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INFLUENCE OF INTERNAL MANAGEMENT SYSTEMS ON FINANCIAL FRAUD CONTROL IN LISTED COMMERCIAL BANKS IN KENYA

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ABSTRACT

This study sought to examine influence of internal management systems on financial fraud control in listed commercial banks in Kenya. The study was based on explanatory research design and utilized structured questionnaire to collect primary data. The study targeted 120 managers from the 12 listed commercial banks in Kenya from where Yamane's stratified sampling formula was used to get 93 respondents who were selected to participate in the study using simple random sampling technique. Data collected from the field was coded, cleaned, tabulated and analyzed using both descriptive and inferential statistics with the aid of Specialized Statistical Package for Social Sciences (SPSS) version 24 software. Descriptive statistics such as frequencies and percentages as well as measures of central tendency (means) and dispersion (standard deviation) were used. Further, inferential statistics such as regression and correlation analyses were used to determine both the nature and the strength of the relationship between the dependent and independent variables. A total of 93 questionnaires were dispatched for data collection, from which 85 questionnaires were returned dully filled, representing a response rate of 91.39% which is very good for generalizability of the research findings to a wider population. Both descriptive and inferential statistics revealed that all independent variables (risk assessment system, auditing system, adherence to professional ethical standards and employee remuneration) significantly influenced financial fraud controls in listed commercial banks in Kenya (dependent variable). The study concluded that one; commercial banks that invest in secure and updated risk assessment systems boosts their fraud control systems and lessens financial fraud incidences; two; an effective fraud detection, control program or audit system significantly improves financial fraud controls in commercial banks. The study recommended that one; commercial banks should have authentic employee recruitment and monitoring system that only secures employees with integrity and consistently compensate staff with incontestable professional ethical standards; and two, commercial banks should prudently apply employee remuneration and compensation schemes to only employees with undisputable professional ethical standards.

Key Words: *Risk Assessment System, Auditing System, Adherence to Professional Ethical Standards, Employee Remuneration*

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INTRODUCTION

Commercial banks encounter challenges in identifying fraud and preventing fraud, thus, these difficulties can often be exacerbated by the political, regulatory, and institutional frameworks that are in place. However, even in the case of significant regulatory support, the regulatory framework of a given country cannot be expected to stop or even necessarily significantly reduce the incidence of fraud in the banking industry (Chartered Institute of Management Accountants, 2009).

According to a survey done in 2009 by fraud examiners, the current increase in bank fraud cases stems from the intense pressure faced by individuals. According to the study, fraud grows and thrives under three major factors: pressure on employees to commit, availability of opportunities for fraud and the ability of the employee to rationalize the act of fraud (Pan et al., 2011).

However, these factors may drive fraud under differing conditions and environments. The factors may lead to proliferation of fraud during economic hardships especially when the organization and or the employees are undergoing times of economic and financial strain. Similarly, as companies seek to reduce their level of employees or reduce their expenditure especially on employee allowances and remuneration, the opportunities for fraud may increase due to a reduction in the effectiveness of internal controls (ACFE, 2019).

PwC's 2018 Global Economic Crime and fraud survey found that 49% of the global organizations say they have experienced economic crime in the past two years. It states that fraud hides in the shadows; one of the most powerful weapons in a fraudster's armory is a lack of awareness within the organizations. The report states that it is time for all businesses to recognize the true nature of the threat: not as just a nuisance or cost of doing business, but a shadow industry with tentacles in every country, sector and function.

Bank fraud has penetrated in commercial banks in Kenya. Association of Certified Fraud Examiners (2016) documented that many financial institutions in Kenya losses 5% of its annual revenue to fraud and defined fraud as a conscious and deliberate action by a person or group of persons with the intention of altering the truth or fact for selfish personal gain, is now by far the single most veritable threat to the entire banking industry.

From a study by PwC (2017) in Kenya most respondents revealed that most businesses in Kenya had recorded some cases of fraud while banks in the country had lost over Ksh 1.7 billion in three months. This growth in the banking fraud was grounded on the rapid growth and expansion in commercial banks which necessitated the implementation of complex multiple technological systems that promoted levels of fraud. More so, the effectiveness of fraud control systems in most commercial banks is dwindling in comparison to the boldness and skills of highly networked and sophisticated fraudsters who continuously update their skills to defraud banks.

According to CBK (2018) reports, the volume and frequency of fraudulent practices in Kenyan commercial banks have been on the increase. Fraud has become one of the most intractable and monumental problems in recent times. As a matter of fact, banks have become the main target of fraudsters for survival, thus, that only well managed banks especially with respect to effective fraud control and prevention would survive in the coming years.

Further, from the year 2012, there has been an increase in the prevalence of fraud and categories of bank fraud include card frauds, insider, electronic, cheque frauds and now mobile banking fraud. CBK reviewed policy implications based on the trends and gave recommendations to Kenya Bankers Association. A total of 36 cases were reported of which 16 cases were successfully investigated and accused persons charged in court but arrests and arraignment in courts has not deterred ever emerging bank fraudsters (Criminal Investigation Department reports, 2019).

Therefore, frequent cases of bank frauds in commercial banks in Kenya if there are no fraud control measures plus the inconsistency in managerial control of perpetual financial frauds in commercial banks motivated this study to examine influence of internal management systems on financial fraud control in listed commercial banks in Kenya.

Statement of the problem

The growing rate of bank frauds in both developed and developing countries is a growing challenge to fraud control specialists. For instance, studies in the developed countries indicate that the loss due to fraud continues to increase every year and report on the African Fraud and Misconduct survey indicates that fraud is a major concern in commercial banks including those in Kenya; and interestingly, employees are the main perpetrators, thus posing a great challenge to fraud control (KPMG, 2015).

Most researchers (Zuraidah, Mohd & Yusarina, 2015) have investigated fraud schemes in the banking institutions and the preventive measure to avoid severe financial loss and concluded that that the effectiveness of internal control measures was affected by non-adherence to dual control aspect, use of manual systems and lack of sufficient time to undertake the various periodic tests to control bank fraud

More so, another stream of researchers as summarized by Tunji (2015) have merely been listing types of bank frauds in one or two banks plus identifying one or two determinants of bank fraud (possibly just unique to a particular bank), leading to inconclusive findings on mitigation measures of effectively controlling the unrelenting cases of financial fraud in commercial banks.

In Kenya, CBK (2018) reported that banks have become the main target of both outsider and insider fraudsters for survival, thus, only well managed banks especially with respect to financial fraud control and prevention would survive in the coming years.

Therefore, lack of adequate empirical evidence on effective fraud control measures plus the inconsistency in managerial control of perpetual financial frauds in commercial banks motivated this study to examine influence of internal management systems on financial fraud control in listed commercial banks in Kenya.

Objectives of the Study

The general objective of the study was to examine influence of internal management systems on financial fraud control in listed commercial banks in Kenya. The specific objectives were;

- To examine influence of risk assessment system on financial fraud control in listed commercial banks in Kenya
- To determine influence of auditing system on financial fraud control in listed commercial banks in Kenya
- To assess the influence of adherence to professional ethical standards on financial fraud control in listed commercial banks in Kenya
- To evaluate the influence of employee remuneration on financial fraud control in listed commercial banks in Kenya

The research was guided by the following hypotheses;

- **H_{01}:** Risk assessment system does not significantly influence financial fraud control in listed commercial banks in Kenya
- **H_{02}:** Auditing system does not significantly influence financial fraud control in listed commercial banks in Kenya
- **H_{03}:** Adherence to professional ethical standards does not significantly influence financial fraud control in listed commercial banks in Kenya
- **H_{04}:** Employee remuneration does not significantly influence financial fraud control in listed commercial banks in Kenya

LITERATURE REVIEW

Theoretical Review

Risk Universe Theory

The risk universe is generally defined as all the risks that can affect the organization (Trintech, 2010) and fraud is considered the major risk affecting the banking sector. That is, fraud within the organization can translate into negative perceptions and impose reputational risk on the entity.

To elaborate on risk universe theory, Chapman (2006) stated that business risks can emanate from within the business (internally). This refers to those risks associated with the actions that the business takes. Secondly, the risks can develop from the environment in which the business is operating. This refers to influences of politics, economics, social and technology (PEST), all external factors to the organization.

In this regard, for example, during the recession (external risk), people turn to perpetrating fraud because of financial pressure. Spiraling personal debt as a result of the credit crunch has the potential for making employees desperate and tempting them to find extra cash dishonestly (internal). This theory is significant to this study since the study is focusing on internal risk assessments and employees in as far as fraud detection and control is concerned.

Fraud Diamond Theory

According to Wolfe and Hermanson (2004) an element named capability was added to the three initial fraud components of the Fraud Triangle Theory. Wolfe and Hermanson (2004) argued that although perceived pressure might coexist with an opportunity and a rationalization, it is unlikely for fraud to take place unless the fourth element (capability) is also present.

Mackevicius and Giriunas (2013) further explained that not every person who possessed motivation, opportunities, and realization may commit fraud due to the lack of the capability to carry it out or to conceal it. Albrecht et al. (1995) also opined that this element is of particular importance when it concerns a large-scale or long-term fraud. Furthermore, Albrecht et al. (1995) believe that only the person who has an extremely high capacity will be able to understand the existing internal control, to identify its weaknesses and to use them in planning the implementation of fraud.

In this regard, the Fraud Diamond Theory applies in this research in that it brings in the 'capability skill' (the desired 'diamond') in assessing if weaknesses in the commercial banks internal controls presents an opportunity for unethical employees who have the capability (the most sought 'diamond') of manipulating the banking system engages in fraudulent bank activities thus compromising financial fraud controls in commercial banks.

Fraud Triangle Theory

This theory was developed in 1973 by Donald Cressey (Cressey, 1973), a criminologist, who established that for fraud to occur there must be a reason; that is related to three factors (pressure, opportunity and rationalization) that must be present for an offense to take place. He ascertained that the perpetrator must formulate some morally acceptable idea to them before engaging in unethical behavior and if fraud perpetrators are given the opportunity they are most likely to commit fraud. Lister (2007) in further stated that pressure is a significant factor to commit fraud and determined three types of pressure which are personal, employment stress, and external pressure; thus defined the pressure to commit fraud as "the source of heat for the fire."

White Collar Crime Theory

This emanated from the 1940 work of Edwin H. Sutherland who is credited with the term "white-collar crime" (Dorminey, Fleming, Kranacher & Riley, 2012). While earlier criminologists and sociologists examined the broad topic of crime, focusing mainly on street and violent crime, Sutherland was the first to integrate crimes of the upper white-collar class with economics and business activity. White-collar offenses are viewed as equally serious as street crimes; there may be a

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tendency among some to view white-collar criminals as similar to street criminals (Woods, 1998).

Therefore, the white-collar crime theory focuses narrowly on white-collar offenders who may result in individuals failing to recognize the interactions between the offenders‟ background characteristics and their offensive behavior. White-collar criminals are not like typical bank robbers/street criminals, who are often described as "young and dumb.'' Bank robbers and other strong-arm artists often make comic mistakes like writing the holdup note on the back of a probation identification card, leaving the getaway car keys on the convenience store counter, using a zucchini as a holdup weapon, and timing the holdup to get stuck in rush hour traffic. Then there is the classic about the robber who ran into his own mother at the bank (Robertson, & Timothy, 1999).

White collar theory applies in this study in the sense that techno savvy employees of commercial banks or even bank managers simply utilize their purported soft skills to rob the bank millions of shillings without physical energy because they may compromise fraud controls through conspiracy or hacking of the banking system.

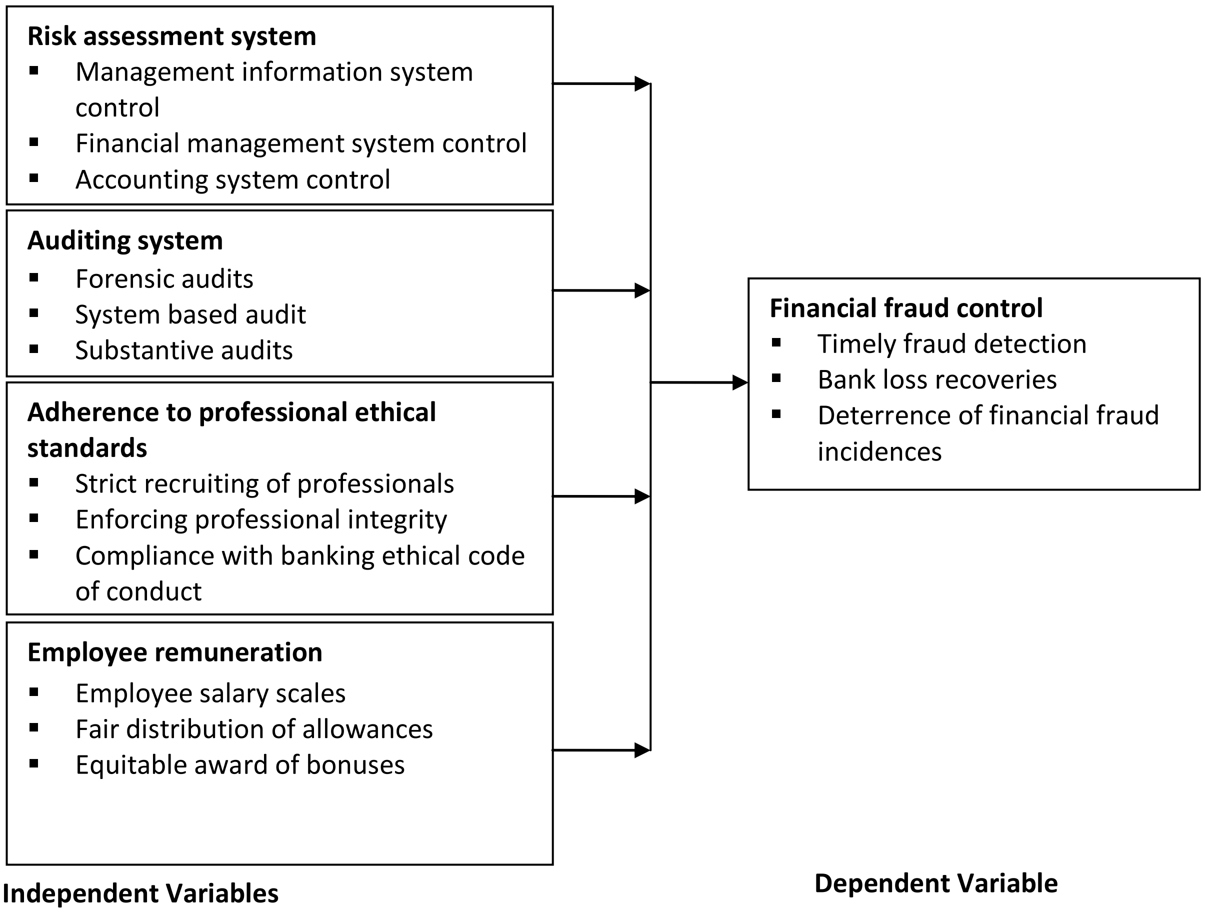

Figure 1: Conceptual Framework

Empirical Review

Pasricha and Mehrotra (2014) study on bank fraud in India identified top three fraud risks that are highest concern to the banks as: (a) Internet banking and ATM fraud, (b) E-banking (credit card and debit card, and (c) Identity fraud. Despite the proliferation of online and mobile service offerings and the rise in cybercrime, banks and financial institutions can fight back. The study recommended that a comprehensive anti-fraud risk assessment measures that can not only protect customers; but

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can make it very hard for cyber criminals to defraud banks.

Bhasin (2013) study found that bank customers love online banking for its convenience, while banks benefit from lower costs and a greater reach than a physical branch network provides. Since banking frauds are going to ultimately affect customer relationship quality and customer loyalty, fraud prevention through a secure fraud risk assessment system is very important. The study recommended that in order to ensure that both parties continue to benefit from online banking, it must remain a safe and secure channel that allows legitimate customers access without fear of frauds risks emanating from banking system attacks.

Moyes and Hasan (2006) study concluded that the degree of fraud detection was not dependent on the type of auditor, since both internal and external auditors have equal abilities to detect fraud. The study also found that organizational success in detecting fraud was significantly enhanced in auditing firms with previous experience in fraud detection than auditing firms with no such history. It was also found that auditors who were certified as certified public accountants (CPAs) were more likely to detect fraud than auditors who were non-CPAs. The researchers argued that this certification may imply a greater level of professional competence in fraud detection. The authors further argued that the peer review process puts pressure on auditors to be more diligent in incorporating relevant audit procedures to detect fraud.

Bonner et al. (2011) study also found that there existed some support for higher incidence of litigation against auditors, when a company's financial statements contain fraud that most commonly occurs, or when fraud arises from fictitious transactions and events; and that insiders reduced their equity stake during the occurrence of fraud.

Adeyanju (2014) study showed that compliance with banking ethics was found to have positive and significant relationship with bank fraud prevention. This implies that, increasing compliance with banking ethical standards can reduce unethical behavior in banks.

Nwaze (2006) study also affirmed that most forgeries are perpetuated by internal staff or by outsiders who act in collusion with employees of the bank. Impersonation by third parties to fraudulently obtain new cheque books which are subsequently utilized to commit fraud is another peculiar dimension of bank fraud. Impersonation involves assuming the role of another with the intent of deceitfully committing fraud. Cases of impersonation have been known to be particularly successful when done with conniving bank employees who can readily make available the specimen signature and passport photograph of the unsuspecting customer.

Wells (2017) study found that no amount of remuneration can deter banking staff from engaging in bank fraud. That is, fraud committed within corporations is usually contrary to the usual assumption of societal pressures for consumption, as many if not most of the actors are paid well enough to meet their personal and societal induced demands for consumption. Factors such as industry culture, investment horizons and payback periods, industry concentration, and environmental factors are likely to influence internal fraud by employees.

Vanasco (2011) found that unsatisfied employees really engage in fraud. That is, some rogue employees make use of confidential information or facilities to commit fraud or collude with an outsider to perpetrate a crime. Thus, performing background checks, to a certain extent, would help to prevent fraud and the level of background checks performed should be commensurate with the level of risk associated with the position.

METHODOLOGY

This research employed explanatory survey research design. The study targeted managers from the 12 listed commercial banks headquarters in Nairobi city county, Kenya. The sampling frame consisted of senior managers of all commercial banks whose headquarters were in Nairobi City County, Kenya. 93 respondents were used as sample size. The sample was drawn randomly from managers of commercial banks headquarters in Nairobi city county, Kenya. The study employed stratified random sampling technique. Primary data was collected by means of self-administered questionnaires. The questionnaires had structured questions. Data collected from the field was coded, cleaned, tabulated and analyzed using both descriptive and inferential statistics with the aid of specialized Statistical Package for Social Sciences (SPSS) version 24 software. The study conceptualized Regression Model as below;

$y = \beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+ \beta_4X_4 + e$

y = Financial fraud control in commercial banks in Nairobi city County

β_0 = Constant

X_1 = Risk assessment system

X_2 = Employee remuneration

X_3= Auditing system

X_4 = Adherence to professional ethical standards

$\{\beta_0-\beta_4\}$ = Beta coefficients

e = the error term

FINDINGS

Descriptive Statistics

The study descriptive statistics was done using Likert scale with values ranging from 5 to 1; that is; 5=Strongly Agree, 4=Agree, 3= Uncertain, 2=Disagree and 1= Strongly Disagree. The results were presented in the table form (as per each variable) showing frequencies of responses as per each statement and its corresponding percentage score in brackets, means and standard deviations.

Descriptive statistics: Risk Assessment System

The following were summarized responses on how risk assessment system influence financial fraud control in listed commercial banks in Kenya. The descriptive results were presented in table 1.

Table 1: Descriptive statistics: Risk Assessment System

Statement	5	4	3	2	1	mean	Std. Dev
The bank has adopted secure and well monitored accounting and financial management information system controls	10 (11.8)	48 (56.4)	6 (7.1)	18 (21.2)	3 (3.5)	3.54	0.788
Management provides instant feedback to all finance handling officers about any failures in the bank's financial management information system	9 (10.6)	47 (55.3)	8 (9.4)	17 (20.0)	4 (4.7)	3.51	0.912
The management has a system of rotating employees handling cash and valuable bank's financial assets and requiring them to take liability in case of suspicious transactions	8 (9.4)	49 (57.8)	6 (7.1)	19 (22.2)	3 (3.5)	3.58	0.934
There are real time management information system controls to detect occurrence of any financial fraud in the bank	7 (8.2)	50 (58.9)	5 (5.9)	20 (23.5)	3 (3.5)	3.61	0.916
There are valid risk assessment practices to detect occurrence of any financial fraud in the bank	8 (9.4)	45 (53.0)	9 (10.6)	16 (18.8)	7 (8.2)	3.47	0.841
Generally, credible risk assessment system enhances financial fraud control in the bank	9 (10.6)	47 (55.3)	7 (8.2)	17 (20.0)	5 (5.9)	3.53	0.856
Valid listwise 85							
Grand mean = 3.54							

From table 1, most respondents agreed (56.4%) and strongly agreed (11.8%) that the bank had adopted secure and well monitored accounting and financial management information system controls; while a further, 55.3% agreed that the management provides instant feedback to all finance handling officers about any failures in the bank's financial management information system, implying most commercial banks were fairly prepared to handle financial fraud.

More so, as a risk management measure, most respondents agreed (57.8%) that the management has a system of rotating employees handling cash and valuable bank's financial assets and requiring them to take liability in case of suspicious transactions. This was reinforced by 58.9% of respondents who agreed that there are real time management information system controls to detect occurrence of any financial fraud in the bank.

Most respondents also agreed (53.0%) and strongly agreed (9.4%) that there were valid risk assessment practices to detect occurrence of any financial fraud in the bank, implying that most commercial banks are fairly prepared to handle financial frauds through an effective fraud detection system. In summary, most respondents agreed (55.3%) and strongly agreed (10.6%) that generally, credible risk assessment system enhances financial fraud control in the bank. This was supported by Dzomira (2014) who investigated the use of digital risk analytical tools and technologies in electronic fraud and detection used in the Zimbabwe banking industry and concluded that banking institutions should reshape their anti-fraud risk strategies to be effective by considering frauds detection efforts using advanced analytics and related tools, software and application to boost their fraud risk assessments.

Descriptive statistics: Auditing system

These are summarized responses on auditing system as a financial fraud control measure in listed commercial banks in Kenya. The descriptive results were presented in table 2.

Table 2: Descriptive statistics: Auditing system

Statement	5	4	3	2	1	mean	Std. Dev
The bank has a credible auditing system to deter fraud in the bank	9 (10.6)	48 (56.5)	4 (4.7)	20 (23.5)	4 (4.7)	3.46	0.855
The bank has adopted effective forensic audit measures as a fraud control mechanism in the bank	10 (11.8)	49 (57.7)	5 (5.9)	18 (21.1)	3 (3.5)	3.54	0.862
There are effective system based audits to control fraud occurrence in the bank	8 (9.4)	46 (54.1)	8 (9.4)	19 (22.4)	4 (4.7)	3.42	0.747
The bank frequently engages in substantive audits to detect and seal any financial fraud in the bank	11 (12.9)	45 (52.9)	7 (8.2)	16 (18.9)	6 (7.1)	3.35	0.917
There are real time electronic audits practices to detect and recover any financial fraud in the bank	9 (10.6)	47 (55.3)	7 (8.2)	17 (20.0)	5 (5.9)	3.37	0.867
Generally, effective auditing system enhances financial fraud control in the bank	7 (8.2)	50 (58.8)	6 (7.1)	18 (21.2)	4 (4.7)	3.77	0.985
Valid listwise 85							
Grand mean = 3.48							

From table 2, most respondents agreed (56.5%) and strongly agreed (10.6%) that the bank had a credible auditing system to deter fraud in the bank; which was reinforced by 57.7% of respondents who agreed that the bank has adopted effective forensic audit measures as a fraud control mechanism in the bank, implying that most listed commercial banks have an effective auditing system to detect and report any incidences of financial fraud.

More so, 54.1% of respondents agreed that there were effective system based audits to control fraud occurrence in the bank; while a further 52.9% of respondents agreed that the bank frequently engages in substantive audits to detect and seal any financial fraud in the bank; thus routine system based audits can detect and deter suspicious financial fraud in commercial banks.

Most respondents also agreed (55.3%) that there were real time electronic audits practices to detect and recover any financial fraud in the bank implying that effective real time electronic audits can detect and deter suspicious financial fraud in commercial banks.

In summary, most respondents agreed (58.8%) and strongly agreed (8.2) that generally, effective auditing system enhances financial fraud control in the bank. This was supported by Deloitte Fraud Survey (2015) that found that the ability to reveal relationships, transactions, locations and patterns can make the difference between uncovering an online fraud scheme at an early stage as opposed to having it grow into a major incident. From money-laundering schemes to anti-corruption laws, from manipulating financial statements by reporting fictitious revenues to inappropriate sanctioning; forensic auditing tools can help explore data and quickly identify errors, irregularities and suspicious transactions embedded within your day to day business, thereby providing clarity to concerns raised by managers and employees.

Descriptive statistics: Adherence to Professional Ethical Standards

These are summarized responses on how adherence to professional ethical standards influences financial fraud control in listed commercial banks in Kenya. The descriptive results were presented in table 3.

Table 3: Descriptive statistics: Adherence to professional ethical standards

Statement	5	4	3	2	1	mean	Std. Dev
The banks engages in recruiting of credible finance professionals that can effectively control fraud in the bank	8 (9.4)	47 (55.2)	6 (7.1)	19 (22.4)	5 (5.9)	3.43	0.867
There is strict enforcement of professional integrity at all levels of management in the bank	11 (13.0)	45 (52.9)	9 (10.6)	17 (20.0)	3 (3.5)	3.46	0.628
Bank employees act in strict compliance with the banking ethical code of conduct	7 (8.2)	48 (56.5)	6 (7.1)	20 (23.5)	4 (4.7)	3.57	0.735
Given the right pressures and opportunities, most bank employees are capable of compromising their professionalism and engage in banking fraud	7 (8.2)	50 (58.8)	5 (5.9)	18 (21.2)	5 (5.9)	3.94	.0797
Management empowers and motivates employees with high professional integrity to act as whistleblowers	10 (11.8)	46 (54.1)	7 (8.2)	16 (18.8)	6 (7.1)	3.49	0.733
Generally, strict adherence to professional ethical standards minimizes financial fraud in the bank	9 (10.6)	49 (57.6)	5 (5.9)	20 (23.5)	2 (2.4)	3.87	0.648
Valid listwise 85							
Grand mean = 3.63							

From table 3, most respondents agreed (55.2%) and strongly agreed (9.4%) that the bank engages in recruiting of credible finance professionals that can effectively control fraud in the bank; and was reinforced by 52.9% of respondents who agreed that there is strict enforcement of professional integrity at all levels of management in the bank; implying that employing staff with integrity and high professional standards can assist in detecting and deterring financial frauds.

Further, 56.5% of respondents agreed that bank employees act in strict compliance with the banking ethical code of conduct, while 23.5% of respondents disagreed to the statement implying that there are cases where bank employees engage in unethical codes of conduct and thus engage in financial fraud. This unethical conduct by some bank employees is affirmed by 58.8% of respondents who agreed that given the right pressures and opportunities, most bank employees are capable of compromising their professionalism and engage in banking fraud.

More so, 54.1% of respondents agreed that the management empowers and motivates employees with high professional integrity to act as whistleblowers, while 18.8% disagreed to the statement. This implies that if employees with high professional integrity reveals employee fraud are rewarded, they will be motivated as whistle blowers than if not rewarded then gets discouraged.

In summary, most respondents agreed (57.6%) and strongly agreed (10.6%) that generally, strict adherence to professional ethical standards minimizes financial fraud in the bank. This implies that commercial banks who recruit and reward employees with high professional ethical standards can really minimize employee related financial frauds as compared to commercial banks that ado not motivate employees with high professional ethical standards who act as whistleblowers.

The notion of employees' adherence to high professional ethical standards as a financial fraud control measure is supported by Nwaze (2006) who affirmed that most forgeries are perpetuated by internal staff or by outsiders who act in collusion with employees of the bank. Impersonation by third parties to fraudulently obtain new cheque books which are subsequently utilized to commit fraud is another peculiar dimension of bank fraud. Impersonation involves assuming the role of another with the intent of deceitfully committing fraud. Cases of impersonation have been known to be particularly successful when done with conspiring bank employees who can readily make available the specimen signature and passport photograph of the unsuspecting customer.

Descriptive statistics: Employee Remuneration

These are summarized responses on how employee remuneration can be used as a financial fraud control measure in listed commercial banks in Kenya. The descriptive results are presented in table 4.

Table 4: Descriptive statistics: Employee remuneration

Statement	5	4	3	2	1	Mean	Std. Dev
There is a credible employee remuneration system to boost employee morale to detect and report any fraud in the bank	11 (12.9)	46 (54.2)	7 (8.2)	18 (21.2)	3 (3.5)	3.84	0.727
The bank has adopted fair distribution of allowances and equitable award of bonuses as a fraud control mechanism in the bank	8 (9.4)	49 (57.7)	4 (4.7)	20 (23.5)	4 (4.7)	3.91	0.724
There are attractive employee salary scales to motivate employees and deter them in engaging in financial frauds	10 (11.8)	47 (55.2)	6 (7.1)	17 (20.0)	5 (5.9)	3.63	0.717
Whistle blowers are compensated in terms of monetary and non-monetary rewards to encourage internal staff to prevent financial frauds	7 (8.2)	50 (58.8)	6 (7.1)	19 (22.4)	3 (3.5)	3.74	0.742
Big spender and flossing bank employees are	12	45	7	16	5	3.82	0.777

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likely to engage in banking fraud given an opportunity	(14.2)	(52.9)	(8.2)	(18.8)	(5.9)		
Generally, attractive employee remuneration system enhances financial fraud control in the bank	9 (10.6)	48 (56.4)	5 (5.9)	19 (22.4)	4 (4.7)	3.66	0.771
Valid listwise 85							
Grand mean = 3.76							

Fromm table 4, there were mixed reaction about whether there is a credible employee remuneration system to boost employee morale to detect and report any fraud in the bank, because while 54.2% agreed, 21.2% disagreed to the statement implying there could be commercial banks incredible employee remuneration system that then gives chance to employees engaging in financial frauds.

More so, while 57.7% of respondents agreed that the bank has adopted fair distribution of allowances and equitable award of bonuses as a fraud control mechanism in the bank, 23.5% of respondents disagreed to the statement implying that unfair distribution of allowances and inequitable award of bonuses could provide a chance of some employees engaging in financial fraud.

Further, 55.2% and 11.8% of respondents agreed and strongly agreed that there are attractive employee salary scales to motivate employees and deter them in engaging in financial frauds; which was reinforced by 58.8% of respondents who agreed that whistle blowers are compensated in terms of monetary and non-monetary rewards to encourage internal staff to prevent financial frauds. However, 52.9% and 14.2% of respondents agreed and strongly agreed respectively that big spender and flossing bank employees are likely to engage in banking fraud given an opportunity.

In summary most respondents agreed (56.4%) and strongly agreed (10.6%) that generally, attractive employee remuneration system enhances financial fraud control in the bank, while 22.4% respondents disagreed to this statement, thus attributing to the notion that big spender and flossing bank employees are likely to engage in banking fraud given an opportunity.

The study results are supported by Armstrong and Taylor (2014) who stated that there are cautions of moral hazards associated with bonus payments or allowances, while a study conducted in the United States by Angeli and Gitay (2015) concluded that poorly aligned incentives facilitate excessive risk-taking behaviours by the executives; the study therefore recommended that risk-adjusted return metrics, prudential metrics, strategic metrics and conduct metrics be adopted while awarding or deciding on executive bonus payments. The study opined that perfect alignment between risk and reward enhances safety, soundness and stability of financial systems.

Inferential Statistics

Multiple Regression Analysis Models

First, test of linearity refers to the degree to which the change in the dependent variable is related to the change in the independent variable. This was tested by correlation coefficients and correlation results showed that independent variables (risk assessment system, auditing system, adherence to professional ethical standards, employee remuneration) have significant correlation with the dependent variable (financial fraud control) as shown in correlation analysis table.

Secondly, multicollinearity tests whether two or more conceptualized independent variables are highly correlated with each other. This assumption was tested using correlation analysis. Most researchers insist that if correlation coefficient, (r) is close to 1 or -1, then there is multicollinearity but if correlation coefficient (r) is not above 0.9, then there is no multicollinearity. In this study on correlation analysis, the highest correlation coefficient between all pairs of independent variables (risk assessment system, auditing system, adherence to professional ethical standards, employee remuneration) was 0.617, which was below the threshold of 0.9, thus multicollinearity assumption was checked and met.

Table 5: Correlations

		RAS	AS	APES	ER	FFC
RAS: Risk assessment System	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	85				
AS: Auditing system	Pearson Correlation	.617**	1			
	Sig. (2-tailed)	.000				
	N	85	85			
APES: Adherence to Professional Ethical Standards	Pearson Correlation	.593**	.592**	1		
	Sig. (2-tailed)	.000	.000			
	N	85	85	85		
ER: Employee remuneration	Pearson Correlation	.613**	.582**	.603**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	85	85	85	85	
FFC: Financial Fraud Control	Pearson Correlation	.848**	.788**	.852**	.821**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	85	85	85	85	85

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

Thirdly, normality test assumption asserts that data must have a normal distribution and this was tested by the use histograms with normal curve. The results showed histograms with bell-shaped normal curves indicating that data was approximately normally distributed, thus met this assumption.

Lastly, as a statistical rule, since the researcher collected categorical data on independent and dependent variables, the collected categorical data was first summated and transformed into continuous data using SPSS to allow running of correlations, linear and multiple regressions analyses.

Multiple Regression Analysis

This tested the multiple influence of risk assessment system, auditing system, adherence to professional ethical standards, and employee remuneration on financial fraud control in listed commercial banks in Kenya. This was computed by SPSS based on transformed data (from categorical data to continuous data) so as to run regression analyses based on continuous data. The multiple regression results were shown in table 6.

Table 6: Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.855[a]	.731	.717	.68508	.731	89.694	4	80	.000

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	101.873	4	25.468	89.694	.000[a]
	Residual	37.547	80	.469		
	Total	139.420	84			

a. Predictors: (Constant), Employee Remuneration, Auditing System, Risk Assessment System, Adherence to Professional Ethical Standards

b. Dependent Variable: Financial Fraud Control

Multiple regression analysis in table 6 showed the multiple regression results of the combined influence of the study's independent variables (risk assessment system, auditing system, adherence to professional ethical standards, and employee remuneration) on the dependent variable (financial fraud control). The model's R squared (R^2) is 0.731 which showed that the study explained 73.1% of variation in financial fraud control in listed commercial banks in Kenya while other factors not in the conceptualized study model accounts for 26.9%, hence, shows a good study model fit.

More so, Analysis of Variance (ANOVA) showed the mean squares and F statistics significant (F = 89.694; significant at $p<.001$), thus confirming the fitness of the model and also statistically implies that the study's independent variables (risk assessment system, auditing system, adherence to professional ethical standards, and employee remuneration) have significant variations in their significant contributions to financial fraud control in listed commercial banks in Kenya.

Further, the values of unstandardized regression coefficients with standard errors in parenthesis in the table, indicate that all the study's independent variables (risk assessment system; β = 0.429 (0.066) at $p<0.05$; auditing system; β = 0.288 (0.109) at $p<0.05$; adherence to professional ethical standards; β = 0.537 (0.155) at $p<0.05$, employee remuneration; β = 0.242 (0.067) at $p<0.05$) significantly influenced financial fraud control in listed commercial banks in Kenya (dependent variable).

The results also indicated that adherence to professional ethical standards had the highest coefficient value (0.537) closed followed by risk assessment system (0.429), implying that employees with sound professional ethical standards combined with an effective risk assessment system can really help boost financial fraud control in listed commercial banks in Kenya. This was followed by auditing system (0.288), while employee remuneration was the least but significant predictor (0.242) implying that though employee remuneration can significantly influence financial fraud control in listed commercial banks in Kenya, some big spender and flossing bank employees who can never be satisfied with remunerations are likely to engage in banking fraud given an opportunity.

Table 7: Coefficients

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.279	.133		2.094	.039
	Risk Assessment System	.429	.066	.447	6.452	.000
	Auditing System	.288	.109	.281	2.647	.010
	Adherence to Professional Ethical Standards	.537	.155	.509	3.467	.001

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Employee Remuneration	.242	.067	.251	2.268	.026

a. Dependent Variable: Financial Fraud Control

Therefore, the study's resultant multiple regression equation was;

$$y = 0.279 + 0.429X_1 + 0.288X_2 + 0.537X_3 + 0.242X_4$$

Where;

y= financial fraud control in listed commercial banks in Kenya

X_1= risk assessment system

X_2= auditing system

X_3= adherence to professional ethical standards

X_4= employee remuneration

Hypothesis Testing

First, study hypothesis one (H_{01}) stated that risk assessment system does not significantly influence financial fraud control in listed commercial banks in Kenya. Multiple regression results indicated that risk assessment system has significant relationship with financial fraud control in listed commercial banks in Kenya; (β = 0.429 (0.066) at $p<0.05$). Hypothesis one was therefore rejected. The results indicated that a single improvement in effective risk assessment system would lead to 0.429 unit enhancement of financial fraud controls in listed commercial banks in Kenya.

Secondly**,** study hypothesis two (H_{02}) stated that auditing system does not significantly influence financial fraud control in listed commercial banks in Kenya. Multiple regression results indicated that auditing system has significant relationship with financial fraud control in listed commercial banks in Kenya; (β = 0.288 (0.109) at $p<0.05$). Hypothesis two was therefore rejected. The results indicated that a single improvement in effective auditing system will lead to 0.288 unit improvement in financial fraud controls in listed commercial banks in Kenya.

Thirdly**,** study hypothesis three (H_{03}) stated that adherence to professional ethical standards does not significantly influence financial fraud control in listed commercial banks in Kenya. Multiple regression results indicated that adherence to professional ethical standards has significant relationship with financial fraud control in listed commercial banks in Kenya; (β = 0.537 (0.155) at $p<0.05$). Hypothesis three was therefore rejected. The results indicated that a single improvement in professional ethical standards by bank employees will lead to 0.537 unit improvement in financial fraud controls in listed commercial banks in Kenya.

Fourthly, study hypothesis four (H_{04}) stated that employee remuneration does not significantly influence financial fraud control in listed commercial banks in Kenya. Multiple regression results indicated that employee remuneration has significant relationship with financial fraud control in listed commercial banks in Kenya; (β = 0.242 (0.067) at $p<0.05$). Hypothesis four was therefore rejected. The results indicated that a single improvement in employee remuneration will lead to 0.242 unit improvement in financial fraud controls in listed commercial banks in Kenya.

CONCLUSIONS AND RECOMMENDATIONS

The study concluded that one, commercial banks that invest in secure and updated risk assessment systems boosts their fraud control systems and lessens financial fraud incidences. Secondly, an effective fraud detection, control program or audit system significantly improves financial fraud controls in commercial banks. Thirdly, all bank employees' strict adherence to professional ethical standards can be an effective financial fraud control measure in commercial banks. Lastly, employee remuneration alone is quite an elusive measure of controlling financial frauds in commercial banks.

On the study's recommendation, first, the study recommended that risk managers in commercial bank should install secure and updated risk assessment systems with effective real time tools to timely detect, deter and report any financial fraud incidence. Secondly, commercial banks should invest in secure and upgraded forensic auditing

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system devoid of system manipulation so as detect and report any financial fraud risks. Thirdly, commercial banks should have authentic employee recruitment and monitoring system that only secures employees with integrity and consistently compensate staff with incontestable professional ethical standards. Lastly, commercial banks should prudently apply employee remuneration and compensation schemes to only employees with undisputable professional ethical standards.

Areas for further research

First, a similar study can be done in commercial banks but using auditing tools so as to compare results.

Secondly, another study can be done on equity-based compensations and fraud occurrence in all commercial banks in Kenya.

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