INTERNAL CONTROL SYSTEMS ON FINANCIAL ACCOUNTABILITY IN NATIONAL PUBLIC SECONDARY SCHOOLS IN KENYA

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Abstract:

The main objective of this study was to evaluate the effect of internal control systems on financial accountability in national public secondary school in Kenya. The specific objectives were; to evaluate the effect of control environment on financial accountability, to determine the effect of control activities on financial accountability, to ascertain the effect of risk assessment on financial accountability to examine the effect of information and communication on financial accountability and to assess the effect of monitoring on financial accountability in national public secondary schools in Kenya. However, accountability is still wanting in some public secondary schools. The study was carried out in 103 national public secondary schools in Kenya. Survey research design was used on a population of 309 consisting of; 103 principals, 103 bursars, 103 BOM chairs. Purposive and simple random sampling were used to select principals, bursars and BOM chair. Primary data was collected by use of questionnaires, while secondary data was collected through audited financial statements. Reliability of the research instruments was tested through Cronbach's Alpha. Descriptive statistics comprised of frequencies; means, standard deviation and variance. Inferential statistics comprised of; Correlation analysis, ANOVA, regression analysis, testing for normality, autocorrelation and multicollinearity. The dimensions of internal control systems were found to have a significant joint effect on financial accountability. It was therefore recommended that the government should ensure that BOM have accounting knowledge and should be

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appointed based on integrity and ethical values. Segregation of duties should be strengthened with clear roles of the principal, bursar, other BOM members, storekeeper and other employees. Authorization of activities should be mandatory. Impromptu checks of ongoing projects and approved expenditure should be frequently done. The government should employ all principals and bursars on contract basis renewable only based on financial accountability. The government should interlink the schools bank accounts to a central accounting information system. The government should ensure through independent checks that the budgets and other financial statements are complete, reliable and correct. There should be frequent external audits by county auditors.

JEL: H52; H75; I10

Keywords: internal control systems, financial accountability, secondary schools

1. Background to the Study

Many state governments have put in place in-house control procedures to control the use of funds devoted to education. Internal control systems is the process, driven by an entity's board of management and other staffs, envisioned to deliver faithful assurance regarding the accomplishment of goals. It plays a weighty role in pinpointing and hindering deception and protecting the organization's assets, both physical and immaterial (Institute of Policy Analysis and Research, 2014).

Over time, various publications and strategies have been fashioned by the ministry of education to ensure that the processes in the obtaining of goods, services and works for schools are transparent and that they guide the school management committees at all stages of procurement. The main objectives of internal control include; ensuring that all financial transactions are recorded and soundly reinforced by appropriate documentation and that the accounting records report the true financial position of the school in a clear manner (Auditor General, 2016/2017).

2. Statement of the Problem

Financial accountability in some public secondary schools is still in doubt; a report by Ethics and Anti-Corruption Commission established that thirty percent (30%) of funds channeled to subsidized secondary education could not be accounted for by the various school principals (Ethics and Anti- Corruption Commission, 2015/2016). An audit report by the ministry of finance revealed that Kenyan shillings 4.2 billion from donors and Kenyan taxpayers had been misappropriated by senior Ministry of education officials and head teachers which made the international development partners that were funding free primary education to withdraw from the project (Transparency International Kenya, 2014). These misappropriations still take place despite the internal control systems put in

place by the government of Kenya. With such misappropriations, the objectives of subsidized secondary school cannot be fully achieved.

2.1 Specific Objectives
1) To evaluate the effect of control environment on financial accountability in national public secondary schools in Kenya.
2) To determine the effect of control activities on financial accountability in national public secondary schools in Kenya.
3) To ascertain the effect of risk assessment on financial accountability in national public secondary schools in Kenya.
4) To examine the effect of information and communication on financial accountability in national public secondary schools in Kenya.
5) Assess the effect of monitoring on financial accountability in national public secondary schools in Kenya.

2.2 Research Hypotheses
HO_1: There is no significant effect of control environment on financial accountability in national public secondary schools in Kenya.

HO_2: There is no significant effect of control activities on financial accountability in national public secondary schools in Kenya.

HO_3: There is no significant effect of risk assessment on financial accountability in national public secondary schools in Kenya.

HO_4: There is no significant effect of information and communication on financial accountability in national public secondary schools in Kenya.
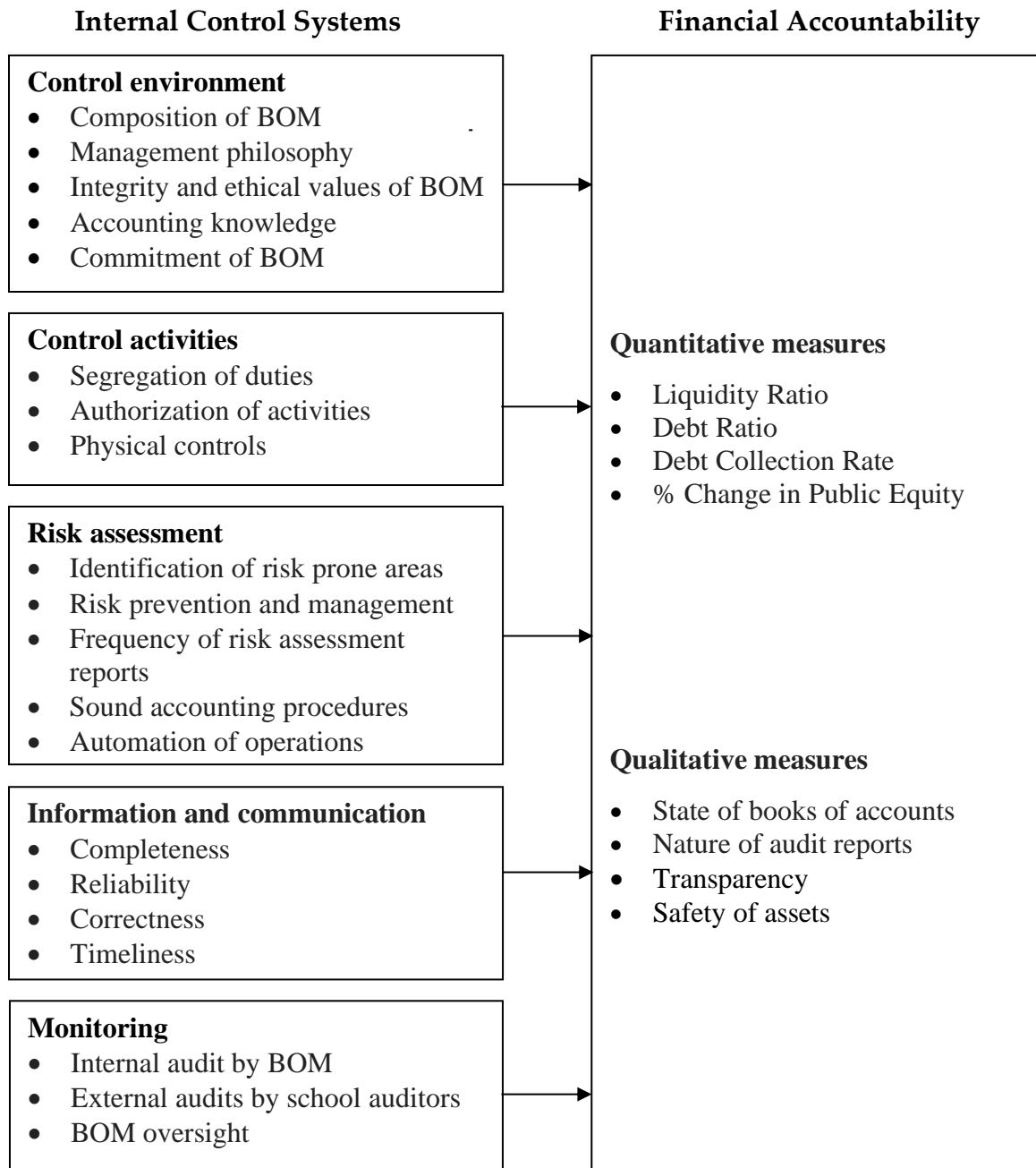
HO_5: There is no significant effect of monitoring on financial accountability in national public secondary schools in Kenya.

Control environment concerns the creation of an atmosphere in which people can conduct their activities and carry out their control tasks effectively. The control environment is the set of principles, processes, and structures that provide the basis for carrying out internal control across the organization. The board of directors and senior management create the tone at the top regarding the importance of internal control including expected standards of conduct. Management strengthens expectations at the various levels of the organization (Oduol, 2011).

Control activities are the policies and procedures that assist in ensuring that management directives are successfully implemented. They provide the means to address the various risks that may hinder the achievement of the organization's objectives. In essence, control activities are established in response to apparent risks. Control activities as policies and procedures that help ensure that management directives are carried out. They help ensure that necessary activities are taken to address risks to the achievements of the entity's objectives. Control activities occur throughout the organization at all levels and all functions. Control activities include a range of activities;

authorization, verifications, reconciliations, reviews of operating performance security of assets and segregation of duties (Gbegi, Adebisi & Makurdi, 2015).

2.3 Conceptual Framework

Internal Control Systems   **Financial Accountability**

Control environment
- Composition of BOM
- Management philosophy
- Integrity and ethical values of BOM
- Accounting knowledge
- Commitment of BOM

Control activities
- Segregation of duties
- Authorization of activities
- Physical controls

Risk assessment
- Identification of risk prone areas
- Risk prevention and management
- Frequency of risk assessment reports
- Sound accounting procedures
- Automation of operations

Information and communication
- Completeness
- Reliability
- Correctness
- Timeliness

Monitoring
- Internal audit by BOM
- External audits by school auditors
- BOM oversight

Quantitative measures
- Liquidity Ratio
- Debt Ratio
- Debt Collection Rate
- % Change in Public Equity

Qualitative measures
- State of books of accounts
- Nature of audit reports
- Transparency
- Safety of assets

Risk assessment involves a dynamic and iterative process for ascertaining and evaluating hazards to the accomplishment of goals. Risks to the achievement of these objectives from across the entity are considered relative to conventional risk tolerances. Thus, risk assessment forms the basis for determining how risks will be managed. A

prerequisite to risk assessment is the formation of objectives, linked at diverse levels of the entity (COSO, 2010).

Communication is the recurrent, iterative course of providing, distribution, and attaining necessary information. It is the means by which information is dispersed all over the organization, flowing up, down, and across the entity. It enables employees to receive a clear message from senior management that control tasks must be taken seriously. External communiqué is twofold: it enables inbound messages of relevant external information and offers information to outside parties in reaction to requirements and prospects (COSO, 2013).

Monitoring ensures that structures are executing activities as intended. It is accomplished through regular or periodic assessments. These estimates determine whether other constituents of internal control keep on functioning as envisioned. In addition, these estimates facilitate the documentation of internal control deficiencies and transfer them to suitable administrators responsible for enchanting corrective action. More serious deficiencies are communicated to upper levels of administration and to the board of directors when suitable (Moraa, 2015).

Accountability is the exercise whereby public service organizations and individuals within them are held answerable for their outcomes and activities, including their stewardship. Accountability ensures dependable accounting and financial reporting, and distribution of resources in an efficient manner. This assists in achieving the primary goal of government which is to distribute limited capital assets to the production of those goods and services for which demand is great. Unsatisfactory accounting and reporting, on the other hand, conceal waste and inefficiency, thereby preventing proficient allocation of economic resources (Andrew & Sayag, 2010).

3. Methodology

3.1 Research Design
A descriptive survey research design was adopted for this study. The design was most appropriate for this study because of the nature of variables in this study that was concerned with finding out what relationship exists between internal control systems and financial accountability

3.2 Target Population
The target population for this study was 103 Public schools consisting of; 103 principals, 103 bursars, 103 BOM chairs.

3.3 Data Collection Instruments
Primary data was collected through the use of questionnaires. Both closed-ended and open-ended questions were used. Closed-ended questions were used because they are easy to administer and evaluate, they are also cost-effective in terms of time and money. Secondary data was collected through analysis of current ratio, debtors' ratio, debt ratio

and change in public equity from audited financial statements which consisted of school fund account, tuition account, and operation account to give accurate quantitative information on the state of accountability in public national schools in Kenya.

3.4 Data Collection Procedure

Primary data was collected by the researcher with the help of a research assistant where questionnaires were distributed to the sampled national public secondary schools. A period one month was allowed for filling up the questionnaires. The questionnaires were then collected back after one month. Secondary data was also collected from the schools audited financial statements for four years from 2014 to 2017.

3.5 Data Analysis and Presentation

The data collected was processed and cleaned in Microsoft Excel before exporting to Stata for data analysis. Both descriptive and inferential statistics were used to analyze the data collected. Descriptive statistics comprised frequencies; mean, standard deviation and variance. Inferential statistics used to measure the relationship between variables comprised of Pearson Product moment correlation for correlation analysis, Simple and multiple regression analysis, normality test was done using Jacque Bera test, autocorrelation was tested using Durbin Watson statistic, multicollinearity was tested using variance inflation factors. Heteroscedasticity was tested using a scatter plot and a Breach Pagan test. Data was presented using tables, charts, and graphs.

3.6 Multiple Regression Analysis

An equation was derived as a basis for the estimation and measure of the proportion of variance between the dependent variable and independent variables. Tests for multicollinearity and normality which form the requisite for multiple regression analysis was carried out in this study. Regression analysis, which determines the relationship between variables, was used to find out the connection between the independent variables (Control environment, Control activities, Risk assessment, Information/communication, and Monitoring) and the dependent variable (Financial accountability).

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

4. Results & Findings

4.1 Validity of the Data Collection Instrument

Factor analysis was used to assess the construct validity of the questionnaire and also further used for dimension reduction of the observed variables (indicators) to yield the latent constructs. Uni-dimensionality of the study constructs was assessed by confirmatory factor analysis (CFA) and multi-dimensionality of the constructs and items

assessed by Exploratory Factor Analysis (EFA) to explore the set of indicators that measure the constructs.

Table 1: KMO and Bartlett's Tests

	Items retained	AVE	Squared Correlations	KMO	Bartlett's test χ^2	df	P-value
Control environment	8	0.535	0.338	0.551	170.945	45	0.000
Control activities	6	0.620	0.373	0.638	100.084	15	0.000
Risk assessment	6	0.564	0.141	0.507	56.73	15	0.000
Info. & comm.	7	0.571	0.345	0.695	97.311	21	0.000
Monitoring	6	0.578	0.246	0.529	37.544	15	0.001
Financial Acc	7	0.514	0.188	0.6	62.261	21	0.000

4.2 Reliability Analysis

Cronbach's alpha which is the most common internal consistency technique was used in this study to check on the reliability of the questionnaire.

Table 2: Cronbach's Alpha Reliability Table

Construct	Number of Items	Cronbach alpha	Number of items retained	Cronbach alpha after deletion	Conclusion
Control environment	11	0.513	8	0.717	Reliable
Control activities	10	0.592	6	0.764	Reliable
Risk assessment	10	0.611	6	0.734	Reliable
Info. & communication	10	0.415	7	0.701	Reliable
Monitoring	10	0.623	6	0.745	Reliable
Financial Acc	11	0.697	7	0.801	Reliable

A one-way Analysis of variance was used to confirm that financial accountability has a significant variation across the schools. F-statistic of has a p-value of 0.000 which is less than 0.05 implying significant differences in the mean financial accountability. The analysis also confirms heterogeneity across the schools shown by the Bartlett's Chi-square statistic of 81.270 with a p-value of 0.113 which is greater than 0.05. The Bartlett's statistic reveals that there are no significant differences in variances of financial accountability between the schools

Table 3: One Way ANOVA of Financial Accountability across Schools

	Sum of squares	Df	Mean square	F	p>F
Between groups	155.044	67	2.314	9.990	0.000
Within groups	31.502	136	0.232		
Total	186.546	203	0.919		

Bartlett's test for equal variances: chi2 (67) = 81.270 Prob>chi2 = 0.113

An overlaid presentation of financial accountability of each school over the period is depicted in Figure 1. Each line represents the financial accountability within a school over the period from 2014 to 2017. The lines tend to show very gradual and almost constant

levels of financial accountability within the schools to imply homogeneity. However, financial accountability between schools is depicted to be heterogeneous with high differences in the levels from one school to another.
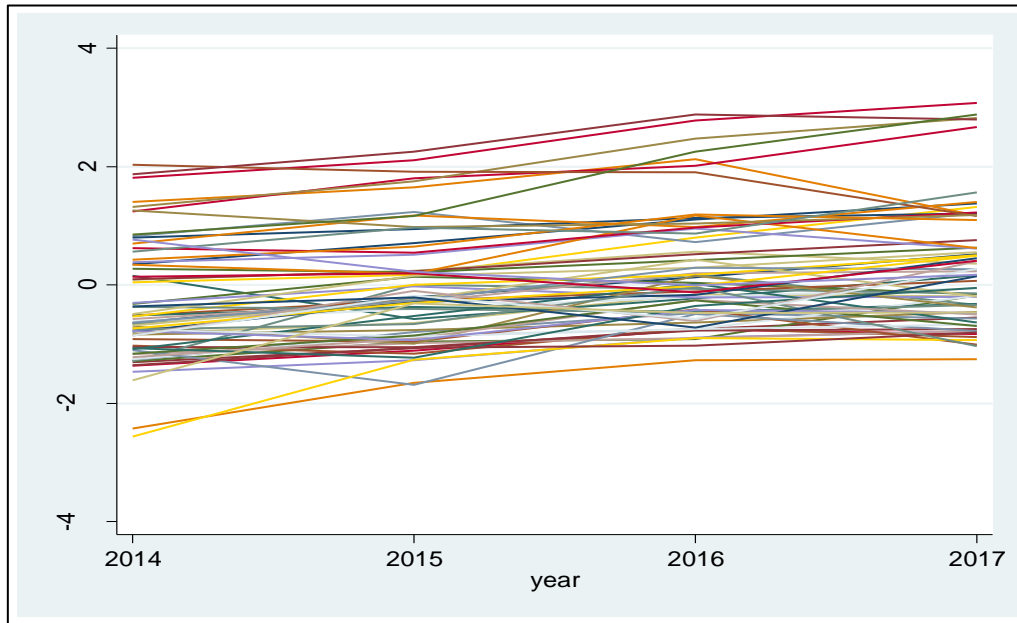

Figure 1: Overlaid Two-way Plot of Financial Accountability Over Time per School

4.3 Inferential Analysis Results
4.3.1 Correlations Analysis

To assess the strength and direction of relationships between the study variables, pairwise Pearson product moment correlation coefficients were generated for each pair of variables.

Table 4: Correlations Matrix

	x_1	x_2	x_3	x_4	x_5	Y_0	Y_1	Y_2	Y_3	Y_4	Y
x_1	1										
x_2	0.269	1									
	(0.108)										
x_3	0.180	0.084	1								
	(0.288)	(0.622)									
x_4	0.208	0.210	0.349	1							
	(0.217)	(0.211)	(0.034)								
x_5	0.270	0.299	0.252	0.417	1						
	(0.106)	(0.073)	(0.133)	(0.01)							
Y_0	0.511*	0.514*	0.381	0.555*	0.516*	1					
	(0.001)	(0.001)	(0.02)	(0.000)	(0.001)						
Y_1	0.470*	0.472*	0.088	0.158	0.377	0.512*	1				
	(0.003)	(0.003)	(0.605)	(0.349)	(0.022)	(0.001)					
Y_2	-0.081	-0.210	0.070	-0.237	0.216	0.002	-0.225	1			
	(0.632)	(0.213)	(0.682)	(0.158)	(0.199)	(0.99)	(0.18)				
Y_3	0.488*	0.350	-0.077	0.066	0.222	0.394*	0.892*	-0.244	1		
	(0.002)	(0.034)	(0.649)	(0.698)	(0.186)	(0.016)	(0.000)	(0.146)			

Y_4	0.514*	0.430*	0.060	0.139	0.264	0.479*	0.912*	-0.280	0.948*	1	
	(0.001)	(0.008)	(0.724)	(0.411)	(0.114)	(0.003)	(0.000)	(0.093)	(0.000)		
Y	0.587*	0.610*	0.470*	0.515*	0.603*	0.819*	0.680*	-0.088	0.544*	0.613*	1
	(0.000)	(0.000)	(0.003)	(0.001)	(0.000)	(0.000)	(0.000)	(0.606)	(0.001)	(0.000)	

4.3.2 Test for Multicollinearity

To assess multicollinearity, the Variance inflation factors (VIFs) were calculated for each independent variable and the reciprocals (tolerances). All the VIFs are less than 2 implying none of the independent variables being studied violates the assumption.

Table 5: Multicollinearity

Variable	VIF	Tolerance
Control environment(x_1)	1.410	0.710
Control activities(x_2)	1.300	0.767
Risk assessment(x_3)	1.270	0.786
Info. & communication(x_4)	1.190	0.839
Monitoring(x_5)	1.140	0.876
Mean VIF	1.260	

4.3.3 Test for Heteroscedasticity

A test for Heteroscedasticity performed to confirm that the residuals of the model fitted do not exhibit Heteroscedasticity. A scatter plot showing the residuals against the predicted values was plotted for a virtual indication on the presence or absence of Heteroscedasticity. The scatter plot in figure 2 does not show any signs of an increasing or decreasing pattern of the residuals against the predicted values. The plots are however randomly distributed about zero which is a sign of homoscedasticity.
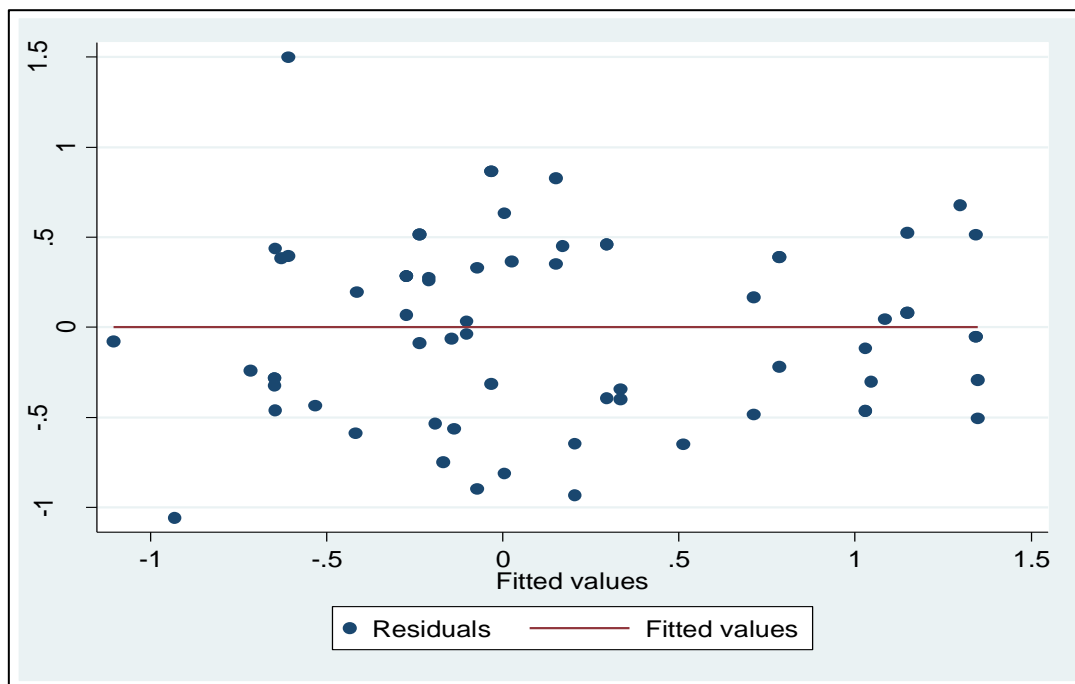

Figure 2: Residual Plot against Predicted Values

Further, a statistical test of Heteroscedasticity was carried out to confirm homoscedasticity with statistical significance. The Breach-Pagan test was carried out where the BP statistic was computed for the residuals. The P-value of the BP chi-square was found to be greater than 0.05represented in table 6 implying that the residuals do not exhibit Heteroscedasticity thus meeting the homoscedasticity assumption.

Table 6: Heteroscedasticity Results

	chi2(1)	Prob > chi2	Conclusions
BP test	2.26	0.1331	Fail to reject H_0

4.4 Effect of Control Environment on Financial Accountability

The regression estimates of the regression model show that Control environment has a significant effect on financial accountability. The table shows a significant regression coefficient estimate of control environment (β =0.519, t=5.760, p-value = 0.000). The P-value of the coefficient estimate is less than 0.05 implying significance at 95% level of confidence. This significant estimate shows that a unit increase in the levels of control environment in the national school set-up would increase the levels of the financial accountability index by 0.519 units through current ratio, debt collection rate, debt ratio and change in public equity.

Table 7: Mixed Effect Model of Control Environment & Financial Accountability

ANOVA	Source	SS	df	MS	Number of obs	=	68.000
	Model	15.510	1	15.510	F(1, 66)	=	33.140
	Residual	30.888	66	0.468	Prob > F	=	0.000
	Total	46.398	67	0.693	R-squared	=	0.334
Model diagnostics	BP chi2(1)	= 0.25	JB chi2(2)	= 0.39	Adj R-squared	=	0.324
	Prob > chi2	= 0.618	Prob > chi2	= 0.822	Root MSE	=	0.684
	D W values	1.901	LL =1.583	UL= 1.641			
FA (Y)		Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
Control Environment (X_1)		0.519	0.090	5.760	0.000	0.339	0.700
_cons		0.135	0.083	1.630	0.108	-0.031	0.301

H_{01}: There no significant effect of Control Environment on financial accountability in national public secondary schools in Kenya.

The P-value of the t-statistic of the coefficient estimate of Control Environment was 0.000 which is less than 0.05 implying a significant effect of Control Environment on financial accountability. The null hypothesis was therefore rejected and a conclusion drawn that Control Environment has a significant effect on financial accountability in national public secondary schools in Kenya. The equation below is generated from the model. The constant term of the model was however found to be insignificant with a p-value of 0.108 which is greater than 0.05 implying that the equation represents a linear function through the origin.

$$Y = 0.519X_1 + \varepsilon \qquad\qquad (1)$$

4.5 Effect of Control Activities on Financial Accountability

The regression estimates of the regression model show that Control Activities has a significant effect on financial accountability. The table shows a significant regression coefficient estimate of Control Activities (β =0.468, t=5.390, p-value = 0.000). The P-value of the coefficient estimate is less than 0.05 implying significance at 95% level of confidence. This significant estimate shows that a unit increase in the levels of Control Activities in the national school set-up would increase the levels of the financial accountability index by 0.468 units through current ratio, debt collection rate, debt ratio and change in public equity.

Table 8: Mixed Effect Model of Control Activities and Financial Accountability

ANOVA	Source	SS	df	MS	Number of obs	=	68
	Model	14.182	1	14.182	F(1, 66)	=	29.050
	Residual	32.216	66	0.488	Prob > F	=	0.000
	Total	46.398	67	0.693	R-squared	=	0.306
Model	BP chi2(1)	= 0.000	JB chi2(2)	= 2.72	Adj R-squared	=	0.295
diagnostics	Prob > chi2	= 0.956	Prob > chi2	= 0.256	Root MSE	=	0.699
	D W values	1.879	LL =1.583	UL= 1.641			
FA (Y)		Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
Control Activities X_2		0.468	0.087	5.390	0.000	0.295	0.642
_cons		0.066	0.086	0.760	0.449	-0.107	0.238

HO2: There no significant effect of Control Activities on financial accountability in national public secondary schools in Kenya.

The P-value of the t-statistic of the coefficient estimate of Control Activities was 0.000 which is less than 0.05 implying a significant effect of Control Activities on financial accountability. The null hypothesis was therefore rejected and a conclusion drawn that Control Activities has a significant effect on financial accountability in national public secondary schools in Kenya. The equation below is generated from the model. The constant term of the model was however found to be insignificant with a p-value of 0.449 which is greater than 0.05 implying that the equation represents a linear function through the origin.

$$Y = 0.468X_2 + \varepsilon \qquad\qquad (2)$$

4.6 Effect of Risk Assessment on Financial Accountability

The regression estimates of the regression model show that Risk Assessment has a significant effect on financial accountability. The table shows a significant regression coefficient estimate of Risk Assessment (β =0.322, t=3.020, p-value = 0.000). The P-value of the coefficient estimate is less than 0.05 implying significance at 95% level of confidence.

Table 9: Risk Assessment and Financial Accountability

ANOVA	Source	SS	df	MS	Number of obs	=	68
	Model	5.626	1	5.626	F(1, 66)	=	9.110
	Residual	40.772	66	0.618	Prob > F	=	0.004
	Total	46.398	67	0.693	R-squared	=	0.121
Model	BP chi2(1)	= 0.13	JB chi2(2)	= 0.86	Adj R-squared	=	0.108
diagnostics	Prob > chi2	= 0.713	Prob > chi2	= 0.650	Root MSE	=	0.786
	D W values	2.036	LL =1.583	UL= 1.641			
FA (Y)		Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
Risk Assessment X_3		0.322	0.107	3.020	0.004	0.109	0.536
_cons		0.226	0.098	2.300	0.024	0.030	0.421

HO₃: There no significant effect of risk assessment on financial accountability in national public secondary schools in Kenya.

The P-value of the t-statistic of the coefficient estimate of Risk Assessment was 0.000 which is less than 0.05 implying a significant effect of Risk Assessment on financial accountability. The null hypothesis was therefore rejected and a conclusion drawn that risk assessment has a significant effect on financial accountability in national public secondary schools in Kenya. The equation below is generated from the model. The constant term of the model was found to be significant with a p-value of 0.02 which is greater than 0.05 implying that the equation represents a linear function through the origin.

$$Y = 0.226 + 0.322X_3 + \varepsilon \qquad (3)$$

4.7 Effect of Information and Communication on Financial Accountability

The regression estimates of the regression model show that Information and Communication has a significant effect on financial accountability. The table shows a significant regression coefficient estimate of Information and Communication (β =0.497, t=4.550, p-value = 0.000). The P-value of the coefficient estimate is less than 0.05 implying significance at 95% level of confidence. This significant estimate shows that a unit increase in the levels of Information and Communication in the national school set-up would increase the levels of the financial accountability index by 0.497 units through current ratio, debt collection rate, debt ratio and change in public equity.

Table 4.24: Mixed Effect Model of Information & Communication and Financial Accountability

ANOVA	Source	SS	df	MS	Number of obs	=	68
	Model	11.088	1	11.088	F(1, 66)	=	20.720
	Residual	35.311	66	0.535	Prob > F	=	0.000
	Total	46.398	67	0.693	R-squared	=	0.239
Model	BP chi2(1)	= 0.01	JB chi2(2)	= 0.08	Adj R-squared	=	0.227
diagnostics	Prob > chi2	= 0.928	Prob > chi2	= 0.962	Root MSE	=	0.731
	D W values	2.025	LL =1.583	UL= 1.641			
FA (Y)		Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	

Information & communication X_4	0.497	0.109	4.550	0.000	0.279	0.715
_cons	0.118	0.089	1.320	0.191	-0.060	0.296

H$_{O4}$: There no significant effect of information and communication on financial accountability in national public secondary schools in Kenya.

The P-value of the t-statistic of the coefficient estimate of Information and Communication was 0.000 which is less than 0.05 implying a significant effect of Information and Communication on financial accountability. The null hypothesis was therefore rejected and a conclusion drawn that Information and Communication has a significant effect on financial accountability in national public secondary schools in Kenya. The equation below is generated from the model. The constant term of the model was however found to be insignificant with a p-value of 0.191 which is greater than 0.05 implying that the equation represents a linear function through the origin.

$$Y = 0.497X_4 + \varepsilon \qquad\qquad (4)$$

4.8 Effect of Monitoring on Financial Accountability
The regression estimates of the regression model show that Monitoring has a significant effect on financial accountability. The table shows a significant regression coefficient estimate of Monitoring (β =0.616, t=5.020, p-value = 0.000). The P-value of the coefficient estimate is less than 0.05 implying significance at 95% level of confidence. This significant estimate shows that a unit increase in the levels of Monitoring in the national school set-up would increase the levels of the financial accountability index by 0.616 units through current ratio, debt collection rate, debt ratio and change in public equity.

Table 4.25: Mixed Effect Model of Monitoring and Financial Accountability

ANOVA	Source	SS	df	MS	Number of obs	=	68
	Model	12.806	1	12.806	F(1, 66)	=	25.160
	Residual	33.592	66	0.509	Prob > F	=	0.000
	Total	46.398	67	0.693	R-squared	=	0.276
Model diagnostics	BP chi2(1) = 0.21		JB chi2(2) = 1.73		Adj R-squared	=	0.265
	Prob > chi2 = 0.646		Prob > chi2 = 0.421		Root MSE	=	0.713
	D W values 1.813		LL =1.583	UL= 1.641			
FA (Y)	**Coef.**	**Std. Err.**	**t**	**P>t**	**[95% Conf. Interval]**		
Monitoring X_5	0.616	0.123	5.020	0.000	0.371		0.861
_cons	0.128	0.087	1.480	0.145	-0.045		0.301

H$_{O5}$: There no significant effect of Monitoring on financial accountability in national public secondary schools in Kenya.

The P-value of the t-statistic of the coefficient estimate of Monitoring was 0.000 which is less than 0.05 implying a significant effect of Monitoring on financial accountability. The null hypothesis was therefore rejected and a conclusion drawn that Monitoring has a significant effect on financial accountability in national public secondary schools in Kenya. The equation below is generated from the model. The

constant term of the model was however found to be insignificant with a p-value of 0.145 which is greater than 0.05 implying that the equation represents a linear function through the origin.

$$Y = 0.616X_5 + \varepsilon \qquad (5)$$

4.9 Joint Effect of Control Systems on Financial Accountability

The results for the regression model show an R-square of 0.634 implying that 63.4% of the variation in financial accountability is explained by the multiple regression model. This imply that only 20.6% of the variation in growth is not explained in this model but by other factors.

The dimensions of control systems were found to have a significant joint effect on financial accountability. The Analysis of Variance (ANOVA) has an F-statistic of 21.56 which has a p-value of 0.000. The p-value of the F-statistic is less than 0.05 showing that the model on the influence of control systems on financial accountability is generally significant. This is means that at the coefficients of control systems are jointly not equal to zero and least one coefficient estimate of the model predictors not equal to zero.

The diagnosis of this model showed that the classical assumptions are also not violated in the simple regression model. The normality assumption was met as shown by the JB statistic which has a p-value of 0.813 that is greater than 0.05. The BP chi-square statistic for also had a p-value of 0.133 which is greater than 0.05 implying that the residuals to this model also exhibit homoscedasticity. The DW statistic generated for this model is also greater than the relative upper limit of the tabulated DW value at 0.05 implying independence of the residuals. The mean VIF of was found to be 1.230 which is less than 2 implying that the independent predictors in the model do not exhibit multicollinearity.

On assessing the coefficient estimates of each predictor, all the variables were found to remain significantly influential to financial accountability except for information and communication (β =0.133, t=1.440, p-value = 0.155). The p-value of the coefficient estimate for information and communication in this model more than 0.05 implying insignificance when jointly assessed with other variables. This could be due to a mediation effect by one of the other predictors of the model which is beyond the scope of the study. The constant term of the model was also found to be insignificant with a p-value of 0.186 which is greater than 0.05 implying that the equation represents a linear function through the origin. The equation below is generated from the multiple regression model.

Table 4.26: Joint Effect Model

ANOVA	Source	SS	df	MS	Number of obs	=	68
	Model	29.455	5	5.891	F(5, 62)	=	21.560
	Residual	16.944	62	0.273	Prob > F	=	0.000
	Total	46.398	67	0.693	R-squared	=	0.635
Model	BP chi2(1)	= 2.26	JB chi2(2)	= 0.41	Adj R-squared	=	0.605

diagnostics	Prob > chi2	= 0.133	Prob > chi2	= 0.813	Root MSE	=	0.523
	D W values	1.953	LL = 1.464	UL= 1.768	Mean VIF	=	1.26
FA (Y)		Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
Control environment (x_1)		0.269	0.078	3.450	0.001	0.113	0.424
Control activities (x_2)		0.296	0.071	4.170	0.000	0.154	0.43o8
Risk assessment (x_3)		0.136	0.065	2.091	0.041	-0.016	0.288
Info. & communication (x_4)		0.133	0.093	1.440	0.155	-0.052	0.318
Monitoring(x_5)		0.343	0.103	3.340	0.001	0.138	0.548
_cons		0.090	0.067	1.340	0.186	-0.044	0.224

$$Y = 0.269X_1 + 0.296X_2 + 0.136X_3 + 0.343\,X_5 + \varepsilon \qquad (6)$$

5. Conclusions and Recommendations

5.1 Conclusions
5.1.1 Effect of Control Environment on Financial Accountability
There exists a positive and significant relationship between control environment and financial accountability in national public secondary schools in Kenya. This implies that when control environment improves, financial accountability will improve.

5.1.2 Effect of Control Activities on Financial Accountability
There exists a positive and significant relationship between control activities and financial accountability in national public secondary schools in Kenya. This implies that when control activities improve, financial accountability will improve.

5.1.3 Effect of Risk Assessment on Financial Accountability
From the foregoing results, it can be concluded that there exists a positive and significant relationship between risk assessment and financial accountability in national public secondary schools in Kenya. This implies that when risk assessment improve, financial accountability will improve.

5.1.4 Effect of Information and Communication
From the results, it can be concluded that there exists a positive and significant relationship between information and Communication and financial accountability in national public secondary schools in Kenya. This implies that when information and Communication improve, financial accountability will improve.

5.1.5 Effect of Monitoring on Financial Accountability
The results lead to a conclusion that there exists a positive and significant relationship between Monitoring and financial accountability in national public secondary schools in Kenya. This implies that when monitoring improves, financial accountability will improve.

5.2 Recommendations

5.2.1 Control Environment and its Effect on Financial Accountability

1) Principals should be accountants and not necessarily teachers. For other BOM members, it should be mandatory to have certificates on accounting, finance and procurement related courses.

2) BOM should be appointed based on integrity and ethical values. Such BOM members therefore will not have self-vested interest in the finances of national public secondary schools managed by them. Appointment of the principal or BOM members should be competitively advertised and appointment based on political interests, bribes or ethnic background but purely merit.

3) All school BOM should enforce formulation and implementation of a positive management philosophy. This should be made known to all BOM members and employees and should be adhered to in all BOM undertakings.

4) The government should introduce an age limit for BOM members, retirees should be avoided as such individuals lack impetus and motivation to scrutinize financial records. Many of them are after the allowances and not committed to their oversight role.

5.2.2 Control Activities and its Effect on Financial Accountability

1) The government should ensure segregation of duties in the public schools, there should be clear roles of the principal, bursar, other BOM members, storekeeper and other employees. Budgeting process and procurement should be done by different individuals.

2) Verification and reconciliation of valuable assets should be done by different independent individuals this will ensure those who authorize expenditure are not the ones that execute the expenditure, thus collusions and opportunity to commit fraud is minimized. The principal should not be left to be the sole manager with other BOM members and employees just being a rubber stamp.

3) The BOM should improve physical controls. Impromptu checks of ongoing projects and approved expenditure should be frequently done. All budgeted expenditures must be compared with actual expenditures and any variances clearly explained. Authentic documentation for all expenditure must be demanded his which ensures physical tracking of valuable assets and ensuring their safety.

4) A lifestyle audit should be done at the expiry of the contract and any misappropriations or mismatch with remuneration identified should be legally dealt with without fear or favor. BOM members should also be exposed to a life style audit at the expiry of their term. Those found culpable should be deregistered and should not be engaged in any other public institution within the country and should be deregistered so as not to allow them to be employed in any public or private institution in Kenya.

5.2.3 Risk Assessment and its Effect on Financial Accountability

1) Key financial risks in national public secondary schools should be identified, risk prone areas and activities should be preempted so that preventive measures are put in place well in advance.

2) Minimal handling of cash either by the bursar or principal should be allowed in public schools as this may be a bait/temptation for misappropriations. No school fees should be paid in cash. The schools should adopt a cash less system so s to reduce risk of loss of cash through theft, misappropriations or leakages. Other mobile money transfer measures should be adopted by national public secondary schools to be used by parents to pay school fees. They should be linked to school bank accounts for easy tracking of the payments.

3) The government should interlink the schools bank accounts to a central accounting information system so that any payments and withdrawals can be tracked. The schools should also have interlinked computers so that those involved in management of finances can easily track expenditures and receipts. All major expenditures must be approved not only by BOM but also relevant government authorities. This will eliminate collusion by BOM members to approve unjustified expenditures where thy have self-interest.

4) Every national public secondary school should have CCTV to monitor all activities in the school. This will reduce pilferage and loss of school property through students and employees. It will also assist in tracking strangers within the School. There should be an insurance policy for all valuable assets of the school so as to avoid heavy losses and enable continued operations due to loss of such items. Security checks should also be tightened in all these schools.

5.2.4 Information and Communication and its Effect on Financial Accountability

1) The government should interlink all schools through a central financial information system to tack activities of every school. All budgets and financial statements of all national public secondary schools should be posted to this website online and subjected to public audit by auditor general. This will allow for public scrutiny of such budgets and financial statements.

2) Budgets must be prepared early enough and must involve input of all the relevant department/sections and such departments should be coopted in the acquisition of budgeted items. Budgets must be given adequate time in BOM meetings for proper scrutiny and necessary adjustment. All budgets must be posted to the government central information website and must be approved by both BOM and relevant government authorities.

3) The government should ensure through independent checks that the budgets and other financial statements are complete, reliable and correct. This will ensure that financial statements are prepared in time, are correctly prepared and reflect a true and fair view of the school. It also implies that budgets and audit reports are analyzed and acted upon.

5.2.5 Monitoring and its Effect on Financial Accountability

1) The government should employ a permanent internal auditor in each national public secondary school. Such an auditor should be independent and report directly to the government on monthly basis Monitoring. The BOM should also carry out regular internal audits to monitor use of finances.

2) There should be frequent external audits by county auditors. Such audits should be objective and reflect the true financial status of the school. Auditors should be scrutinized frequently so that those with self-interest to benefit financially from the audit activities are rooted out. The Principal and bursar should be allowed to evaluate the work done by the auditors and post to the central website. This rating will enable the government to identify effective and less effective auditors. It will also ensure that the auditors carry out their duties objectively, accurately and with the due diligence it deserves.

3) The BOM should take their oversight role seriously. They should frequently visit the schools to monitor implementation of projects and verify budgeted and actual expenditures. BOM should not have vested interest in school finances as this will derail their oversight role.

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