Does Monitoring Influence Financial Accountability? Answers from National Public Secondary Schools in Kenya

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Abstract
The general objective was to assess the effect of monitoring on financial accountability in national public secondary schools in Kenya.103 national public secondary schools in Kenya were used in the study. Agency theory, Fraud triangle theory and accountability theory guided the research. Survey research was used to collect data from a populace of; 103 principals, 103 bursars, 103 BOM chairs. Questionnaires and audited financial statements were used to obtain data. Reliability was tested through Cronbach's Alpha.The association between monitoring and financial accountability was established through a bivariate simple linear regression model which was fitted to assess the influence of Monitoring on financial accountability. The regression coefficient estimate of Monitoring was (β =0.616, t=5.020, p-value = 0.000). It was recommended that frequent external audits by county auditors be done. The principal and bursar should be allowed to evaluate the work done by the auditors and post to the central website.
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1. Introduction

The Kenyan government has put in place internal control measures to regulate the funds invested in education. The board of management (BOM) plays a significant role in identifying and inhibiting theft of funds and shielding the organization's assets, both physical and intangible (Institute of Policy Analysis and Research, 2014). Monitoring is the procedure of weighing the worth of a system's performance over time. Monitoring of internal control should embrace procedures and techniques so that the results of audits and other reviews are quickly resolved. Monitoring is vital given the complex and dynamic environments faced by most organizations as it ensures that organizations are implementing activities as envisioned (Transparency International Kenya, 2014).

Nevertheless, many educational institutions in Kenya still face challenges relating to internal controls like; struggles with liquidity problems, financial reports are not made timely, accountability for the financial resources is still wanting, frauds and misuse of institutional resources. The principals are in control of almost all cash transactions and the BOMs are used a mere rubber stamp. Parents Teachers associations role in many schools is limited to a few activities like fundraising for various development projects of the schools but no follow-ups are made on how the cash raised was later utilized (Simiyu, 2014).

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 inspection carried out on the free day secondary schools in Nairobi, Kiambu, Kajiado and Machakos counties revealed fraudulent deals that include; inflation of enrolment, irregular allocation of funds, procurement of goods and questionable expenditure (Auditor General, 2016/2017).
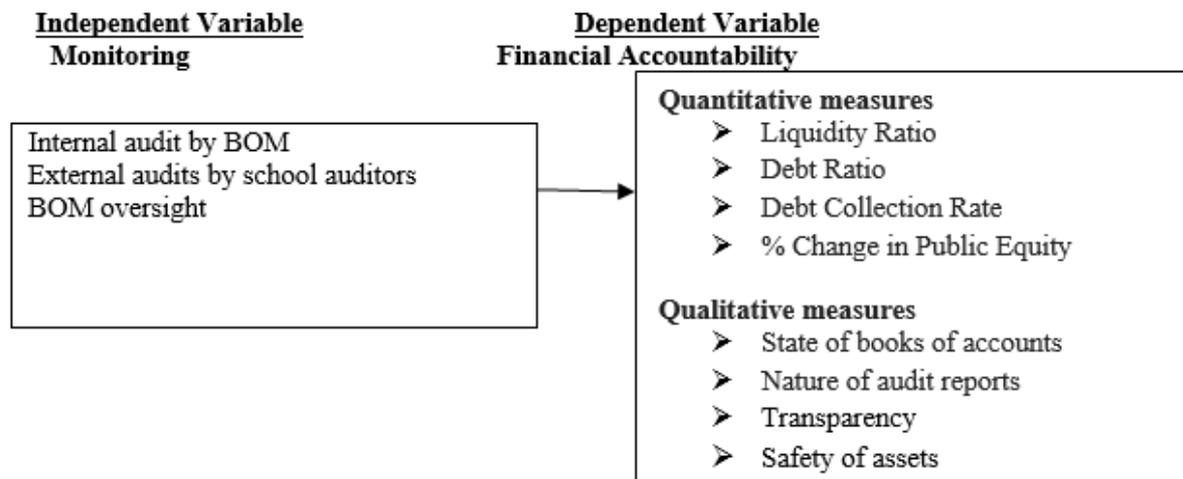
These misappropriations still take place despite the establishment of BOM and presence of external auditors put in place by the government of Kenya. With such misappropriations, the objectives of subsidized secondary school cannot be fully achieved. Those who have tackled this topic have covered other government institutions of higher learning or private businesses while others have done their studies outside Kenya. It is on the basis of this gaps that this study seeks to assess the effect of monitoring on financial accountability in national public secondary schools in Kenya.

2. Literature Review
2.1 Theoretical Review
The study was structured on; Agency theory, Fraud triangle theory and Accountability theory.

2.2 Conceptual Frame Work

Independent Variable — Monitoring

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

Dependent Variable — Financial Accountability

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

2.3 Empirical Literature Review

(Wichenje *et al.*, 2012) found out that in the former western province, an average 17 head teachers were involved in embezzlements of funds and other school property every year while in Kakamega Central district the figures were; an average of 6 principals every year from 2007-2009. Some of the reasons they found responsible for the misuses include there was a long span of period before auditors analyze the books of accounts in schools, signing blank cheques, and at times there was conspiracy with suppliers and auditors, ignorant BOG members, weak internal controls and lack of participation of teachers in the budgetary process among other reasons.

(Osiri, 2015) carried out study "Perceptions of Educational Stakeholders Regarding the Effects of Financial Mismanagement on Physical Facilities in Secondary Schools in Gucha District, Kenya" employed a descriptive survey design and Stratified random sampling technique was used to select 5 boarding schools, 37 day schools, 42 head teachers, 42 Bursars, 42 heads of departments, 42 BOG chairpersons, 337 teachers together with purposive sampling to select 10 quality assurance and standards officers. The study established that financial malpractices were majorly due to the fact that auditing in public secondary schools had not been effective and was unsystematically done. It was recommended that the government should set in place an internal auditing system for a set of schools that is independent of the principals to give checks and balances.

(Ondieki, 2015) Undertook a research entitled "Factors affecting financial management of public secondary schools in Marani Sub-County, Kenya". The study used a descriptive study design and random sampling to collect data from 16 public secondary schools. The respondents of the study were school accountants and head teachers. Results displayed that Bursars/accounts clerk and principals approved that they seldom involved parents, teachers, and students during financial matters of the schools and there was asymmetrical government auditing. The asymmetrical government auditing was found to be the main cause of financial mismanagement among public secondary schools in Marani Sub-County, Kenya. She suggested that government auditing should be consistent and should go through the books of accounts and reply back to the school with recommendations so as to minimize embezzlements and deception.

(Simiyu, 2014) in research entitled" Investigation of factors affecting cash management in public secondary schools: a case of Mombasa county" adopted a descriptive research design and simple random sampling to get information from a target population of 60 respondents consisting of; principals, bursars and chairmen of BOM of public secondary schools within Mombasa County. Simple random sampling was used when selecting a sample. Triangulation was used as a strategy (control) for cultivating the validity and reliability of this study. The data collected was evaluated using descriptive techniques that were conducted with the help of the Statistical Package for Social Science program. The findings of the study demonstrate that training plays an important role in making the BOM more responsible and informed about the role it plays as a guardian of school assets.

3. Research Methodology
3.1 Research Design
A descriptive survey research design was adopted for this study. The design was most appropriate because the sample size was spread all over the country and thus it became easy to reach many respondents, which ensured a more accurate sample in which to draw conclusions.

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

3.5 Sample Population
The sample population consisted of 82 schools composed of 82 principals, 82 bursars, and 82 BOM chairs.

3.6 Data Collection Instruments
Primary data was collected through the use of questionnaires while secondary data was collected through analysis of current ratio, debtors' ratio, debt ratio and change in public equity from audited financial statements.

3.7 Pilot Test
The pilot study was conducted on 9 national public schools which consisted of 27 respondents being that there were three respondents in each school that was randomly sampled throughout the whole country this was 10% of the expected sample size of 246 respondents.

3.7.1 Validity
Factor analysis was used to assess the construct validity. 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.

3.7.2 Reliability Analysis
Internal consistency was measured by use of Cronbach alpha where values of 0.70 or higher was considered sufficient.

3.8 Data Collection Procedure
Both Secondary and 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 and audited financial statements for four years from 2014 to 2017 obtained.

3.10 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.

4. Results and Discussion

4.1 Response rate
The study targeted 246 respondents in 82 schools. Responses were only got from 74 schools a total of 222 questionnaires out of 246 were returned which represents 90.24% of the targeted sample respondents

4.2 Validity Results
KMO and Bartlett's tests were carried with the aim of exploring the sampling adequacy of the data. The KMO statistics for all the constructs were found to be above 0.7 implying the suitability of data for the CFA models. Sampling adequacy was examined by Bartlett's. All Bartlett's statistics had p-values of 0.000 implying adequacy and suitability this is shown in table 4.1

Table 4. 1: KMO and Bartlett's tests

	Items retained	AVE	Squared Correlations	KMO	Bartlett's test x^2	df	P-value
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

4.3 Reliability Results
Cronbach's alpha was used in this study to check on the reliability. All the study constructs had reliability measures above 0.7 from all the items used to measure them. Constructs that had indicators that showed inadequate item-total correlations were further expunged this is shown in table 4.2.

Table 4. 2 Cronbach's Alpha Reliability Table

Construct	Number of Items	Cronbach alpha	Number of items retained	Cronbach alpha after deletion	Conclusion
Monitoring	10	0.623	6	0.745	Reliable
Financial Acc	11	0.697	7	0.801	Reliable

4.4 Descriptive statistics of financial accountability

Secondary data was used to calculate the current ratio, debt collection rate, debt ratio and change in public equity. The current ratios of the tuition, operation and school fund accounts had overall means of 1.742, 1,749 and 1.700 respectively. The standard deviations were; 1.073, 0.99 and 0.798 respectively. The debt ratios components for the tuition, operations, and school fund accounts had an overall mean of 0.460, 0.503 and 0.481 respectively. The standard deviations for tuition, operations and school fund were 0.199, 0.222 and 0.201 respectively. The debt collection rate had an overall mean collection rate of 0.797 and a standard deviation of 0.801. Change in public equity for the tuition, operations and school fund accounts which were measured as percentage changes and had overall means of 0.113, 0.121 and 0.134 respectively with standard deviations of 0.125, 0.212 and 0.134 respectively. Table 4.3 shows the descriptive analysis of financial accountability.

Table 4.3: Descriptive analysis of financial accountability

Variable	Mean	Std. Dev.	Min	Max	Observations	
Current ratio Tuition Account	1.742	1.073	0.000	5.002	N =	136
Current ratio Operation Account	1.749	0.999	0.501	5.001	N =	136
					n =	68
					T =	4
Current ratio School Fund	1.700	0.798	0.889	4.615	N =	136
					n =	68
					T =	4
Debt collection rate	0.797	0.801	0.000	6.342	N =	136
					n =	68
					T =	4
Debt ratio Tuition Account	0.460	0.199	0.000	1.000	N =	136
					n =	68
					T =	4
Debt ratio Operation Account	0.503	0.222	0.000	1.501	N =	136
					n =	68
					T =	4
Debt ratio School Fund	0.481	0.201	0.000	0.844	N =	136
					n =	68
					T =	4
Change in equity Tuition Account	0.113	0.125	-1.000	0.356	N =	136
					n =	68
					T =	4
Change in equity Operation Account	0.121	0.212	-0.903	1.101	N =	136
					n =	68
					T =	4
Change in equity School Fund	0.134	0.148	-0.224	0.919	N =	272
					n =	68
					T =	4

4.5 Descriptive Statistics of Monitoring

Ten indicators were used to establish the relationship between monitoring and financial accountability. The first variable sought to find out among other indicators the perception of the respondents that there are independent process checks of controls activities on ongoing basis. Majority (50%) of the respondents strongly agreed, 84.6% of the respondents agreed or strongly agreed that there are independent process checks of controls activities on ongoing basis while 7.7% of the respondents disagreed or strongly disagreed. The results imply that in majority national public secondary schools, there are independent process checks of controls activities on ongoing basis, monitoring is therefore done consistently and thus risk prone areas can be easily identified and preventive

measures undertaken. However in some few schools, independent process checks of controls activities on ongoing basis is lacking.

Respondents were also asked the question whether internal reviews of implementation of internal controls are conducted periodically. Majority (36.5%) of the respondents agreed that internal reviews of implementation of internal controls are conducted periodically while 23.1% of the respondents were neutral. Some 65.4% of the respondents agreed or strongly agreed that internal reviews of implementation of internal controls are conducted periodically while 11.5% of the respondents disagreed or strongly disagreed. From the results it can be concluded that in majority of the schools, internal reviews of implementation of internal controls are conducted periodically. Though in about 10% of the national public secondary schools, internal reviews of implementation of internal controls are not conducted periodically.

Regarding the question of whether external auditors visit the school frequently. Majority (47.1%) of the respondents agreed, 67.3% of the respondents agreed or strongly agreed that external auditors visit the school frequently, 18.3% of the respondents were neutral while 14.5% disagreed or strongly disagreed. The overall results imply that in majority of the national public schools, the external auditors visit the school frequently. However in some few schools, external auditors do not visit the school frequently.

The study also sought what the respondents perceived of the question that external auditors are committed and give objective reports. Majority (43.3%) of the respondents agreed, 76% of the respondents agreed or strongly agreed that external auditors are committed and give objective reports, 15.4% of the respondents were neutral while 8.7% disagreed or strongly disagreed. From the overall results, many external auditors are committed and give objective reports. But there is a small percentage of external auditors who are not committed to their work and do not give objective reports. Such external auditors may ask for bribed to cover-up fraud

Respondents were also asked their view on whether timely review of audit reports assist in improving financial accountability. Majority (46.2%) of the respondents agreed that timely review of audit reports assist in improving financial accountability while 8.7% of the respondents were neutral. Some 80.8% of the respondents agreed or strongly agreed that timely review of audit reports assist in improving financial accountability while 10.6% of the respondents disagreed or strongly disagreed. These results depict that many respondents support the fact that timely review of audit reports assist in improving financial accountability.

The results also determined the distribution of the indicator that the BOM monitor the actual uses of funds budgeted and approved. Majority (42.3%) of the respondents agreed, 79.8% of the respondents agreed or strongly agreed that the BOM monitor the actual uses of funds budgeted and approved, 8.7% of the respondents were neutral while 11.5% disagreed or strongly disagreed.

From the results it can be concluded that in majority of the schools, the BOM monitor the actual uses of funds budgeted and approved. Nevertheless in about 10% of the schools, BOM does not monitor the actual uses of funds budgeted and approved.

Respondents were also asked their view on whether internal reviews of internal controls are conducted periodically. Majority (44.2%) of the respondents agreed that internal reviews of internal controls are conducted periodically while 19.2% of the respondents were neutral. Some 68.2% of the respondents agreed or strongly agreed that internal reviews of internal controls are conducted periodically while 12.5% of the respondents disagreed or strongly disagreed. These results indicate that in majority of the schools, internal reviews of internal controls are conducted periodically. However in some few schools, internal reviews of internal controls are not conducted periodically thus in such schools new technological development of improving internal controls will not be implemented and fraudsters may develop better ways of leakages that cannot be detected.

The respondents were also asked about whether the BOM undertake regular comparison of actual with budgeted expenditure. Majority (44.2%) of the respondents strongly agreed, 82.7% of the respondents agreed or strongly agreed that the BOM undertake regular comparison of actual with budgeted expenditure. 5.8% of the respondents were neutral while 11.6% disagreed or strongly disagreed. From the foregoing results, in majority of the national public schools, the BOM regularly undertake regular comparison of actual with budgeted expenditure. However in about 10% of the schools, the BOM do not undertake regular comparison of actual with budgeted expenditure.

The study also sought what the respondents perceived of the question that the BOM verify all financial approvals and monitors use of funds. Majority (47.1%) of the respondents agreed, 80.8% of the respondents agreed or strongly agreed that the BOM verify all financial approvals and monitors use of funds, 11.5% of the respondents were neutral while 7.7% disagreed or strongly disagreed. The results confirm that in majority of the national public secondary schools, the BOM verify all financial approvals and monitors use of funds. However in some few schools, the BOM does not verify all financial approvals and do not monitor use of funds.

The respondents were also asked their view on the fact that the frequency and objectivity of internal audits determines level of financial accountability. Majority (49%) of the respondents strongly agreed that the frequency and objectivity of internal audits determines level of financial accountability while 7.7% of the respondents were neutral. Some 76.9% of the respondents agreed or strongly agreed that there are independent process checks of

controls activities on ongoing basis while 15.4% of the respondents disagreed or strongly disagreed. From the results it can be concluded that majority of the respondents believe that the frequency and objectivity of internal audits determines level of financial accountability.

Table 4.1 Indicators Measuring Control Environment

Indicator		1	2	3	4	5	Total
sf1	Freq.	6	10	16	71	101	204
	Percent	2.9%	4.8%	7.7%	34.6%	50.0%	100.0%
sf2	Freq.	10	14	47	74	59	204
	Percent	4.8%	6.7%	23.1%	36.5%	28.9%	100.0%
sf3	Freq.	12	18	37	96	41	204
	Percent	5.8%	8.7%	18.3%	47.1%	20.2%	100.0%
sf4	Freq.	8	10	31	88	67	204
	Percent	3.9%	4.8%	15.4%	43.3%	32.7%	100.0%
sf5	Freq.	14	8	18	94	70	204
	Percent	6.7%	3.9%	8.7%	46.2%	34.6%	100.0%
sf6	Freq.	10	14	18	86	76	204
	Percent	4.8%	6.7%	8.7%	42.3%	37.5%	100.0%
sf7	Freq.	6	20	39	90	49	204
	Percent	2.9%	9.6%	19.2%	44.2%	24.0%	100.0%
sf8	Freq.	12	12	12	78	90	204
	Percent	5.8%	5.8%	5.8%	38.5%	44.2%	100.0%
sf9	Freq.	4	12	23	96	69	204
	Percent	1.9%	5.8%	11.5%	47.1%	33.7%	100.0%
Sf10	Freq.	22	10	16	56	100	204
	Percent	10.6%	4.8%	7.7%	27.9%	49.0%	100.0%

Factor analysis was used to generate factor scores that were used as latent variables to assess the influence of Monitoring on financial accountability using simple linear regression. A scatter plot of financial accountability against Monitoring in figure 4. 1 shows an increasing pattern which is an indication of a positive linear relationship between Monitoring and financial accountability.
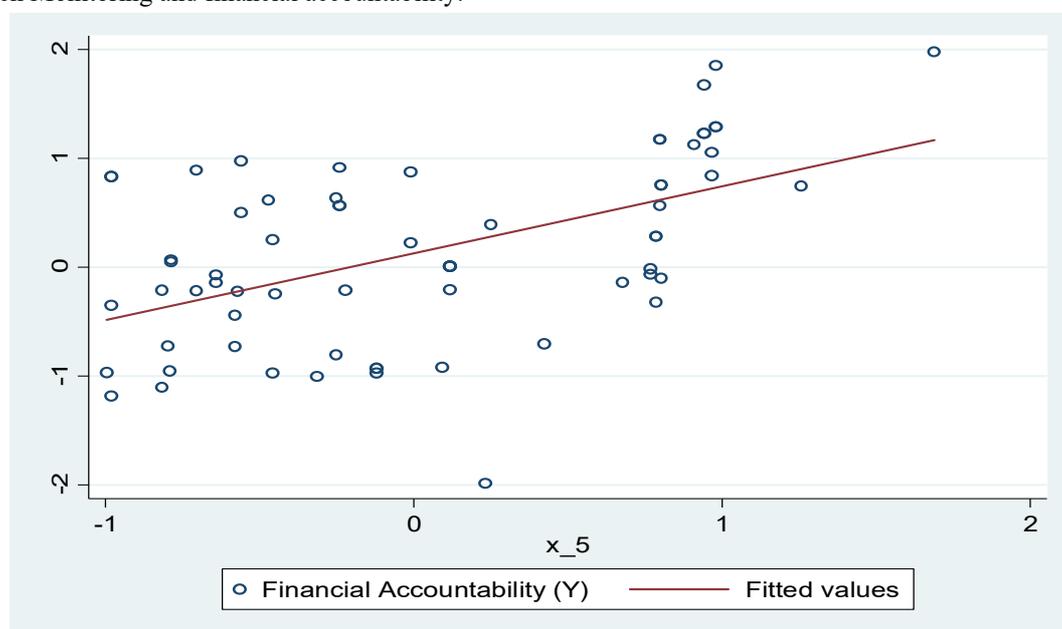

Figure 4.1: Monitoring and financial accountability

A bivariate simple linear regression was fitted to assess the influence of Monitoring on financial accountability. The results for the regression model in table 4.2 Show an R-square of 0.276 implying that 27.6% of the variation in financial accountability is explained by the one predictor model. This further implies that 63.7% of the variation in growth is not explained in this model but by other factors not included in the model.

The Analysis of Variance (ANOVA) had an F-statistic of 25.16 which has a p-value of 0.000. The p-value of the F-statistic is less than 0.5 showing that the model on the influence of Monitoring on financial accountability is

generally significant. This is means that the coefficient of Monitoring in the model is at least not equal to zero. Diagnosis of this bivariate 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 0.421 that is greater than 0.05. The BP chi-square statistic for also had a p-value of 0.646 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 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 4.2: 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	BP chi2(1)	= 0.21	JB chi2(2)	= 1.73	Adj R-squared	=	0.265
diagnostics	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

HO$_1$: 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 was 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.

$$Y = 0.616X_5 + \varepsilon$$ ………………………………………………………….......**Equation 4.1**

5. Conclusions and recommendation
5.1 Conclusion
The results leads 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. Monitoring, may be improved through, frequent internal audit by BOM, objective external audits by school auditors and improved BOM oversight. Financial accountability will improve through, internal audit trail of all revenues and expenditure, verification of actual and budgeted expenditure, finances will be used for the intended purpose and unauthorized expenditure and opportunity and rationalization of fraud will be eliminated

5.2 Recommendations
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.

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.

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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