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INFLUENCE OF INTERNAL AUDIT SYSTEM, INFORMATION COMMUNICATION TECHNOLOGY AND MANAGEMENT EFFICIENCY ON PRUDENT FINANCIAL MANAGEMENT OF TECHNICAL VOCATIONAL EDUCATION AND TRAINING INSTITUTIONS IN THE WESTERN REGION, KENYA

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INFLUENCE OF INTERNAL AUDIT SYSTEM, INFORMATION COMMUNICATION TECHNOLOGY AND MANAGEMENT EFFICIENCY ON PRUDENT FINANCIAL MANAGEMENT OF TECHNICAL VOCATIONAL EDUCATION AND TRAINING INSTITUTIONS IN THE WESTERN REGION, KENYA

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ABSTRACT

This study investigated micro economic determinants of prudent financial management of TVET institutions in the Western region, Kenya. The study adopted descriptive survey design and targeted 207 respondents from 23 TVET institutions in the western region, Kenya. The study used structured questionnaire as its main research instrument. The data collected was coded for accuracy of information at the end of every field data collection day and stored manually and electronically. Computer software- Statistical Package for Social Sciences (SPSS) version 24 was used in data analysis. Both descriptive and inferential analysis revealed that all conceptualized independent variables significantly influenced prudent financial management in TVET institutions in western region, Kenya, that is; Internal audit system; $\beta = 0.407$ at $p<0.01$;; Management efficiency; $\beta = 0.417$ at $p<0.01$; Information communication technology; $\beta = 0.085$ at $p<0.01$ and from the model summary, R^2= 0. 610, which is a good model; because the model significantly explained 61.0% of the variations in prudent financial management of TVET institutions in the western region, Kenya. The study concluded that secure, updated and customized integrated financial management information systems plus independent audit systems can impact positively on sound financial management practices in TVET institutions in Kenya. The study recommended that there should be secure and updated financial information systems to monitor real-time financial transaction in all TVET institutions so as to effect prudent financial management in all TVET institutions in Kenya.

Key Words: Internal Audit System, Management Efficiency, Information Communication Technology, Prudent Financial Management, TVET

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INTRODUCTION

Prudent financial management is one of management functional areas which are core to success of any organization. Inefficient financial management often led Business Enterprises to serious problems (Deresse & Prabhakara, 2012). Financial management refers to the process of managing financial resources, including management decisions concerning accounting and financial reporting, forecasting, and budgeting, as well as capital budgeting decisions, which include decisions whether to lease or buy, and whether to issue debt or equity (Lightbody, 2000). Financial management framework comprises the processes, systems, internal controls and practices relating to the way the department manages its revenues, expenses, assets, liabilities and contingencies. It also includes its systems for managing risk and monitoring its financial and operational performance, including budget performance and reporting on these functions, both internally and externally.

Further, Gitman (2007) defines financial management as the area of business management, devoted to a judicious use of capital and a careful selection of sources of capital, in order to enable an organization to move in the direction of reaching its goals. This definition points to certain essential aspects of financial management namely prudent or rational use of capital resource and achieving the goal of the firm. According to Oduware (2011), financial management entails planning for the future of a business enterprise to ensure a positive cash flow. Financial management involves planning, organizing, directing and controlling the financial activities such as the procurement and the utilization of funds of the enterprise.

In regard to TVETs as non-profit making organizations, the financial management processes of not for-profit organizations such as instructions of learning are generally dominated by conditions of resource scarcity. Such organizations have limited opportunities for generating additional income, but are faced with an ever increasing agenda of programme and activities on which such funds could be spent. This is depicted in the complexity theory which suggests that simple deterministic functions can give rise to highly complex and often unpredictable behavior. Meanwhile the resource allocation activities and management of these organizations have received relatively little attention in economic literature. In fact, accountants and financial managers as individuals and as occupational groups are largely invisible in the growing body of financial management literature (Lightbody, 2000). Financial management is therefore relegated to a subordinate role in public academic institutions decision making (Booth, 1993).

Every successful organization must employ an effective financial information and communication control. The effective financial information ensures that the every accounting as well as related activities is going on properly and according to plan. It helps to find out the deviation and take corrective action and ensures efficient and effective management system. In the search to understand management of financial information in competitive environments and advance technologies, change has increasingly become a focus for research every organization large and small has managers.

Management is usually responsible for making important decisions in any organization and is also responsible for setting the vision and objectives which focus a firm's activities (Altan et al., 2014) and so it is with reason that management efficiency is considered by many to be a crucial element of organization performance. Further, Management efficiency which refers to managers with high integrity, professional competence and quality of service, according to Muhmad and Hashim (2015), can impact positively on organization performance. Thus, management efficiency, although is often expressed qualitatively, sometimes measured using financial ratios as proxy for factors such as efficient use of resources, income maximization, reduced operating costs, non-interest expenses such salaries and wages; thus reduced expenses show efficient financial management which impacts positively on organization performance (Sangmi & Nazir, 2010).

Auditing research has stayed relatively away from trying to be understood in its social context, particularly in terms of theoretical and empirical analysis of contemporary internal audit practice (Robson et al., 2007). Auditing research has stayed away from addressing the internal audit strategic response to the misalignment between the institutional logics and the corporate governance structure in use especially using the institutional theory perspective. In an historical context, there was little concept of auditors as independent experts. Watts and Zimmerman (1983) highlight the fact that audits of merchant guilds were conducted by a committee of guild members and in the mid nineteenth century company audits were often undertaken by individuals' shareholders whose independence from the agents running the company was not an issue. Hence, principals acted as auditors. However, in many agency relationships principals do not have the expertise and skills to check whether agents have met their responsibilities Watts and Zimmerman (1983).

Technical and vocational education and training (TVET) institutions play an important role in equipping young people to enter the world of work and in improving their employability throughout their careers. The Global KSP collects and shares information from TVET institutions on how they respond to changing labour market needs, adopt new training technologies, expand the outreach of their training, and improve the quality of their services including in the areas of governance, financing, teacher education, and industry partnerships. VET has an important role to play in technology diffusion through transfer of knowledge and skills. Rapid technological progress has had and continues to have significant implications for TVET (Sharifai, Mbaraka & Agaba, 2013).

Statement of the Problem

Prudent financial management is considered as the lifeblood and nerve centre of any organization either private or public (Kinicki & Kreitner, 2007). Weak financial management and particularly poor audit systems, poor public finance accounting systems, inadequate financial monitoring techniques and poor management of financial information and communication control are a primary cause of failure among different organizations including TVET institutions (Kroenke, 2011). Further, organization managers play a vital role in any organization, hence their commitment and adequate training in financial management efficiency matters cannot be neglected (Sangmi & Nazir, 2010; Hawkins (2010; Rhoades *et al*.,(2001) In this regard, article 73 of the Constitution of Kenya, 2010 states that the authority assigned to a state or public officer is a public trust to be exercised in a manner to promote public confidence in the integrity of the office; thus a manager of any TVET institution must adhere to this article of the constitution. Therefore, to be operationally efficient, every organization requires effective financial management and control, effective financial information management, adequately trained, transparent and accountable managers. Previous experience in vocational and training institutions shows poor performance in terms of low transition rate, completion rate, low level of transition and low number of students graduating. Poor organization performance may also results in high staff turnover, low productivity of the institutions and low morale among staff and ballooning cost of operations due to inadequacies and inefficiencies (Ngugi & Kagiri 2016).

Although there may be various factors influencing overall performance of TVET organizations in Kenya, prudent financial management issues have not been given much focus, especially how financial risk management, financial information and communication control, financial monitoring and working capital management, management efficiency in either financial or non-financial matters, internal audit systems among others affect prudent financial management in TVET institutions. Hence, there is inadequate empirical evidence on the influence of these conceptualized internal organization factors on the prudent financial management of TVET institutions; and this formed the research gap that this study sought to fill by investigating micro economic determinants of prudent financial management of TVET institutions in the Western region, Kenya.

Objectives of the Study

The general objective of this study was to investigate the micro economic determinants of prudent financial management of TVET institutions in the Western region, Kenya. The specific objectives were:-

- To determine the influence of internal audit system on prudent financial management of TVET institutions in the Western region, Kenya.
- To examine the influence of management efficiency on prudent financial management of TVET institutions in the Western region, Kenya.
- To assess the influence of information communication technology system on prudent financial management of TVET institutions in the Western region, Kenya.

Research Hypotheses

Ho_1: Internal audit system does not significantly influence prudent financial management of TVET institutions in the Western region, Kenya.

Ho_2: Management efficiency does not significantly influence prudent financial management of TVET institutions in the Western region, Kenya.

Ho_3: Information communication technology system does not significantly influence prudent financial management of TVET institutions in the Western region, Kenya.

LITERETURE REVIEW

Theoretical Review

Transaction Cost Theory

This theory based on economics states that organizations encounter the challenge of opportunism when they are in a situation bargaining with a small number of other organizations. Hence then having more suppliers reduces this risk and affords the organization the ability to negotiate better, procurement deals as the buyer is less dependent on any particular supplier and further states that states that the number of suppliers chosen by an organization encompasses an optimal balance among the following key transaction factors: fit, coordination costs and risk opportunism. (Dedrick *et al*.., 2008). Therefore, information technology has the potential of reducing coordination costs as procurement processes are standardized and automated, thus reducing the cost of working with more suppliers. Information technology further allows organization to reduce the number of suppliers and focus on low cost suppliers of standard goods and consolidates their purchases to obtain volume discounts (Dedrick *et al*., 2008).

Therefore, the use of information technology also facilitates the reduction of coordination costs. For example, electronic market places, facilitated through IT, reduce the cost of searching and obtaining information about product prices and offerings (Bakker *et al*., 2008). Collaboration facilitates information sharing by lowering transaction costs as companies can reduce supply chain uncertainty and thus the cost of contracting. For example if a supplier is unable to accurately predict the price of its product inputs, it will be reluctant to enter into a contract, which locks it into a fixed price for an extended period of time (Arrowsmith, 2002). The transaction cost theory is thus relevant to this study since transaction costs minimized by centralized and electronic procurement systems apparently depict prudent financial management in any organization both private and public like TVET institutions.

Systems Theory

Systems theory was designed in 1968 by Ludwig von Bertalanffy which categorically offers a more comprehensive view of organizations and their operations. According Ludwig the theory is not so much into management practices but a unique way of conceptualizing and studying organizations. It examines actions and their outcomes at a collective level, which demonstrates that the actions and interactions of the individuals determine organization performance. (Charlton, 2005).

According to this theory, most organization managers recognize how different systems can affect workers delivery and how workers can equally affects the systems around them. Different efforts combined make a system work effectively to accomplish goals. Through Systems theory managers are able to effectively examine patterns and events of occurrences at the workplace which is significant in coordinating programs to work as a collective whole for the overall goal or mission of the organization rather than for isolated departments (Hawthorne, 2013).

System Model

The system model emphasizes the means needed for the achievement of specific ends in terms of inputs, acquisition of resources, leadership, structures and processes (Yuchtman & Seashore , 1997). The conception of the organization is grounded in the open system approach whereby the inputs, transformation process and outputs are considered part of a whole and not independent component. The model explains the effectiveness and the ability to obtain necessary resources from the environments outside the organization (Schermerhorn, Davidson & woods, 2004). The application of system resource can be effective if a vivid relation exists between the resources which an organization receives and the goods or services it produces. This model invites managers to consider the organization not only as a whole but as a part of a larger group as well.

The dominating attitude is that any part of the activities of an organization has an effect on all other parts. The input and output measures of effectiveness in the system seem appealing. However, they will not actually display the entire story of performance, because it is not possible for new thoughts and discoveries to have an immediate and directly observable effect. It is also possible that the academic and research organizations give out outstanding results even after a long period of funding. Considering the prospect of making remarkable contributions in the future, and even though there may be no adequate evidence of effectiveness, founders may go on offering support (Altschuld & Zheng, 1995).The researcher adopted this model in the study since it emphasizes the internal factors like leadership, resources, structures and cultures that is indeed essential to enhance service delivery. It also does not look into the independent components alone but rather dependent variable in the study.

Strategic-Constituencies Model

This model broadens the scope of the goal and system models by adding the expectations of the various powerful interest groups that gravitate around the organization. Thus, the organization is perceived as a set of internal and external constituencies that negotiate a complex set of constraints, goals and referents (Goodman, Pennings & Associates, 2007). That is, the owners, organizations, customers, suppliers, creditors, community and government represent interest

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groups that must be satisfied in order to ensure the effectiveness and survival of the organization. The model deals with the effect of the organization on the main stakeholders and their interests (Schermerhorn et al., 2004).

Resource Based View Theory

Hitt (2016) asserts that Resource based theory has become increasingly popular in operations management research, thus seen as key to superior organization performance. The supporters of Resource based view theory suggest that organizations should be in a position to identify the sources of achievement rather than concentrating on the competitive environment (Othman, 2015). Resource Based theory thus instrumental to focusing scholars on the power to control resource allocation as the key to organizational performance.

According to Resource Based View **(**RBV) proponents, it is much more practicable to exploit existing external opportunities using the available resources in a special way instead of trying to acquire new skills and knowledge for different opportunities. In RBV model, all resources are awarded a major role in assisting organizations to achieve higher performance (Kamboj, 2015). The RBV of a firm has been around for over 20 years during which time it has been widely taken up and subjected to considerable criticism (Kraaijenbrink *et al*., 2009).There are two types of resources (1) tangible assets–which are physical things e.g. Land, machinery and Capital (2) intangible assets-anything else that is not physical but can be owned by the organization.

Empirical Review of literature relevant to the Study

Internal Audit System and Prudent Financial Management

Auditing research has stayed relatively away from trying to be understood in its social context, particularly in terms of theoretical and empirical analysis of contemporary internal audit practice (Robson et al., 2007). Auditing research has stayed away from addressing the internal audit strategic response to the misalignment between the institutional logics and the corporate governance structure in use especially using the institutional theory perspective. In an historical context, there was little concept of auditors as independent experts. Watts and Zimmerman (1983) highlight the fact that audits of merchant guilds were conducted by a committee of guild members and in the mid nineteenth century company audits were often undertaken by individuals' shareholders whose independence from the agents running the company was not an issue. Hence, principals acted as auditors. However, in many agency relationships principals do not have the expertise and skills to check whether agents have met their responsibilities Watts and Zimmerman (1983).

Fama (1980) used agency theory to examine the hierarchical relationships in large multi-division companies. In this context, the company's top management is viewed as the principal who delegates responsibility and authority to subordinate managers (agents) for effective utilization of a portion of the firm's resources, leading to the possibility of moral hazard problems between divisions and top management. Top management tries to mitigate this problem by instituting organizational controls, including internal auditing (Miguel, 2002). This argument suggests that there is more need for internal auditing in large multi-divisional companies than in smaller ones where internal auditors merely act as whistleblowers (Miguel, 2002) but Chan (2004) provided an example of how the internal auditor can be placed in a financial monitoring' position, not only to shareholder-owners but also by requiring them to report to the public

Management Efficiency and Prudent Financial Management

Management is usually responsible for making important decisions in any organization and is also responsible for setting the vision and objectives which focus a firm's activities (Altan et al., 2014) and so it is with reason that management efficiency is considered by many to be a crucial element of organization performance. Further, Management efficiency which refers to managers with high integrity, professional competence and quality of service, according to Muhmad and Hashim (2015), can impact positively on organization performance. Thus, management efficiency, although is often expressed qualitatively, sometimes measured using financial ratios as proxy for factors such as efficient use of resources, income maximization, reduced operating costs, non-interest expenses such salaries and wages; thus reduced expenses show efficient financial management which impacts positively on organization performance (Sangmi & Nazir, 2010).

Management information system can be defined as the development and use of information system that help businesses achieve their goals and objective. This definition has three key elements: development and use, information system, and business goals and objectives. A system is a group of component that interacts to achieve some purpose, an information system (IS) is a group of component that interacts to produce information. Information is knowledge derived from data, whereas data is defined as recorded fact or figures. A model of the components of an information system include computer hardware, software, data, procedures and people (kroenke, 2011).

Information Communication Technology and Prudent Financial Management

Information Communication Technology (ICT) broadly refers to the use of computers and peripheral communication equipment, which have been on the rise in service organizations in the recent past (Berger *et al., 2003*). In training institutions, this has been evidenced by the introduction of ICT products such as online teaching and learning, electronic payments, electronic teaching and learning materials, security surveillance systems, information exchanges, short messaging service, management information systems, electronic/biometric management of students and tutors, These technologies have enabled training institutions to efficiently provide more services to perceived customers with less manpower.

Conceptual Framework

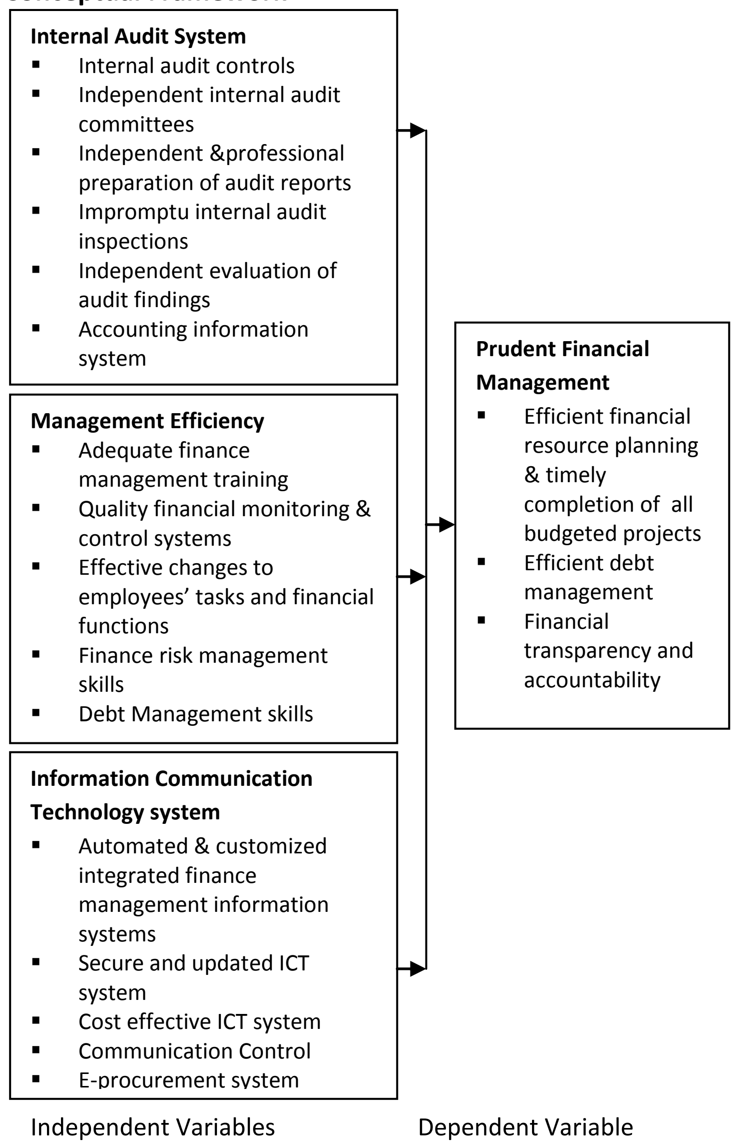

Figure 1 : Conceptual Framework
Source: Author 2019

METHODOLOGY

Research design refers to how data collection and analysis are structured in order to meet the research objectives through empirical evidence economically

(Cooper and Schindler, 2006). This study used descriptive survey design so as to describe the characteristics of the study variables as they exist (Sekaran & Bougie, 2013). The target population was senior management staff of 23 government registered TVET institutions in the Western region of Kenya. These respondents were chosen because they were informative on salient factors that influence organizational performance of the TVET institutions, hence was helpful in giving key information on how the study's conceptualized factors that influence organization performance of these TVET institutions. Primary data was collected using structured questionnaires. Burns and Grove (2003) confirm that questionnaires are considered rich for both quantitative and qualitative research. Multiple regression analysis was used to examine the effect of the hypothesized microeconomic determinants and prudent financial management.

The regression equation adopted the following model formula:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_2 X_3 + \varepsilon$

Where,

Y is Prudent Financial Management of TVETs

$\mathbf{X_1}$ -Internal audit systems

$\mathbf{X_2}$ - Management system

$\mathbf{X_3}$ - Information Technology

β_0, β_1, $\beta_{2,}$ are the coefficients of the terms and ε is the error term

The F- test was used to determine the significance of the regression while the coefficient of determination, $R^{2,}$ was used to determine how much variation in Y is explained by X.

FINDINGS

The study investigated the influence of internal organization factors on prudent financial management in TVET institutions in the western region, Kenya. Descriptive statistics were summarized in form of frequencies, percentages, means and standard deviation which summarized respondents perceived responses to each of the statements on the study variables using likert scale of values ranging from 5 to 1; that is; 5=strongly agree, 4=agree, 3= Uncertain, 2=disagree and 1= strongly disagree. Descriptive statistics were summations of responses based on independent variables (internal audit system, ICT, management efficiency) on the dependent variable (prudent financial management). The results were presented in table form showing frequencies of responses as per each statement plus its corresponding percentage score in brackets.

Internal Audit System

This section analyzed and presented data relating to the first objective of the study; the influence of internal audit system on prudent financial management in TVET institutions in the western region, Kenya. The researcher was interested in knowing the influence of internal audit system issues such as; adequate internal audit controls to detect, deter, and mitigate any suspected fraudulent transactions; legal authorization and reconciliation of all financial transactions; whether there is an independent internal audit committee that objectively evaluates all internal audit findings and enforces audit recommendations among others. Respondents were asked seven questions and their responses summarized in table 1.

Table 1: Descriptive Statistics; Internal Audit System

	Frequency and Percentage (%)						
Statement	**5**	**4**	**3**	**2**	**1**	**Mean**	**Std.Dev**
1. There are adequate internal audit controls to detect, deter, and mitigate any suspected fraudulent transactions	13(13.5)	18(18.8)	43(44.8)	21(21.9)	1(1.0)	3.22	.976

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2. There is legal authorization and reconciliation of all financial transactions	13(13.5)	25(26.1)	29(30.2)	13(13.5)	16(16.7)	3.06	.972
3. Audit reports are prepared independently devoid of any manipulation and diligently submitted to relevant higher audit authorities	11(11.5)	31(32.2)	43(44.7)	7(7.3)	4(4.2)	3.40	.934
4. There are impromptu internal audit inspections to check illegal financial transactions	3(3.1)	24(25.0)	33(34.4)	32(33.3)	4(4.2)	2.90	.924
5. Internal audit system ensures that all financial transactions are receipted and posted in relevant financial management books	6(6.3)	24(25.0)	30(31.2)	25(26.0)	11(11.5)	2.89	.884
6. There is an independent internal audit committee that objectively evaluates all internal audit findings and enforces audit recommendations.	3(3.1)	20(21.9)	22(22.9)	33(33.3)	18(18.8)	2.57	.922
7. Generally the internal audit system practiced in the college echoes prudent financial management of the college	7(7.3)	27(28.1)	18(18.8)	30(31.3)	14(14.5)	2.82	.905
Valid N (listwise) **96**							
Grand mean = 2.98							

Management Efficiency

This analyzed data relating to the second objective of the study; the influence of management efficiency on prudent financial management in TVET institutions in the western region, Kenya. The details of descriptive analysis were presented in table 2.

Table 2: Descriptive Statistics; Management Efficiency

	Frequency and Percentage (%)						
Statement	**5**	**4**	**3**	**2**	**1**	**Mean**	**Std.Dev**
1. Finance management controls and reviews improves prudent financial management	4(4.2)	49(51.0)	6(6.3)	34(35.4)	3(3.1)	3.18	.966
2. Promotion of top financial management abilities improves prudent financial management in the college	9(9.4)	43(44.7)	9(9.4)	30(31.3)	5(5.2)	3.22	.944
3. Regular evaluation and implementation of new finance management systems can improve prudent financial management of the college.	12(12.5)	54(57.3)	8(8.3)	18(17.7)	4(4.2)	3.56	.954
4. The level of debt held by the college reflects prudent financial management of the college	2(2.1)	32(33.3)	20(20.8)	37(38.6)	5(5.2)	2.89	.914
5. The intra- and inter-departmental communication structure within our	5(5.2)	32(33.3)	21(21.9)	33(34.4)	5(5.2)	2.99	.959

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organization is regularly restructured to improve prudent financial management							
6. There are regular changes to organizations' financial tasks and functions to improve service provision.	2(2.1)	32(33.3)	20(20.8)	37(38.6)	5(5.2)	2.79	.904
7. Generally, Management Efficiency influences organization's prudent financial management	13(13.5)	56(58.3)	5(5.2)	18(18.8)	4(4.2)	3.58	.973
Valid N (listwise) 96							
Grand mean = 3.17							

Information Communication Technology System

This analyzed data relating to the third objective of the study; the influence of information communication technology on prudent financial management in TVET institutions in the western region, Kenya. The details of descriptive analysis were presented in table 3.

Table 3: Descriptive Statistics; Information Communication Technology System

	Frequency and Percentage (%)						
Statement	**5**	**4**	**3**	**2**	**1**	**Mean**	**Std.Dev**
1. The college has adopted automated & secure information communication technology system	4(4.2)	44(45.8)	8(8.3)	36(37.5)	4(4.2)	3.08	.983
2. The College information communication technology system is user friendly	14(14.5)	52(54.2)	6(6.3)	21(21.9)	3(3.1)	3.55	.985
3. The College information communication technology system is cost effective	10(10.4)	56(58.3)	7(7.3)	19(19.8)	4(4.2)	3.51	.956
4. There is a secure integrated finance management information system	11(11.5)	34(35.4)	8(8.3)	38(39.6)	5(5.2)	3.17	.894
5. Frequent changes in management information systems affects prudent financial management	13(13,5)	53(55.2)	5(5.2)	23(24.0)	2(2.1)	3.54	.865
6. Most users are satisfied with the college's ICT systems	9(9.3)	57(59.4)	4(4.2)	23(24.0)	3(3.1)	3.48	.854
7. Generally, the college ICT systems influence prudent financial management	13(13.5)	53(56.3)	5(5.2)	22(21.9)	3(3.1)	3.57	.875
Valid N (listwise) 96							
Grand mean = 3.41							

Inferential Analysis

Testing of Regression Model Assumptions

Normality was tested using histograms with normal curve. SPSS outputs showed results of histograms with normal curve graphs that were bell-shaped confirming that data was approximately normally distributed thus met this assumption of normality.

Linearity was tested in order to check the actual strength of all relationships. This was necessary so as to identify any departures from linearity which were bound to affect correlation. Linear models predict values which fall in straight line by having a constant unit of change (slope) of the dependent variable for a constant unit change of the independent variable.

Linearity of the variables was tested using Pearson's product moment correlation coefficient. Since several items in the questionnaire measured the construct, the summation scores of the items in the questionnaire for the construct were computed and used in correlation analysis (Hair *et al.,* 2006). Correlation analysis in table 4 below showed that all predictor variables in the study were significant at *p<0.01* level, hence the study met this assumption.

Table 4: Correlation Analysis

		Internal Audit System	**Management Efficiency**	**ICT System**	**Prudent Finance Management**
Internal Audit System	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	96			
	N	96			
Management Efficiency	Pearson Correlation	.649**	1		
	Sig. (2-tailed)	.000			
	N	96	96		
ICT System	Pearson Correlation	.658	.658	1	
	Sig. (2-tailed)	.574	.577		
	N	96	96	96	
Prudent Finance Management	Pearson Correlation	.538**	.402**	.312**	1
	Sig. (2-tailed)	.000	.000	.002	
	N	96	96	96	96

Multicollinearity was tested by analyzing correlations between all pairs of independent variables (Internal Audit System, Management Efficiency and Information Communication Technology). Hair et al., (2006) asserts that if correlation coefficient, (r) is close to 1 or -1, then there is multicollinearity but if (r) is not above 0.8, then there is no multicollinearity. In this study (table 4; correlation analysis), the highest correlation coefficient is 0.658, hence below the threshold of 0.8, therefore, multicollinearity assumption was checked and met.

Outliers: From descriptive statistics that were computed during data analysis, there were no values with at least 3 standard deviations below or above the computed mean; thus this assumption of outliers was met.

Accuracy of data was also not violated because the scales of measurement were all valid since questions had content validity and cronbach's alpha (which is a measure of reliability) values were 0.7 and above hence met the threshold.

Number of Cases: The number of cases of the independent variable ought to be at least 20. This

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study had four independent variables; therefore, the minimum cases ought to be 4x20 = 80. This study sample size was 136, hence meet the threshold.

Linear Regression Results

Linear regression analysis tested the direct influence of four independent variables (Internal Audit System, Management Efficiency and Information Communication Technology) on the dependent variable (Prudent Financial Management in TVET institutions).

Influence of Internal Audit System on Prudent Financial Management

This tested objective one of the study. The results are presented in table 5. The model summary showed that R squared (R^2) = 0.290 implying that 29.0% of variation in the dependent variable (Prudent Financial Management) was explained by the independent variable (Internal Audit Systems). This therefore meant that other latent variables not in the model contributed 71.0% of prudent financial management in TVET institutions in the western region, Kenya.

Further, regression results using unstandardized beta coefficients show that there existed a positive and significant effect of internal audit system on prudent financial management in TVET institutions in the western region, Kenya. (*β=-0.176 (0.028); significant at p<.01*). This implied that a single strengthening in TVET institutions' internal audit systems led to 0.176 increase in prudent financial management in TVET institutions in the western region, Kenya. The simple linear regression equation for direct influence of internal audit system on prudent financial management in TVET institutions in the western region, Kenya was;

(i) $Y= 2.392 + 0.176X_1$ Where:

Y = Prudent financial management in TVET institutions in the western region, Kenya

X_1 = Internal Audit System

Table 5: Direct Influence of Internal Audit Systems on Prudent Financial Management

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	.538[a]	.290	.282	.19557	.290	38.342	1	94	.000

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.466	1	1.466	38.342	.000[a]
	Residual	3.595	94	.038		
	Total	5.062	95			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.392	.087		27.472	.000
	Internal Audit System	.176	.028	.538	6.192	.000

a. Dependent Variable: Prudent Finance Management

Influence of Management Efficiency on Prudent Financial Management

This tested objective three of the study. The results were presented in table 6. The model summary in table 6 showed that R squared (R^2) = 0.162 implying that 16.2% of variation in the dependent variable (Prudent Financial Management) was explained by the independent variable (Management efficiency). This therefore meant that other confounding variables not in the model contributed 83.8% of prudent financial management in TVET institutions in the western region, Kenya.

Further, regression results using unstandardized beta coefficients showed that there existed a positive and significant effect of management efficiency on prudent financial management in TVET institutions in the western region, Kenya. (*β=-0.196 (0.022); significant at p<.01*). This implied that a single increase in TVET institutions' management efficiency led to 0.196 increase in prudent financial management in TVET institutions in the western region, Kenya. The simple linear regression equation for direct influence of management efficiency on prudent financial management in TVET institutions in the western region, Kenya was;

(iii) $Y= 2.620 + 0.196X_3$; Where:

Y = Prudent financial management in TVET institutions in the western region, Kenya

X_3 = Management efficiency

Table 6: Direct Influence of Management Efficiency on Prudent Financial Management

Model Summary

					Change Statistics				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**R Square Change**	**F Change**	**df1**	**df2**	**Sig. F Change**
1	.402[a]	.162	.153	.21244	.162	18.155	1	94	.000

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.819	1	.819	18.155	.000[a]
	Residual	4.242	94	.045		
	Total	5.062	95			

Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.620	.073		35.887	.000
	Management Efficiency	.196	.022	.402	4.261	.000

a. Dependent Variable: Prudent Financial Management

Influence of ICT on Prudent Financial Management

This tested objective four of the study. The results are presented in table 7. The model summary in table 7

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showed that R squared (R^2) = 0.097 implying that 9.7% of variation in the dependent variable (Prudent Financial Management) was explained by the independent variable (ICT systems). This therefore meant that other confounding variables not in the model contribute 90.3% of prudent financial management in TVET institutions in the western region, Kenya.

Table 7 : Direct Influence of ICT Systems on Prudent Financial Management

Model Summary

					Change Statistics				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**R Square Change**	**F Change**	**df1**	**df2**	**Sig. F Change**
1	.312[a]	.097	.088	.22048	.097	10.125	1	94	.002

ANOVA[b]

Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	.492	1	.492	10.125	.002[a]
	Residual	4.570	94	.049		
	Total	5.062	95			

Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		**B**	**Std. Error**	**Beta**	**t**	**Sig.**
1	(Constant)	3.194	.090		35.497	.000
	ICT System	.093	.029	.312	-3.182	.002

a. Dependent Variable: Prudent Financial Management

Further, regression results using unstandardized beta coefficients showed that there exists a positive and significant effect of ICT systems on prudent financial management in TVET institutions in the western region, Kenya. (*β=-0.093 (0.029); significant at p<.01*). This implied that a single increase in TVET institutions' secure and updated ICT systems led to 0.093 increase in prudent financial management in TVET institutions in the western region, Kenya. The simple linear regression equation for direct influence of ICT system on prudent financial management in TVET institutions in the western region, Kenya is;

(iv) $Y= 3.194 + 0.093X_4$; Where:

Y = Prudent financial management in TVET institutions in the western region, Kenya

X_4 = ICT systems

Multiple Regression Results

Multiple regression analysis was computed because regression model assumptions of normality, linearity and multicollinearity were fulfilled. That is, multiple regression analysis was computed to assess the combined effect of the four independent variables (internal audit systems, management efficiency, ICT system) on prudent financial management in TVET institutions in the western region, Kenya.

Table 8 : Multiple Regression Results

Model Summary

Mode l	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.781[a]	.610	.593	.14720	.610	35.654	3	92	.000

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.090	3	.773	35.654	.000[a]
	Residual	1.972	92	.022		
	Total	5.062	95			

a. Predictors: (Constant), ICT System, , Internal Audit System, Management Efficiency

b. Dependent Variable: Prudent Finance Management

From table 8, model 1 showed combined regression results for influence of four independent variables (internal audit systems, procurement system, management efficiency, ICT system) on the dependent variable (prudent financial management in TVET institutions in the western region, Kenya.). The result showed R^2 = 0. 610; which a good model, thus the model explained 61.0% of the variations in prudent financial management in TVET institutions in the western region, Kenya. The F statistic was 35.564 significant at *p<0.01.* This implied that the independent variables in the study model were indeed different from each other and therefore influenced the dependent variable (prudent financial management in TVET institutions in the western region, Kenya) in varied ways, thus confirming the relevance of running multiple regressions.

Table 9: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.296	.102		22.539	.000
	Internal Audit System	.407	.073	.845	5.603	.000
	Management Efficiency	.417	.061	.998	6.870	.000
	ICT System	.085	.020	.285	4.274	.000

a. Dependent Variable: Prudent Financial Management

From the values of unstandardized regression coefficients with standard errors in parenthesis in Table 9, all the four independent variables (Internal audit system; β = -0.407 (0.073) at *p<0.01*; at *p<0.01;* Management Efficiency; β = 0.417 (0.061) at *p<0.01;* Information communication technology*; β = -0.085 (0.020) at p<0.01* were significant. Therefore, the multiple regression equation for overall influence of the four significant independent variables on prudent financial management in TVET institutions in the western region, Kenya is;

(vi) $Y= 2.296 +0.407X_1 + 0.417X_2 + 0.085X_3$

Where;

Y= Prudent financial management in TVET institutions in the western region, Kenya

X_1= Internal audit system

X_2= Management efficiency

X_3= Information Communication Technology

Testing Null Hypotheses

H_{01}: There is no significant relationship between internal audit system and prudent financial management in TVET institutions in the western region, Kenya

H_A: There exists significant relationship between internal audit system and prudent financial management in TVET institutions in the western region, Kenya

T-test statistics results: (t = 5.603; *p=0.000*< 0.01)

Verdict: The null hypothesis **H_{01}** was rejected.
Results interpretation: H_A: There exists significant relationship between internal audit system and prudent financial management in TVET institutions in the western region, Kenya

H_{02}: There is no significant relationship between management efficiency and prudent financial management in TVET institutions in the western region, Kenya

H_A: There exists significant relationship between management efficiency and prudent financial management in TVET institutions in the western region, Kenya

T-test statistics results: (t = 6.870; *p=0.000*< 0.01)

Verdict: The null hypothesis **H_{02}** was rejected.
Results interpretation: H_A: There exists significant relationship between management efficiency and prudent financial management in TVET institutions in the western region, Kenya

H_{03}: There is no significant relationship between information communication technology and prudent financial management in TVET institutions in the western region, Kenya

H_A: There exists significant relationship between information communication technology and prudent financial management in TVET institutions in the western region, Kenya

T-test statistics results: (t = 4.274; *p=0.000*< 0.01)

Verdict: The null hypothesis **H_{04}** was rejected.
Results interpretation: H_A: There exists significant relationship between information communication technology and prudent financial management in TVET institutions in the western region, Kenya.

CONCLUSIONS

The study concluded that internal audit systems were sound prudent financial management practices meant to guide public finance management in TVET institutions in Kenya.

Management efficiency in terms of sound debt management skills, effective financial monitoring and controls, cost effective financial measures on the part of TVET institutions' managers can really have a bearing on prudent financial management of TVET institutions in Kenya.

Secure, updated and customized integrated financial management information systems can impact positively on sound financial management practices in TVET institutions in Kenya.

RECOMMENDATIONS

First, there should be independent and accountable audit committees responsible for authentic checks on public finance management in TVET institutions in Kenya.

All senior managers of TVET institutions should be compelled to practice management efficiency skills in debt management, asset use, financial monitoring and controls, management information systems and solely held accountable for public finance management of TVET institutions.

There should be secure and updated information communication systems to monitor real-time financial transaction in all TVET institutions so as to effect prudent financial management in TVET institutions in Kenya

Areas for Further Research

First, a similar study can be done but targeting TVET students and junior staff of TVET institutions so as to get their perception about prudent finance management in the colleges.

Secondly, another study can employ qualitative research techniques on private training institutions so as to compare research results.

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