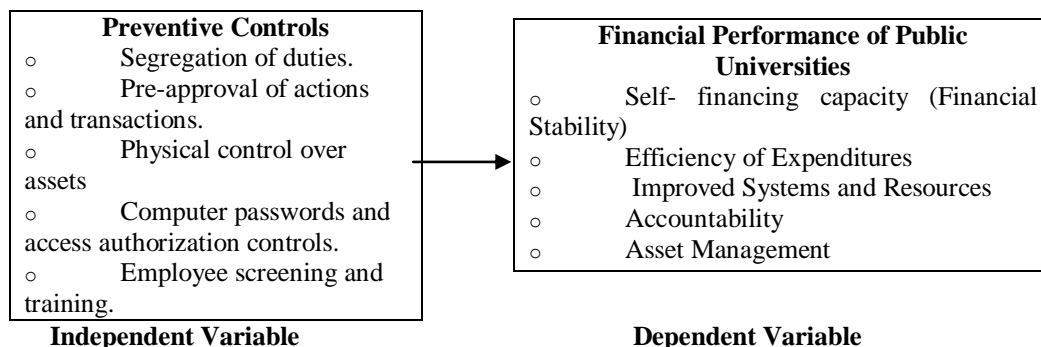
Mwangi (2015) studied how the practices of managing cash influenced financial performance. The study was done in the SME context, in Ghana. The design adopted was descriptive. A total of 1000 owners of SMEs were targeted. Through stratification of this population and randomly selecting respondents, 300 SMEs were established as the study sample size. The findings indicated that cash management practices positively and significantly influenced financial performance.

Njaramba and Ngugi (2014) investigated whether growth of small firms in Kenya is affected by implementation of internal controls. The sought to establish the extent to which internal control factors such as technology, entrepreneurial, management skills and human capital practices influence SME growth rate in the errand service business in Nairobi County. Descriptive survey was utilized with a sample size of 137 firms being selected using stratified sampling methodology. To test the hypothetical relationship between explanatory and response variables, models of multiple regression were used. The research findings showed that the internal factors namely free enterprise skills, managerial expertise, human capital practice and technical know-how had a direct linkage with growth rate of SMEs and the association was significant.

Magara (2013) sought to find out the effect of internal controls on the financial performance of deposit taking Savings and Credit Cooperative Societies (SACCOs) in Kenya. The independent variables for the study were control environment, risk assessment, control activities and monitoring mechanisms while the dependent variable was financial performance. The findings of this study conducted on 122 deposit taking SACCOs in Kenya relied on both primary and secondary data which was obtained from the annual reports of the SACCOs. A multiple regression model was adopted to check the form of relationship between the dependent and the independent variables. The regression analysis conducted established that the independent variables had a

positive strong correlation with the dependent variable. Each of the independent variables contributed positively to the financial performance of SACCOs in Kenya. It was also evident from the study that without the presence of strong internal controls within these institutions, the SACCOs would perform poorly with the risk of eventual collapse as a result of poor financial performance.

Conceptual Framework

Preventive Controls	Financial Performance of Public Universities
o Segregation of duties. o Pre-approval of actions and transactions. o Physical control over assets o Computer passwords and access authorization controls. o Employee screening and training.	o Self- financing capacity (Financial Stability) o Efficiency of Expenditures o Improved Systems and Resources o Accountability o Asset Management
Independent Variable	**Dependent Variable**

Figure 1.0: Conceptual Framework

III. Material And Methods

This area provides a description of the research design and methodology that was employed in the study. It looks at the various sources of data for the study, sampling design and its procedures. It also includes the methods that were used in data collection, and the instruments used in data collection.

Research Philosophy: Positivism
Study Design: Causal Research Design
Study Location: This was confined to the Public Universities operating in Kenya
Study Duration: 2014 to 2018
Sample size: 34 Public Universities
Sample size calculation: To obtain the desired sample size for the study with the population of 34 public universities, Yamane Taro (1967) formula was used as shown;

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

Where   n is the sample size
N is the population (37)
e is the sampling error at 0.05

It was assumed that all the attributes measured were normally distributed or nearly so and the confidence level is 95% and the estimated variation of response is 50%. The precision level was taken at 5%.

Therefore;

$$n = \frac{37}{1+37(0.05^2)}$$

Sample size was therefore 34 public universities in Kenya.

Subjects & selection method: The target population for this study consisted of all public universities operating in Kenya as at November 2017. According to CUE (2017), there are 31 public universities, 6 public university constituent colleges, 18 private universities, and 5 private university constituent colleges in Kenya as at November 2017. The population of the study was composed of all the 37 public universities operating in Kenya, and focused on the deputy vice chancellor finance, registrar finance and administration, ICT personnel, finance officers and internal auditors. The study focused on only one respondent from each category on every public university, and this made a total population of 185 respondents as shown in table 1 below.

Table 1. Total Population

Position		Number
Deputy Vice Chancellor	Finance	37
Registrars	Administration and Finance	37
ICT personnel		37
Finance officers		37
Internal auditors		37
Total		**185**

Procedure methodology

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes (Cooper & Schindler, 2014). Kumar (2011) defined data collection techniques as the tools used to collect information in research or the methods employed to collect research data. This study collected both primary and secondary data and used a research questionnaire as the main tool of data collection. Primary data was collected by use of structured (closed-ended) and unstructured (open-ended) questionnaires that captured the various variables of the study.

Primary data was data collected afresh and for the first time and thus happened to be original in character (Cooper & Schindler, 2013). Kumar (2011) describes primary data as those items that are original to the problem under study. The questionnaire was designed to address the specific objectives of the study and to test the hypothesis. It is a data collection tool used to record research data and contains a list of questions directed to particular respondents and a definite purpose which is to meet a set of objectives as per the study or research.

A questionnaire was designed by the researcher with a purpose of communicating to the respondents what was intended, and to elicit desired response in terms of empirical data from the respondents in order to achieve the research objectives. It was a means of eliciting the feelings, beliefs, experiences, perceptions, or attitudes of some sample of individuals (Cooper & Schindler, 2014).

Pilot Test

In order to test to improve the validity of the instruments, the researcher first pre-tested the questionnaire in a pilot study. The response from the pilot study made the researcher make some changes in the questionnaire in order to enhance its validity. The results obtained from the questions were discussed again with the respondents in the pilot study. Piloting is important because it helps the researcher to identify misunderstandings, ambiguities or inadequate items (Kumar, 2011). Each respondent was given a questionnaire and was asked to answer all the questions.

The questionnaire was piloted on five public University in Kenya in order to establish whether the questions there in measure the expected theorized variables in the conceptual framework. This was generally supported by Mugenda and Mugenda (2013) who indicated that successful pilot study uses 1% to 10% of the actual sample size. These five universities used in the pilot study were not included in the final study.

Validity and Reliability of the Research Instrument

The validity test relied on content validity, where both the questionnaire and the study model were distributed to a number of employees of the public universities selected to be evaluated. Based on their valuable feedback, adjustments to the questionnaire were made (Mugenda & Mugenda, 2013). The study focused on content validity and discriminant validity.

The Cronbach alpha coefficient was used to define reliability of the instrument in this study since it is a good indicator of unidimensionality and internal consistency of sample items. A variable is acceptable if it attains the recommended value of 0.7 which is used as a cut-off point of reliabilities.

Statistical analysis

Descriptive statistics such as mean scores, standard deviations, percentages, and frequency distribution were computed to describe the characteristics of the variables of interest in the study in order to explore the underlying features in the relationship between dependent and independent variables. Descriptive statistics provided the basic features of the data collected on the variables under study and provided the impetus for conducting further analysis on the data (Mugenda & Mugenda, 2013).

Quantitative data was analysed using Statistical Package for Social Sciences (SPSS) Version 22. All the questionnaires received were referenced and items in the questionnaire coded to facilitate data entry. Confirmatory Factor analysis (CFA) was conducted to make a prediction about the dependent variable based on its covariance with all the concerned independent variables. According to Field (2005), factor analysis is an exploratory tool used to help the researcher make decisions on whether the variables under investigation explain the dependent variable.

The Analysis of Variance (ANOVA) was used to test for the goodness of fit of the models and significance of the relationship between the dependent and independent variable based on a 5 % level of significance. The regression model generally assumed the following equation;

$Y = \beta_0 + \beta_1 X_1 + \varepsilon$ where: -
Y = represents the dependent variable, financial performance
β_0 = constant

X_1 = Preventive Controls
ε = Error Term

IV. Result

Pilot Test and Reliability

A pilot study was conducted before the main study to check the problem areas and possible confusion that may be associated with the survey. The pilot study was also to standardize the measuring instrument and improve its the validity. First, the instrument was discussed with supervisors and then pre-tested with 5 senior employees from 5 different universities. This is generally supported by Mugenda and Mugenda (2013) who indicate that successful pilot study uses 1% to 10% of the actual sample size.

To measure the reliability of the data collection instrument, Cronbach alpha was calculated for Likert scale questions of the questionnaire. Internal consistency was relevant to this study because the instruments were measuring the same thing. Cronbach's alpha was used to measure internal consistency. The cronbach's alpha is a statistic calculated from the pairwise correlations between items, and the results range between zero and one (Mugenda & Mugenda, 2013). Cronbach Alpha statistic for this study was 0.842 and was considered adequate for this study.

Study Response Rate

The study targeted a sample size of 185 respondents of which 160 filled in and returned the questionnaires making a response rate of 86.4 % as depicted by the frequency distribution table 2 below. This response rate was satisfactory to make inferences and conclusions for this study. According to Mugenda & Mugenda (2013), a response rate of 50% is considered adequate for analysis and reporting, 60% is rated good while any response rate over 70% is considered to be an excellent response rate.

Table 2: Study's Response Rate Frequencies

Response	Frequency	Percent
Successful	160	86.4
Unsuccessful	25	13.6
Total	185	100

Distribution of the Respondents by Gender

The respondents were asked to state their gender. The study established that majority of the respondents as shown by the figure below, 52.6% were male whereas 47.4% of the respondents were female. This implies that respondents were well distributed in terms of their gender and thus the findings of this study did not suffer from gender biasness.

Table 3: Distribution of Respondents by Gender

Gender	Frequency	Percentage
Male	85	52.6%
Female	75	47.4%
Total	160	100%

Distribution of Respondents by Education Level

The respondents were asked to indicate their level of education. The study established that, 32.1% of the respondents were post graduate holders, 44.9% of the respondents were degree holders, 21.8% of the respondents held diploma certificates whereas 1.2% of the respondents held secondary certificates. This was highly expected since the respondents were at management level where the skills knowledge and competencies are expected to be high. This depicted that the respondents were well educated and informed and therefore furnished this study with better information which added value to the objectives of the study.
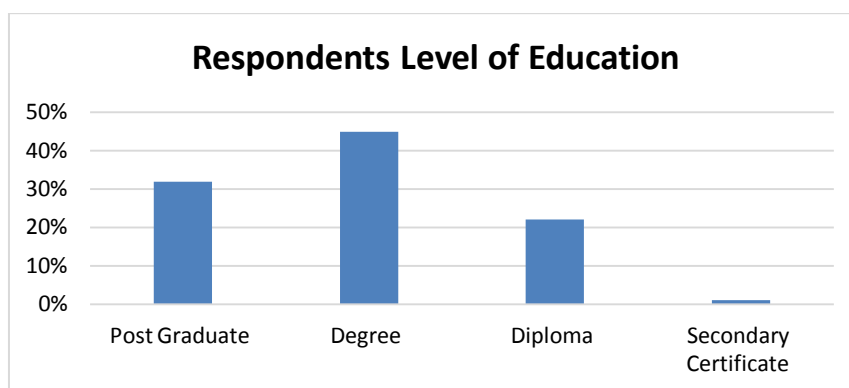
Figure 1: Level of Education

Descriptive Results for Preventive Controls

The specific objective of the study was to assess the effects of preventive controls on financial performance of public universities in Kenya. Respondents' opinions on the influence of preventive controls on the financial performance in public universities in Kenya are given in Table 4 below.

Table 4: Influence of Preventive Controls on Financial Performance

Statement	SA(%)	A(%)	N(%)	D(%)	SD(%)	Mean	Std. Dev
In my organization, there is segregation of duties.	34.1	47.7	15.0	3.2	0	4.13	0.78
In my organization there is the pre-approval of actions and transactions by the supervisors.	37.3	45.5	14.1	2.7	0.4	4.16	0.80
The supervisors have physical control over sensitive assets such as locks.	34.4	52.7	10.0	2.3	0.5	4.14	0.78
My organization values computer passwords and access authorization and exercises control over them.	40.8	42.3	10.1	3.8	3.0	4.25	0.74
Controls are in place to exclude incurring expenditure in excess allocated funds	35.5	20.5	36.0	8.0	0	4.16	0.80
In my organization there is employee screening to ensure that employees implement the accounting and financial management system in place efficiently.	40.8	29.3	5.2	15.3	9.4	3.27	1.18
I like the way my organization develops its organizational culture in order to inform its preventive controls.	32.9	45.5	17.1	4.5	0	4.06	0.85
Our security system identifies and safeguard organizational Assets.	39.2	23.0	18.9	12.1	6.8	3.28	1.17
It is impossible for one staff to have access to all valuable information without the consent of senior staff.	29.6	46.8	16.7	6.9	0	3.99	0.86
Our organization has a well-developed Chart of Accounts.	35.6	50.7	11.4	2.3	0	4.20	0.73
The reporting system on organizational structures spells out all the responsibilities of each section/unit in the organization.	33.6	34.6	20.5	10.6	0.7	4.22	0.67
Management has identified individuals who are responsible for coordinating the various activities within the entity.	32.6	53.2	13.3	0.9	0	4.17	0.68
Every employees work checks on the others work.	17.0	47.7	21.5	13.8	0	4.08	0.86
Staff are trained to implement the accounting and financial management system to prevent fraud.	31.8	52.3	15.9	0	0	4.16	0.67
Departments have budget reviews where actual expenditure is compared with budgeted expenditure and explanations for the variances given.	18.9	28.7	35.8	12.5	4.1	3.46	1.06

All employees understand the concept and importance of internal controls including the division of responsibility	37.8	40.8	19.2	1.3	0.9	4.13	0.85
The university has appropriate entity policies regarding such matters as acceptable business practices in the areas of financial performance that are always adequately communicated.	38.0	45.6	15.5	0.9	0	4.22	0.72
My organization has a system in place that monitors and controls all the assets of the organization.	19.3	37.4	35.1	5.1	3.1	3.64	0.96
New employees are always screened to ensure they have the right qualifications and don't have integrity issues.	41.3	45.7	11.6	1.4	0	4.27	0.72
Average	30.44	43.37	19.34	2.84	4.01	4.048	0.797

Findings revealed that majority of the respondents with 73.81 were in agreement that preventive controls help organizations with preventing loss through instances such as fraud, 20.34 were neutral to the statement, whereas 6.85 were not in agreement with the statement. These results were in agreement with those of Dixit (2013) who asserted that Preventive controls are designed to prevent errors, inaccuracy or fraud before it occurs. Detective controls are intended to uncover the existence of errors, inaccuracies or fraud that has already occurred. Preventive controls are often required in combination to provide sufficient protection and attempt to deter or prevent undesirable events from occurring, and are proactive controls that help to prevent a loss based on the concept of separating duties.

Quantitative Analysis for Preventive Controls

The study sought to investigate the relationship between preventive controls and financial performance of public universities in Kenya, and the results were presented in table 5 below;

Table 5: Relationship between preventive controls and financial performance

Variable		Preventive Controls	Financial Performance
Preventive Controls	Pearson Correlation Sig.(2-tailed)	1	
Financial Performance	Pearson Correlation Sig.(2-tailed)	0.573 0.000	1

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

The table above displays results of the correlation test analysis between the dependent variable and the independent variable which indicates that financial performance was positively correlated with preventive controls by a Pearson's product moment correlation factor of 0.573. This reveals that any positive change in preventive controls would translate into increase in financial performance.

Table 6 Model Summary for Preventive Controls

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.886[a]	.809	.768	0.883

a. Predictors: (Constant), Preventive Controls

Regression analysis was conducted to empirically determine whether preventive controls were significant in determining financial performance in organizations. Regression results in table 6 indicate the goodness of fit for the regression between preventive controls and financial performance was strong. An R squared of 0.809 indicates that 80.9% of the variances in preventive controls by organizations were explained by the variances in financial performance. The correlation coefficient of 88.6% indicates that the combined effect of the predictor variables had a strong and positive correlation with financial performance.

Table 7 ANOVA for Preventive Controls

Indicator	Sum of Squares	Mean Square	F	Sig.
Regression	5.178	5.178	13.278	.000
Residual	36.656	0.390		

Total	41.833

Findings in Table 7 show the F statistic. The F value indicates whether the set of independent variables as a whole contribute to the variance in the dependent variable. An F value of 13.278 was found. Findings in Table 4.7 further show that the F value was significant (p=0.000) at 95%. This means that preventive controls were significant in predicting financial performance in public universities in Kenya.

Table 8 Regression Coefficient for Preventive Controls

Variable	Beta	Std. Error	t	Sig.
Constant	2.890	.39	7.411	0.000
Preventive controls	0.322	.88	3.644	0.000

Table 8 displays the regression coefficients of the preventive controls. From the above regression model shown in table 4.8, preventive controls and financial performance to a constant zero, preventive controls would be 2.890. It was established that a unit increase in preventive controls would cause an increase in financial performance by a factor of 0.322. This clearly shows that there is a positive relationship between the independent and dependent variable. P-value was less than 0.05, which shows that variables covered in the study on preventive controls were statistically significant to influence financial performance of public universities in Kenya. The results revealed that preventive controls are statistically significant in explaining the financial performance of public universities in Kenya.

The study concluded that since preventive controls significantly affected financial performance aspects, it was good enough to fail to accept the null hypothesis which states that; H_{01}: *There is no statistically significant effect of preventive controls on the financial performance of public universities in Kenya*. The hypothesis was therefore rejected.

Descriptive Results for Financial Performance

The study sought information on financial performance of public universities in Kenya. Respondents' opinions on financial performance in public universities in Kenya are given in Table 9 below.

Table 9: Descriptive Results for Financial Performance

Statement	SA(%)	A(%)	N(%)	D(%)	SD(%)	Mean	Std. Dev
Internal control systems focus on improving the universities financial performance	41.6	50.2	6.4	1.0	0.8	4.29	0.73
Adherence to set regulations on internal control systems positively contributes to financial performance of the university.	42.5	49.0	5.2	2.9	0.4	4.23	0.74
Internal control systems improve the company's efficiency and effectiveness that in turn improves financial performance.	47.5	41.9	8.7	1.5	0.4	3.33	0.76
Internal control systems allow the University to have self-financing capability, hence financial stability.	29.6	43.3	9.8	12.2	5.1	3.22	0.71
Good internal control systems bring about improved systems and resources.	32.6	51.5	8.7	6.3	0.9	4.12	0.81
Efficiency of expenditures is realized through good internal control systems.	29.4	58.3	4.1	5.8	2.4	4.15	0.77
Internal controls are responsible for proper asset management.	35.3	48.7	9.7	4.4	1.9	3.11	0.71
The university's asset base has greatly increased over time.	40.8	47.2	7.2	2.8	2.0	4.29	0.76
The university is always able to meet its current obligations in a timely manner.	45.3	43.7	9.1	1.4	0.5	4.30	0.77
Financial reporting is always done on a timely basis.	39.9	47.9	8.3	2.9	1.0	3.24	0.84
The university has the ability to internally fund business ventures instead of using external sources.	42.2	35.2	10.8	9.8	2.0	3.20	0.86
There has been improvement in return on assets over the years	44.7	45.5	7.6	2.2	0.0	3.27	0.77
The university has enough cash to meet its obligations effectively (as and when they fall due).	35.6	31.3	12.8	10.2	10.1	3.10	0.87
Cost reduction as a measure has a direct effect on the financial performance of the university.	32.4	55.3	5.1	5.8	1.4	4.13	0.77
Proper internal control systems in the university lead to Improved Systems and Resources.	35.5	53.2	6.1	4.9	0.3	4.12	0.78
Average	38.3	46.8	8.0	4.9	2.0	3.74	0.77

The study sought to investigate whether Internal control systems focus on improving the universities financial performance. Findings revealed that majority of the respondents with 91.8% (mean 4.29, std. dev 0.73) were in agreement with the statement, 6.4% of the respondents were neutral to the statement, whereas 1.8% of the respondents were not in agreement with the statement that internal control systems focused on improving the universities financial performance.

Quantitative Analysis for Financial Performance
Pearson product moment correlation was conducted to determine the strength of relationship between the study variables provided in Table 10 below.

Table 10: Correlation Between Study Variables

Variables		Financial Performance	Preventive Controls
Financial Performance	Pearson Correlation	1	
	Sig. (2tailed)		
	N	160	
Preventive Controls	Pearson Correlation	.618**	1
	Sig. (2tailed)	.000	
	N	160	160

From the findings on the correlation analysis between financial performance and internal control systems, the study found a positive significant correlation between preventive controls and financial performance as shown by correlation coefficient of 0.618.

Combined Effect of Internal Control Systems on Financial Performance

Table 11: Model Summary for Internal Control Systems

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.873a	0.72	0.52	0.896

The R value of 0.873 means that there was a strong correlation between independent variables (preventive controls, detective controls, corrective controls, budgetary controls, regulations and policies) and the dependent variable (financial performance) of public universities in Kenya. The R^2 value of 0.72 means that 72% of performance can be explained by public universities preventive controls, detective controls, corrective controls, budgetary controls, regulations and policies.

Table 12: ANOVA for Internal Control Systems

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.345	5	2.836	23.445	0.010
	Residual	28.331	90	0.823		
	Total	38.676	95			

The findings showed that the F value of 23.445 was significant (p=0.010) at 95% confidence level. This meant that the model was significant for predicting performance of public universities in Kenya.

Table 13: Regression Coefficients for Internal Control Systems

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.345	0.431		5.439	0.000
	Preventive Controls	0.602	0.065	0.219	2.777	0.006

The coefficients Table 13 provides the necessary information to predict performance from the internal determinants of preventive controls in public universities. Findings showed that preventive controls were statistically significant as their p-values were less than 0.05. This means that the variables were important predictors of financial performance. These findings concurred with those of Jayamaha (2014) who asserted that the internal controls process is one of the most productive and useful management accounting techniques that organizations use to enhance performance in institutions of higher learning.

According to Silva and Jayamaha (2014), there exists a strong relationship between the internal control systems employed and the financial performance of organizations, and public universities are no exception. These findings also concurred with those of Chege (2013) who established a positive influence of controls on the financial performance of public universities in Kenya.

The New model therefore is;
$$Y = 2.345 + 0.602X_1$$
The new model indicated that without the internal control systems, the financial performance of public universities in Kenya would be 2.345. The findings also showed that a unit change in preventive controls would influence the financial performance of public universities in Kenya by 0.602.

V. Discussion
Summary of Findings
Effects of Preventive Controls on the Financial Performance of Public Universities in Kenya

The specific objective sought to determine the effects of preventive controls on the financial performance of public universities in Kenya. Regression analysis was conducted to empirically determine whether preventive controls were significant in determining financial performance in organizations. Regression results indicated the goodness of fit for the regression between preventive controls and financial performance was strong. An R squared of 0.809 indicated that 80.9% of the variances in preventive controls by organizations were explained by the variances in financial performance. The correlation coefficient of 88.6% indicated that the combined effect of the predictor variables had a strong and positive correlation with financial performance. An F value of 13.278 was found that was significant (p=0.000) at 95%. This meant that preventive controls were significant in predicting financial performance in public universities in Kenya. preventive controls and financial performance to a constant zero, preventive controls would be 2.890.

It was established that a unit increase in preventive controls would cause an increase in financial performance by a factor of 0.322. This clearly showed that there was a positive relationship between the independent and dependent variable. P-value was less than 0.05, which shows that variables covered in the study on preventive controls were statistically significant to influence financial performance of public universities in Kenya. The results revealed that preventive controls were statistically significant in explaining the financial performance of public universities in Kenya. Based on these findings, the null hypothesis which stated; *There is no statistically significant effect of preventive controls on the financial performance of public universities in Kenya,* was therefore rejected.

VI. Conclusion

Based on the findings, the study concluded that preventive controls had a positive and significant influence on financial performance of public universities in Kenya. Various aspects of preventive controls such as segregation of duties, pre-approval of actions and transactions by the supervisors, physical control over sensitive assets such as locks, computer passwords and access authorization and, employee screening to ensure that employees implement the accounting and financial management system in place efficiently, having a security system that identifies and safeguard organizational Assets, and having a well-developed Chart of Accounts, all had a direct influence on financial performance.

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