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Control Environment and Financial Accountability: An Analysis of the Kenyan National Public Secondary Schools

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Abstract:

The study sought to evaluate the effect of control environment on financial accountability in national public secondary school in Kenya. The study was guided by; Agency theory, Fraud triangle theory and accountability theory. 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 analysis of audited financial statements. Reliability of the research instruments was tested through Cronbach's Alpha. Factor analysis was used to assess construct validity. Simple linear regression was used to establish the relationship between control environment and financial accountability. The results for the regression model showed an R-square of 0.344. The Analysis of Variance (ANOVA) had an F-statistic of 18.360 with a p-value of 0.000. The regression coefficient estimate of control environment was ($\beta = 0.570$, $Z = 4.280$, p -value = 0.000). It was concluded that there exists a positive and significant relationship between control environment and financial accountability in national public secondary schools in Kenya. It was recommended that control environment be improved through, selecting BOM that are committed and have accounting knowledge, enforcing a positive management philosophy for efficiency, and improving integrity and ethical values of BOM.

Keywords: Control environment, management philosophy, integrity and ethical values

1. Introduction

The most effective way of reducing poverty, boosting economic growth and promoting human rights is investment in education. Internal control measures have been put in place by governments across the globe to ensure efficient use of the funds invested in education. Internal control systems relate to the processes put in place by the board of directors to support the achievement of objectives. It assists in detecting and preventing fraud (Institute of Policy Analysis and Research (IPAAR), 2014).

Control environment guides and influences the consciousness of employees to achieve set targets. The components of control environment include; integrity, ethical values and competence of employees, management's philosophy and operating style, the way management assigns authority and responsibility, organizes and develops its people, and the attention and direction provided by the board of directors (Committee of Sponsoring Organization of Treadway Commission (COSO), 2013).

The government of Kenya has placed a lot of emphasis on prudent use of finance and has put in place financial regulations that must be adhered to. Any individual who goes against such regulations may face disciplinary action under the provisions of the constitution, the penal code, and the code of regulations for civil servants and the teachers' service commission (Ministry of Education Science and Technology (MOEST), 2010)

Principals and head teachers of secondary schools manage huge finances and thus must be made accountable for efficiency and effectiveness (Wango & Gatere, 2014). The Board of Management and head teachers must attempt to cope with the transformative changes and financial accountability is part of this process. Principals and Board of Management must account for public funds and prevent fraud; they must recognize that finances must be used more efficiently (Ministry of Education Science and Technology, 2012)

2. Theoretical Framework

2.1. Agency Theory

This theory was postulated by Jensen and Meckling (1976). The theory describes how to effectively manage relationships organize relations where one an individual decides the work to be done while another party does the work. In this relationship, the principal hires an agent to do the work, or to perform a task on behalf of the principal. Sometimes

the agent may portray self-interest behavior at the expense of the principal. Agency theory is relevant to the management of finances of public secondary schools in Kenya since the BOM and PTAs are agents engaged by the government, parents and other stakeholders to manage the school on their behalf. The school principals, BOM and PTAs should, therefore, act in the best interest of the government, parents and other stakeholders and be accountable for all funds allocated to them so as to ensure that the purpose of education at all levels is achieved. Since the government is aware that school principals, BOMs and PTAs may have conflicting interests with those of the GOK, parents and other stakeholders, the GOK has put in place internal control systems as an agency cost to ensure finances in public secondary school are managed effectively. The internal control systems, therefore, should ensure that there is financial accountability so as to protect the interest of the government and other stakeholders.

2.2. *Fraud Triangle Theory*

The theory was developed by Cressey (1953) as he studied the behavior of fraudsters. From the study, he established that circumstances can make individuals to violate the trust and commit fraud. He postulates that for fraud to occur, pressure, opportunity and rationalization must be present. Cressey further stated that people violate this trust when they conceive of themselves as having a financial problem that is non-shareable and have knowledge or awareness that this problem can be secretly resolved by a violation of the position of financial trust. The theory suggests that employees commit fraud when they have the opportunity to do so, when they are motivated to do so, and when they can justify or rationalize their behavior (Cressey, 1953). Fraud triangle theory is relevant in understanding why some principals and other BOM members in public secondary schools commit fraud and therefore fail to be accountable for funds allocated to them. The school is an organization like any other and some of the agents such as principals, bursars, teachers and BOM members may be motivated by personal gains i.e. pressure to commit fraud, some may be fraudulent because opportunity exist for committing fraud and they can easily get away with it because of weak internal controls. While some still may rationalize fraud by justifying how hard they work to make things right in the school and therefore deserve compensation. However, if opportunity to commit fraud is reduced through tight internal controls then fraud will be significantly reduced and thus there will be increased accountability.

2.3. *Accountability Theory*

This theory was postulated by Tetlock and Lerner (1999). Accountability theory explains how the perceived need to justify one's behaviors to another party causes one to consider and feel accountable for the process by which decisions and judgments have been reached. In turn, this perceived need to account for a decision-making process and outcome increases the likelihood that one will think deeply and systematically about one's procedural behaviors (Tetlock & Lerner, 1999). They further propose that several mechanisms may increase accountability perceptions these include; the presence of another person, identifiability, and expectation of evaluation. Recent research has shown that information technology design artifacts of systems can manipulate the four core components of accountability theory; identifiability, expectation of evaluation, awareness of monitoring, and social presence. This improves employee's accountability toward organizational system security without disruptive interventions or training (Trevor, Anderson & Didier, 2016). Accountability theory is relevant to this study since it will assist in understanding ways through which accountability can be enhanced through internal controls. The perceived need to account for a decision-making process and outcome increases the likelihood that one will think deeply and systematically about their actions this is therefore a virtue that if adopted by principals and other BOM members, then there shall be high degree of accountability. Expectation of evaluation, awareness of monitoring, and social presence through internal controls mean that the principals and BOM are aware that the government will verify their financial statements through external auditing and give audit report for which lack of accountability will be punishable. The fact that other stake holders are interested in monitoring financial accountability is social presence, which enhances transparency and reduces fraud.

2.4. *Literature Review*

Mangoensetono (2012), carried out a study entitled "An empirical analysis on the impact of the control environment in preventing fraud". The study used qualitative research design. Information was obtained from four companies in Netherlands. Data was collected by use of questionnaires and interview schedules. The Results established that improved ethical activities, a whistleblower policy, leadership style, ethical climate and board of director's oversight significantly reduces fraud. Further the study established that more fraud occurs in companies where fraud was not punished equally by management. In conclusion the study recommends setting the right tone at the top to reduce fraudulent activities.

Zauwiyah & Mariati (2008) carried out a study entitled "The control environment, employee fraud and counterproductive workplace behavior: An empirical analysis". Exploratory research design and a sample of 433 employees in Malaysia was used. Data was collected through the use of questionnaire. Inferential analysis consisted of factor analysis and regression. The findings indicate that control environment had more influence on organizational members' behaviors than existing codes of conducts and that fraud and abuse was a result of weak control environment. They therefore recommend that an organization must put in place an information system that can detect fraudulent behaviors and at the same time develop the right control environment that can prevent fraudulent activities.

Nyakundi, Okioga, Ojera & Nyamao (2015) carried out a study entitled "An assessment of the effect of accounting practices on the management of funds in public secondary schools: a study of Kisii central district Kenya". Survey research design was used to collect data from 45 Principals and 45 Bursars from Kisii central district using questionnaires. Analyzed was done using frequency distributions, weighted means, Pearson's correlation coefficient and regression

analysis. The study established a positive relationship between the levels of management of funds in public secondary schools the extent of use of accounting Practices. The results further revealed that little action was taken against corrupt or inefficient head teachers. It was also established that some accounts clerks and head teachers had little knowledge in financial management though they were charged with planning and implementing expensive projects in schools. Such projects were found to collapse due to poor supervision and misappropriation of funds. The study concluded that accounting practices positively influences management of funds in public secondary schools. They recommend the use of such accounting practices to a very large extent so as to improve the general management of funds in public secondary schools in Kenya.

Oduol (2011) in a study entitled "Ethical issues: a case study of secondary school leaders in Kenya" used case study research design to collect data from 40 respondents in the former Nyanza province. Purposive sampling was used to identify respondents which included; school principals, board members, heads of departments, school bursars and parents. Social constructivist theoretical framework was used for analysis. Findings indicate challenges in ethical values and different priorities. Some auditors demanded for bribes while some school board members sought for favors such as tenders to supply goods which compromised objectivity in monitoring.

Osiri (2012) carried out a study which sought to establish the "Factors contributing to financial mismanagement and misappropriation in public secondary schools in Gucha district, Kenya". The study adopted descriptive survey design and collected data from 5 boarding schools, 37-day schools, 42 head teachers, 42 Bursars, 42 heads of departments, 42 BOG chairpersons, 337 teachers. Purposive sampling was used to select 10 quality assurance officers. Data collected was analyzed using; means, frequency counts and percentages. It was established that the accounting officers in some schools including the principal were not properly qualified for their duties. Some store keepers doubled as the account's clerks without any relevant qualifications this is a loophole that was found to enhance the misappropriations. Most principals were found to lack adequate skills to carry out internal controls. The study also found out that most BOM members were weak, did not understand financial reports presented and did not bother to verify expenditures thus they made poorly informed decisions. Majority were retirees from public service some of whom were hungry for money and were only interested in the allowances. It was recommended that even elaborate financial control measures can be put in place, the basic trust of the individual principal as the chief executive officer of the institutions remains a key factor in financial management the principals ethical values, management style and way of allocating and delegating duties are key in efficient financial management and prevention of fraud.

Ochieng (2013) in a study entitled "Challenges Facing Head Teachers in Financial Management in Public Secondary Schools: A Case of Kisumu East District Kenya", used a survey design to collect data from 41 public secondary schools the respondents included; head teachers, deputy head teachers, bursars/ account clerks and the district schools auditor. Data collection tools used included; a questionnaire for head teachers, deputy head teachers and bursars/ account clerks, an observation tool for head teachers and an interview schedule for the district school's auditor. A total of 93 respondents filled and returned the questionnaires.

An observation tool was used in 32 public secondary schools whereas interview schedule was used on the District schools' auditor, to confirm the data collected. Quantitative data collected through questionnaire and observation checklist were analyzed using descriptive statistics in form of means, frequency counts, percentages and correlation. Qualitative data collected through questionnaires and interview was organized into themes and sub themes as they emerged in an on-going process. The findings of the study showed that major challenges facing head teachers in financial management in public secondary schools were as a result of poor control environment which were related to; doubling of roles, low salaries of bursars and accounts clerks, incompetent bursars/accounts clerks and storekeepers, incompetent procurement committee, inadequate auditing knowledge by the head teacher, irregular auditing of schools by district auditors and inability to prepare books of accounts up to final accounts. This therefore led to over spending and fraudulent activities that may go unnoticed by the principle, the BOM and PTAs due to lack of technical skills.

2.5. Conceptual Framework

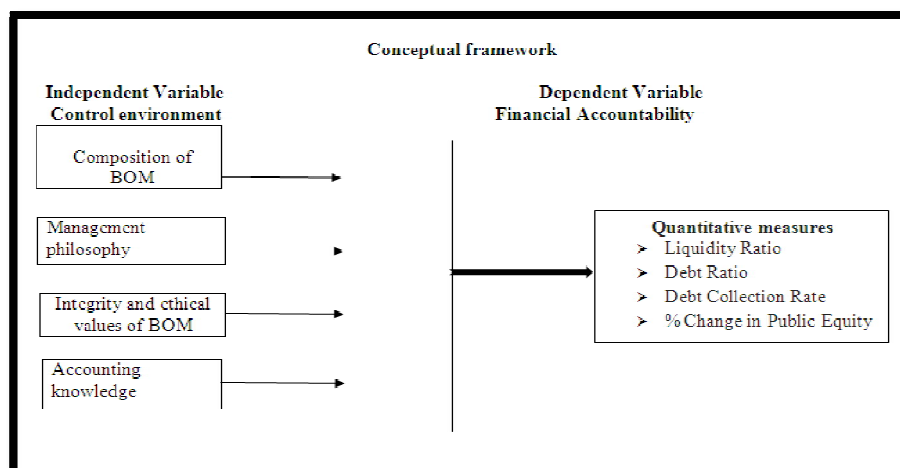


Figure 1: Conceptual Framework

3. Methodology

Descriptive survey research design was adopted for this study. Survey design was most appropriate for this study because of the nature of variables in this study that is concerned with finding out what relationship exists between control environment and financial accountability. The study population for this study was 309 consisting of; 103 principals, 103 bursars, 103 BOM chairs.

3.1. Research Instruments

Primary data was collected by use of questionnaires. Secondary data was collected through analysis of audited financial statements to give accurate quantitative information on the state of accountability in public national schools in Kenya. Factor analysis was used to assess construct validity of the questionnaire. Cronbach's alpha which is the most common internal consistency technique was used in this study to check on the reliability of the questionnaire.

3.2. Validity

Factor analysis was used to assess 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.

	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
Financial Acc	7	0.514	0.188	0.6	62.261	21	0.000

Table 1: CFA Results Used to Assess Construct Validity

Table 1 shows the control environment construct validity as established by Bartlett's test.

3.3. Reliability Analysis

Cronbach alpha was used where a value of 0.70 or higher was considered sufficient.

Construct	Number of Items	Cronbach Alpha	Number of Items Retained	Cronbach Alpha After Deletion	Conclusion
Control environment	11	0.513	8	0.717	Reliable
Financial Acc	11	0.697	7	0.801	Reliable

Table 2: Cronbach's Alpha Reliability Table

4. Data Analysis and Presentation

Descriptive statistics comprised frequencies; mean, standard deviation and variance. Inferential statistics was used to measure the relationships and differences between variables. This comprised regression analysis, testing for autocorrelation and multicollinearity.

4.1. Response Rate

The study targeted 252 respondents in 84 schools. Responses were only got from 74 schools which is 88.095%. From the targeted 252 respondents, only 222 questionnaires were returned giving a total response rate of 88.095% which was deemed adequate for the study. This response rate was considered adequate based on postulates by various scholars such as Edward et al, 2002 who considered a response rate of below 60% as poor while that above 60% as adequate.

Targeted		Returned questionnaires		Response rate	
schools	respondents	Schools	Respondents	Schools	Respondents
84	252	74	222	88.095%	88.095%

Table 4: Response Rate

4.2. Descriptive Results

One of the indicators sought to find out the perception of the respondents that BOM is composed of individuals who have accounting knowledge. The majority (28.9%) of the respondents agreed, 40.4% of the respondents agreed or strongly agreed that BOM is composed of individuals who have accounting knowledge while 43.3% of the respondents disagreed or strongly disagreed.

The between results show that for some (34.2%) of the schools, there were at least some respondents who strongly disagreed that BOM is composed of individuals who have accounting knowledge while some (34.2%) of the schools, there were at least some respondents who were neutral. The "within" results show the proportion of respondents who actually responded to each category of the responses within an organization. On average, within the 20 organizations

that at least had respondents who agreed, only 66.7% of the studied respondents actually agreed that BOM is composed of individuals who have accounting knowledge. The results imply that more than 30% of the respondents believe that BOM lack accounting knowledge. This implies that some BOM members may be incapable of understanding and interpreting financial statements and records. A scenario that may compromise financial accountability

On the question relating to whether the composition of the BOM has an effect on how funds are managed in your organization, Majority (42.3%) of the respondents strongly agreed, 75% of the respondents agreed or strongly agreed that the composition of the BOM has an effect on how funds are managed in your organization, 8.7% of the respondents were neutral while 16.3% disagreed or strongly disagreed. The between results show that in most (71.1%) of the schools, there were at least some respondents who strongly agreed that the composition of the BOM has an effect on how funds are managed in your organization while for some (10.5%) of the schools, there were at least some respondents who strongly disagreed that the composition of the BOM has an effect on how funds are managed in your organization. The "within" results show the proportion of respondents who actually responded to each category of the responses within an organization. On average, within the 27 organizations that at least had respondents who were neutral, only 60% of the studied respondents actually were neutral that the composition of the BOM has an effect on how funds are managed in their organization. The overall results, therefore, indicate that to a large extent (75%) composition of the BOM has an effect on financial accountability. Thus, if BOM was to be composed of people with accounting knowledge and integrity, financial accountability would improve.

The study also sought what the respondents perceived of the question that BOM has a working and documented philosophy which is adhered to, Majority (40.4%) of the respondents agreed, 55.8% of the respondents agreed or strongly agreed that BOM has a working and documented philosophy which is adhered to, 17.3% of the respondents were neutral while 26.9% disagreed or strongly disagreed. The between results show that in most (63.2%) of the schools, there were at least some respondents who agreed that BOM has a working and documented philosophy which is adhered to while for some (34.2%) of the schools, there were at least some respondents who disagreed. On average, within the 24 organizations that at least had respondents who agreed, only 68.8% of the studied respondents actually agreed that BOM has a working and documented philosophy which is adhered to.

These results imply that in the majority of the schools (55.8%), there is a working and documented philosophy which is adhered to this is a great strength for such schools since they will ensure that integrity issues are dealt with amicably. All BOM undertakings will be guided by the philosophy and this will improve financial accountability.

The results also determined the distribution of the indicator that BOM's philosophy has a positive role in enhancing financial accountability, Majority (37.5%) of the respondents agreed, 62.5% of the respondents agreed or strongly agreed that BOM's philosophy has a positive role in enhancing financial accountability, 13.5% of the respondents were neutral while 24.1% disagreed or strongly disagreed.

The between results show that in most (52.6%) of the schools, there were at least some respondents who agreed that BOMs philosophy has a positive role in enhancing financial accountability while for some (31.6%) of the schools, there were at least some respondents who disagreed. On average, within the 20 organizations that at least had respondents who agreed, only 68.3% of the studied respondents actually agreed that BOMs philosophy has a positive role in enhancing financial accountability.

The results affirm that many of the respondents believe that the presence of a documented philosophy and strict adherence to management philosophy will enhance financial accountability. This will be the blueprint for any actions taken by the BOM.

The respondents were also asked about whether BOM are scrutinized for integrity and good conduct before engagement to a school, Majority (42.3%) of the respondents strongly agreed, 68.3% of the respondents agreed or strongly agreed that BOM are scrutinized for integrity and good conduct before engagement to a school, 10.6% of the respondents were neutral while 21.2% disagreed or strongly disagreed.

The between results show that for some (10.5%) of the schools, there were at least some respondents who strongly disagreed that BOM is scrutinized for integrity and good conduct before engagement to a school while some (18.4%) of the schools, there were at least some respondents who were neutral. The "within" results show the proportion of respondents who actually responded to each category of the responses within an organization. On average, within the 21 organizations that at least had respondents who strongly agreed, only 79.4% of the studied respondents actually strongly agreed that BOM is scrutinized for integrity and good conduct before engagement to a school. The results depict the fact that in many schools, BOM is scrutinized for integrity and good conduct before engagement by a school this is significant in knowing the past conduct of such BOM members that may influence the present and future conduct and will ensure that anyone with integrity issues is locked out from managing public schools. However, in more than 10% of the respondents still believe that no scrutiny is done on the integrity and conduct of BOM members before engaging them this can be a dangerous risk as individuals with tainted integrity may be engaged as BOM members which may impact negatively on financial accountability.

The study also sought what the respondents perceived of the question that BOM has no vested interest in school expenditures and supplies, Majority (25%) of the respondents strongly agreed, 48.1% of the respondents agreed or strongly agreed that BOM has no vested interest in school expenditures and supplies, 19.2% of the respondents were neutral while 31.7% disagreed or strongly disagreed. The between results show that for some (23.7%) of the schools, there were at least some respondents who strongly disagreed that BOM has no vested interest in school expenditures and supplies while some (36.8%) of the schools, there were at least some respondents who were neutral. The "within" results show the proportion of respondents who actually responded to each category of the responses within an organization. On average, within the 18 organizations that at least had respondents who strongly agreed, only 55.9% of the studied

respondents actually strongly agreed that BOM has no vested interest in school expenditures and supplies. The overall results indicate that more than 30% of the respondents believe that BOM has vested in school expenditures and supplies. This implies that some BOM members may want to be suppliers and as such, they cannot closely monitor fishy deals with other suppliers since they are also partisan. Such BOM members are likely to cover any fraudulent activities so that they can get favours of supplying goods and services.

The majority (30.8%) of the respondents agreed that the ethical behaviours and integrity of the BOM enhance financial accountability while 22.1% of the respondents were neutral. Some 59.7% of the respondents agreed or strongly agreed that the ethical behaviours and integrity of the BOM enhances financial accountability while 18.3% of the respondents disagreed or strongly disagreed. The between results show that in most (57.9%) of the schools, there were at least some respondents who agreed that the ethical behaviours and integrity of the BOM enhances financial accountability while for some (7.9%) of the schools, there were at least some respondents who strongly disagreed that the ethical behaviours and integrity of the BOM enhances financial accountability. The "within" results show the proportion of respondents who actually responded to each category of the responses within an organization. On average, within the 22 organizations that at least had respondents who disagreed, only 73.8% of the studied respondents actually disagreed that the ethical behaviours and integrity of the BOM enhance financial accountability. These results imply that if the BOM were people of integrity, they will not get engaged in fraudulent activities and personal interests will not exist. Suppliers will be evaluated objectively and any fraudulent activities will be dealt with amicably and thus there will be improved financial accountability.

The results also determined the distribution of the indicator that the BOM provides feedback to all stakeholders about undertakings of the school, Majority (36.5%) of the respondents agreed, 61.5% of the respondents agreed or strongly agreed that the BOM provides feedback to all stakeholders about undertakings of the school, 15.4% of the respondents were neutral while 23.1% disagreed or strongly disagreed. The between results show that in most (60.5%) of the schools, there were at least some respondents who agreed that the BOM provides feedback to all stakeholders about undertakings of the school while for some (29%) of the schools, there were at least some respondents who disagreed. On average, within the 23 organizations that at least had respondents who strongly agreed, only 60.8% of the studied respondents actually strongly agreed that the BOM provides feedback to all stakeholders about undertakings of the school. The results indicate that least in more than 20%, the BOM does not provide feedback to all stakeholders about undertakings of the school. This implies a lack of transparency and may mean that loss of assets, fraudulent activities, and inaccuracy of records and financial statements will not be detected and root causes established.

Regarding the question of whether the BOM is committed to their oversight role, Majority (38.5%) of the respondents agreed, 72.2% of the respondents agreed or strongly agreed that BOM are committed to their oversight role, 6.7% of the respondents were neutral while 21.2% disagreed or strongly disagreed. The between results show that in most (68.4%) of the schools, there were at least some respondents who agreed that BOM is committed to their oversight role while for some (23.7%) of the schools, there were at least some respondents who disagreed. On average, within the 26 organizations that at least had respondents who strongly agreed, only 62.7% of the studied respondents actually strongly agreed that BOM is committed to their oversight role.

On the question on whether policies and procedures for authorizations established are adhered to in all BOM undertakings, Majority (46.2%) of the respondents agreed that policies and procedures for authorizations established are adhered to in all BOM undertakings while 10.6% of the respondents were neutral, while 9.7% of the respondents disagreed or strongly disagreed. The between results show that in most (68.4%) of the schools, there were at least some respondents who agreed that policies and procedures for authorizations established are adhered to in all BOM undertakings while for some (10.5%) of the schools, there were at least some respondents who disagreed. On average, within the 26 organizations that at least had respondents who agreed, only 69.2% of the studied respondents actually agreed that policies and procedures for authorizations established are adhered to in all BOM undertakings. The overall finding reveals that in many schools more than (68%) policies and procedures for authorizations established are adhered to in all BOM undertakings this is clear indication that no expenditure can be incurred without authorization and thus will curb any fraudulent activities, however in more than 9% of the schools there is still compromise on authorization and this gives leeway to the principal and bursar to incur expenditures and justify them later.

The results also determined the distribution of the indicator that there are formalized policies and procedures for major operations in the school, Majority (40.4%) of the respondents strongly agreed, 68.3% of the respondents agreed or strongly agreed that there are formalized policies and procedures for major operations in the school, 7.7% of the respondents were neutral while 24% disagreed or strongly disagreed. The between results show that in most (60.5%) of the schools, there were at least some respondents who strongly agreed that there are formalized policies and procedures for major operations in the school while for some (21.1%) of the schools, there were at least some respondents who disagreed. On average, within the 23 organizations that at least had respondents who strongly agreed, only 66.7% of the studied respondents actually strongly agreed that there are formalized policies and procedures for major operations in the school. These results portray that in many schools, there are formalized policies and procedures for major operations in the school. Thus, a framework exists that guides the undertakings of the school. However, in some schools such policies and procedures even if they exist are not followed which compromises financial accountability in such schools. The table shows the analysis of the 11 indicators measuring control environment.

Indicator			1	2	3	4	5	Total
sb1	Overall	Freq.	29	60	33	60	22	202
		Percent	14.4%	28.9%	16.4%	28.9%	11.5%	100.0%
	Between (n = 68)	Freq.	23	36	23	29	16	127
		Percent	34.2%	52.6%	34.2%	42.1%	23.7%	186.8%
	Within	Percent	39.7%	54.2%	53.9%	66.7%	48.2%	53.5%
sb2	Overall	Freq.	10	23	18	67	86	204
		Percent	4.8%	11.5%	8.7%	32.7%	42.3%	100.0%
	Between (n = 68)	Freq.	7	16	9	43	48	123
		Percent	10.5%	23.7%	13.2%	63.2%	71.1%	180.9%
	Within	Percent	41.7%	44.4%	60.0%	54.9%	59.9%	55.1%
sb3	Overall	Freq.	20	35	35	82	32	204
		Percent	9.6%	17.3%	17.3%	40.4%	15.4%	100.0%
	Between (n = 68)	Freq.	14	23	23	43	20	123
		Percent	21.1%	34.2%	34.2%	63.2%	29.0%	180.9%
	Within	Percent	41.7%	46.2%	48.7%	68.8%	53.0%	55.1%
sb4	Overall	Freq.	16	33	28	76	51	204
		Percent	7.7%	16.4%	13.5%	37.5%	25.0%	100.0%
	Between (n = 68)	Freq.	9	21	20	36	30	116
		Percent	13.2%	31.6%	29.0%	52.6%	44.7%	170.6%
	Within	Percent	53.3%	48.6%	43.9%	68.3%	64.7%	58.5%
sb5	Overall	Freq.	12	31	22	53	86	204
		Percent	5.8%	15.4%	10.6%	26.0%	42.3%	100.0%
	Between (n = 68)	Freq.	7	20	13	25	38	103
		Percent	10.5%	29.0%	18.4%	36.8%	55.3%	151.5%
	Within	Percent	54.2%	53.0%	52.4%	69.1%	79.4%	66.7%
sb6	Overall	Freq.	23	41	39	47	51	201
		Percent	11.5%	20.2%	19.2%	23.1%	25.0%	1.0%
	Between (n = 68)	Freq.	16	30	25	32	30	133
		Percent	23.7%	44.7%	36.8%	47.4%	44.7%	195.6%
	Within	Percent	48.2%	47.1%	52.4%	47.2%	55.9%	33.3%
sb7	Overall	Freq.	10	28	45	63	58	204
		Percent	4.8%	13.5%	22.1%	30.8%	28.9%	100.0%
	Between (n = 68)	Freq.	5	13	25	39	32	114
		Percent	7.9%	18.4%	36.8%	57.9%	47.4%	167.6%
	Within	Percent	55.6%	73.8%	57.1%	56.1%	60.2%	59.4%
sb8	Overall	Freq.	22	26	31	74	51	204
		Percent	10.6%	12.5%	15.4%	36.5%	25.0%	100.0%
	Between (n = 68)	Freq.	13	20	23	41	30	127
		Percent	18.4%	29.0%	34.2%	60.5%	44.7%	186.8%
	Within	Percent	57.1%	43.9%	42.3%	58.0%	60.8%	53.5%
sb9	Overall	Freq.	16	28	14	78	68	204
		Percent	7.7%	13.5%	6.7%	38.5%	33.7%	100.0%
	Between (n = 68)	Freq.	13	16	13	47	38	127
		Percent	18.4%	23.7%	18.4%	68.4%	55.3%	186.8%
	Within	Percent	40.5%	53.7%	35.7%	56.4%	62.7%	54.3%
		Freq.	12	8	22	93	69	204
	Overall	Percent	5.8%	3.9%	10.6%	46.2%	33.7%	100.0%
sb10	Between (n = 68)	Freq.	5	7	13	47	38	110
		Percent	7.9%	10.5%	18.4%	68.4%	55.3%	161.8%
	Within	Percent	66.7%	33.3%	52.4%	69.2%	61.9%	62.3%
		Freq.	26	23	16	57	82	204
	Overall	Percent	12.5%	11.5%	7.7%	27.9%	40.4%	100.0%
sb11	Between (n = 68)	Freq.	13	14	9	34	41	111
		Percent	18.4%	21.1%	13.2%	50.0%	60.5%	163.2%
	Within	Percent	64.3%	52.1%	53.3%	59.7%	66.7%	61.3%

Table 5: Descriptive Analysis of Control Environment

4.3. Regression Results

Factor analysis was used to generate factor scores that were used as latent variables to assess the influence of Control Environment on financial accountability using simple linear regression. A bivariate simple linear regression was fitted to assess the influence of Control Environment on financial accountability. The results for the regression model show an R-square of 0.344 implying that 34.4% of the variation in financial accountability is explained by the one predictor model. The Analysis of Variance (ANOVA) has an F-statistic of 18.360 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 environment on financial accountability is generally significant. The regression coefficient estimate of control environment was ($\beta = 0.570$, $Z = 4.280$, $p\text{-value} = 0.000$). 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 0.570 units through current ratio, debt ratio and change in public equity. A scatter plot of financial accountability against Control Environment in figure 4. 6 shows an increasing pattern which is also shown by an increasing linear function of the line of best fit.

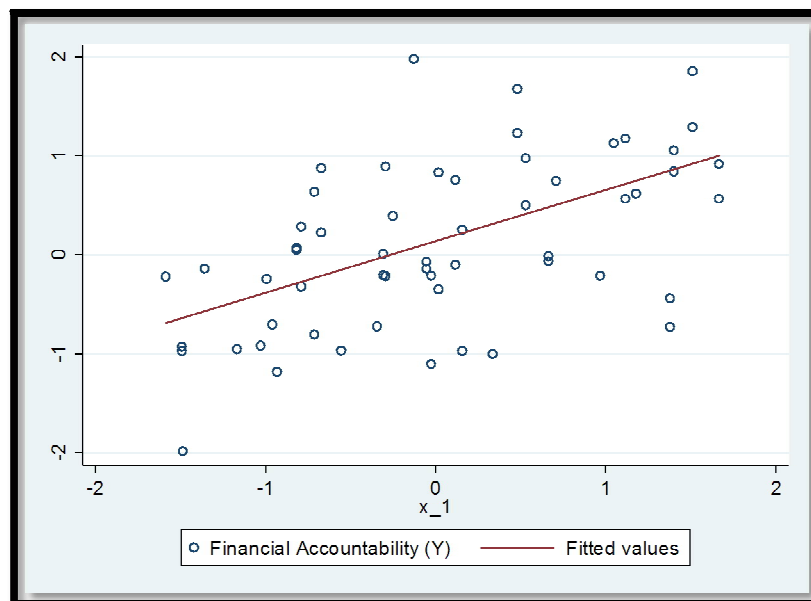


Figure 2: Control Environment and Financial Accountability

A bivariate simple linear regression was fitted to assess the influence of Control Environment on financial accountability. The results for the regression model in table 4. 19 Show an R-square of 0.344 implying that 34.4% of the variation in financial accountability is explained by the one predictor model. This further implies that 65.6% 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) has an F-statistic of 33.14 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 environment on financial accountability is generally significant. This is means that the coefficient of control environment 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 0.822 that is greater than 0.05. The BP chi-square statistic for also had a p-value of 0.618 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 Control environment has a significant effect on financial accountability. The table shows a significant regression coefficient estimate of control environment ($\beta = 0.519$, $t = 5.760$, $p\text{-value} = 0.000$). 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.

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

Table 6: Mixed Effect Model of Control Environment and Financial Accountability

- 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.

$$Y = 0.519X_1 + \epsilon \text{Equation 1}$$

5. Conclusions and Recommendations

The results of this study show that control environment positively affects financial accountability. The government should therefore strive to improve control environment in all public schools. 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. This will enhance understanding of financial activities and financial records.

Such BOM members will therefore be able to identify any anomalies in the financial statements and take necessary action. They will also ensure that books of accounts are prepared according to policy regulations. In-service training on a regular basis should also be done to BOM members to equip them with new financial management techniques and changes in public management policies.

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. They will be committed to their oversight role and will thus reduce opportunity to commit fraud in the said national public secondary schools. Any individual who has had integrity issues should not be allowed candidate for being principal a school or BOM member. Any misconduct by BOM members should be acted upon swiftly by the government and the necessary legal action be taken on such members. Such BOM members should not be allowed to manage any other school in the country.

Appointment of the principal or BOM members should be competitively advertised and appointment based on political interests, bribes or ethnic background but purely merit. Such principals and other BOM members may be incompetent and may be unable to execute their duties with the commitment and due diligence required. This will ensure that the Principals and BOM members are not working to return favor to community, politicians or their godfathers but will be committed to efficiency and effectiveness

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. Such a management philosophy should be made part of the culture of the school and should guide all decisions of the school. Constant scrutiny of BOM members should be done to root out those with vested interest. Any individual found to go against the policy should be dealt with accordingly without fear or favor.

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. A high percentage of BOM members should be to be parents in the school and as such they will have stakeholders' approach to ensure that there is proper financial management. Allowances of BOM members should be paid by the central government so that the allowances are not seen as favors from the principal which may discourage critical scrutiny of financial statements.

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