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The Effect of Corporate Governance on Occurrence of Fraud in Commercial Banks in Kenya

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Abstract:

The purpose of the study was to examine the effect of corporate governance on occurrence of fraud in commercial banks in Kenya. The study was guided by four research questions as follows: To what extent does top leadership's tone at the top affect occurrence of fraud in commercial banks in Kenya? To what extent do the prudential control systems set by commercial banks' regulator impact on occurrence of fraud? To what extent does the alignment of top leadership's compensation structures to fraud risk affect occurrence of fraud? To what extent do the fraud response strategies by commercial banks in Kenya affect occurrence of fraud? The study adopted positivism research philosophy and descriptive correlational research design. The population of the study were 13,092 top management staff of 43 commercial banks regulated by CBK. A sample size of 169 top management staff stationed in Nairobi City were drawn using stratified random sampling method. Primary data was collected through structured questionnaires. Data was analyzed using descriptive statistics and inferential statistics of Pearson's Correlational Analysis, Analysis of Variance and regression analysis using statistical tool of SPSS.

In relation to the effect of top leadership's tone at the top on occurrence of fraud, the study found significant correlations between top leadership's tone at the top and amount of fraud loss and frequency of fraud and increases fraud loss recovery rates. In respect to effect of prudential control systems set by CBK on occurrence of fraud, the study showed a correlation of prudential control systems set by CBK lowers the amount of fraud loss and enhances the fraud loss recovery rates. In relations to effect of alignment of top leadership's compensation structure to occurrence of fraud, the grouped correlations show significance relationship with amount of fraud loss and increase in fraud loss recovery rate. In regards to effect of fraud response strategies on occurrence of fraud, the grouped correlational results of the showed that that robust fraud response strategies by the banks, lower amount of fraud loss. The study evidenced that effectiveness of fraud response strategies yield higher fraud loss recovery rates.

The study concluded that the more the positive tone at the top the lower the likelihood of occurrence of fraud, the more stringent the prudential control systems set by the regulator the lower the likelihood of occurrence of fraud, the more commensurate the compensation, the less likelihood of occurrence of fraud and finally, the more the established the procedures are for reporting incidences of fraud, the less the likelihood of fraud through falsification of documents by staff.

The study recommended extension of fit and proper test for all commercial banks' staff in fraud prone departments and making it periodic for the top management teams, improvement of banking supervisions by creation of fraud specific prudential reports, legislative amendments to create fraud specific courts with judicial support systems and structural review of BFID reporting line. In relations to further research, the study suggested inclusion of all fraud typologies and getting the perception of board of directors and non-top leadership staff, replication of the same study to all CBK regulated financial institutions and also assessing the impact of fraud awareness initiatives by all the stakeholders on occurrence of fraud.

Keywords: *Corporate governance, tone at the top, prudential control systems, compensation structure, response, occurrence of fraud*

1. Background of the Study

Weak corporate governance mechanisms contribute to incidences of fraud (Norwani, Mohamad & Chek, 2011; Soltani, 2014). Fraud involving banks can be traced to 1494 when bank managers of Nedic Bank exploited weak controls to spend extravagantly (Salami, Johl & Ibrahim, 2014). Corporate failures, fraud and scandals have continued in every continent, every country, every industry and every sector (Sarna, 2010, Cheffins, 2013; Abid & Ahmed, 2014)

Corporate governance tends to be reviewed in response to crisis leading to creation of tailor made solutions and ad hoc committees for example Cadbury Report of 1992 responded to Bank of Credit Commerce International (BCCI) (Wearing, 2005; Dewin & Russel, 2000). Africa is vulnerable to corporate governance weakness (Turyahikayo, 2014). In Kenya weak corporate governance structures is cited to have led to the collapse of many banks and subsequent creation of Consolidated Bank of Kenya Limited in 1990 (Mang'anyi, 2011).

Kenyan banking industry is highly regulated and supervised by Central Bank of Kenya in respect to various prudential guidelines derived from Basel Committee and despite the prudential control mechanisms, amount of fraud loss and frequency of internal fraud typologies have been on the increase with decreasing fraud loss recovery rates (CBK, 2014; Cap, 484; 486, Laws of Kenya; BFID Annual Report, 2015). It is estimated that typically organizations lose 5% of their annual revenue to fraud (ACFE, 2014). In Kenya, in excess of Kenya shillings 3.3 Billion was reported to have been lost by commercial banks through fraud in 2015. This figure has been on the increase by Kshs 1.1 Billion in 2014 (BFID Annual Report, 2015). BFID Annual Report (2015) further reports that substantial amount of fraud cases are not being reported hence the estimated amount of fraud of Kenya Shillings 3.3 Billion is very conservative.

1.1. Problem Statement

The emergence of corporate governance mechanisms in the 1970s has not eliminated fraudulent activities in organizations. Development of corporate governance mechanisms have been reactionary to occurrence of fraud leading to cancerous growth of fraud (Bearing, 2005; Bhasin, 2013; Adewale, 2013; Tugas, 2012). Fraud has had incredible impact on the corporate landscape of the 21st century (Biegelman & Bartow, 2012). Fraud remains a high risk with high severity globally affecting all sectors (Iminza, Gikiri & Kiragu, 2015).

Africa has the highest prevalence and fast growing exposure due to weakness in governance structures with banking industry being highly vulnerable (PwC, 2011) and Kenya having the highest number of incidences of fraud. Amount of fraud loss in Kenya banking industry is estimated to Kenya Shillings 3.3 Billion in 2015 having increased from Kenya shillings 2.2 Billion reported in 2014 (BFID Annual Report, 2015). The frequency of internal fraud typologies of financial reporting fraud, falsification of documents, unofficial borrowings by the bank tellers from the teller tills, identify fraud and computer-aided frauds are reported to be on the increase with fraud loss recovery dwindling below 50% in the Kenyan banking industry (BFID Annual Report, 2015).

Empirical studies on corporate governance in commercial banks have concentrated on other aspects of corporate governance other than occurrence of fraud (Akelola, 2012; Bihari, 2013). Empirical studies in Kenya too have not focused on effect of corporate governance on occurrence of fraud in commercial banks (Iminza *et al*, 2015; Mwithi & Kamau, 2015). It is upon these noted limitations that this study examined the effect of corporate governance on occurrence of fraud in commercial banks in Kenya by assessing the extent to which top leadership's tone at the top, prudential control systems, top leadership's remuneration structure and fraud response strategies impact on occurrence of fraud.

1.2. Research Questions and Hypothesis

The study was based on four research questions namely; To what extent does top leadership's tone at the top affect occurrence of fraud in commercial banks in Kenya? To what extent do the prudential control systems set by commercial banks' regulator impact on occurrence of fraud? To what extent does the alignment of top leadership's compensation structures to fraud risk affect occurrence of fraud? To what extent do the fraud response strategies by commercial banks in Kenya affect occurrence of fraud?

The following four null hypothesis were used to test the effect of corporate governance on occurrence of fraud in commercial banks;

- i. H₀₁: Top leadership's tone at the top does not significantly impact occurrence of fraud in commercial banks in Kenya.
- ii. H₀₂: Prudential control systems set by commercial banks' regulator do not significantly impact on occurrence of fraud.
- iii. H₀₃: Alignment of top leadership's compensation structures to fraud risk do not significantly affect on occurrence of fraud.
- iv. H₀₄: Fraud response strategies by commercial banks in Kenya do not significantly affect occurrence of fraud.

1.3. Justification of the Study

The study examining the effect of corporate governance on occurrence of fraud in commercial banks in Kenya, is instrumental to another of stakeholders viz commercial banks, customers and investors, the commercial banks' regulator, the supervisory colleges of East Africa Community and researchers.

To the individual commercial banks, the findings of the study will support top management team in assessing effective elements of tone at the top and also to create a zero-tolerance fraud risk workplace environment. The findings of the study will help inform the customers and investors of the safety of their monies and also the commercial banks' and regulator's preparedness in dealing with incidences of fraud. The results of the study will help the regulator ascertain effectiveness of its prudential control systems, assess the support it receives from the national police force on secondment of officers to Banking Fraud Investigation Department and the study discoveries will inspire the regulator in capacity building for fraud risk management. To the regional financial regulatory bodies, the study findings will be useful in improving and unifying the corporate governance mechanisms. Finally, the findings of the study will add to the dearth research and body of knowledge on the effect of corporate governance on occurrence of fraud.

1.4. Scope of the Study

The study examined the effect of corporate governance on occurrence of fraud in commercial banks in Kenya by evaluating internal fraud typologies of financial reporting fraud, falsification of documents, unofficial borrowings by the bank tellers from the teller tills,

identify fraud and computer-aided frauds. The study was conducted in four months commencing in October 2015 and ended in January 2016. The target population was the 43 commercial banks licensed by the Central Bank of Kenya. The study targeted top management staff who are largely members of the commercial banks' management committee.

2.1. Theoretical Framework

The study adopted CLASS model of corporate governance to examine the effect of corporate governance on occurrence of fraud in commercial banks in Kenya. CLASS is an acronym of Culture, Leadership, Alignment, Structure and Systems. CLASS was developed by Drew, Kelly and Kendrick (2006). It was developed to promote corporate culture and structural support aimed at minimizing the culture of risk taking and possibility of fraud. The model was suitable for the study having being used in other studies of topical matter (Akelola, 2012), its congruency to renowned fraud triangle theory (Biegelman & Bartow, 2012) and its inclusion of diversity of perspectives which may facilitate occurrence or deterrence of fraud.



Figure 1: CLASS Model of Corporate Governance (adopted from Drew et al,2006)

2.2. Conceptual Framework

The conceptual framework of the study was developed from the CLASS model of corporate governance. The conceptual framework comprised of four independent variables and corresponding sub-variables. The independent variables included top leadership's tone at the top, effects of prudential control systems, alignment of top leadership's compensation structure and fraud response strategies. The dependent variable of the study was occurrence of fraud. Occurrence of fraud was measured by magnitude of loss, frequency and fraud loss recovery rate (ACFE, 2014). Even though, intervening variables are instrumental in providing additional information about the how or the why the independent variable and dependent variable associate or interact (Mitchell & Jolley, 2008), the study did use any intervening variables because some of the fraud factors has been as either independent variables or sub-set of independent variables which are aligned to pressure, opportunity and rationalization hence the failure to include them as intervening variables.

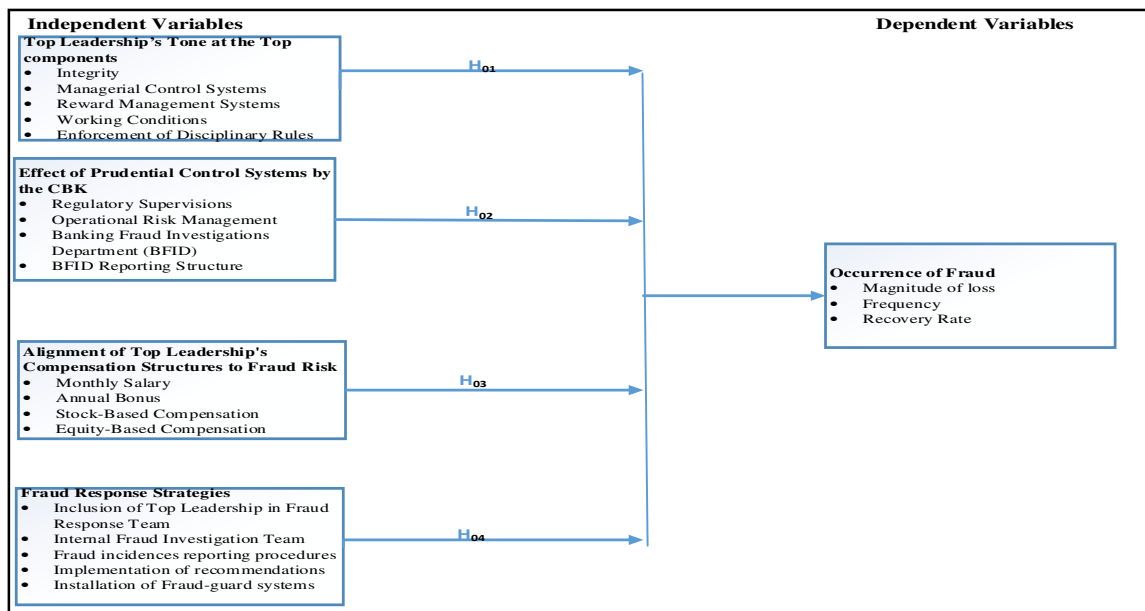


Figure 2: Conceptual Framework

2.3. Review of Literature

2.3.1. Effect of Top Leadership's Tone at the top on Occurrence of Fraud

Tone at the top can be assessed from ethical climate and organizational culture (Biegelman & Bartow, 2012) whereas Anca, Racula and Aurora (2013) argue that tone at the top should comprise too internal control mechanism. The study analysed tone at the top based on the components of integrity of top leadership, managerial control systems, reward management systems, working conditions and administration of disciplinary rules as enabled by ethical climate and organizational culture (Murphy, Free & Branston, 2011; Law, 2011). In a survey by PwC (2012) 90% of the respondents agreed that tone at the top is effective in fraud risk mitigation.

Mangoentono (2012) argues that integrity is a contributory element of internal control system for fraud prevention. Integrity of top management team of commercial banks is a requirement by the regulators (Bank of Bangladesh, 2009; CBK Prudential Guidelines, 2013). Naidoo (2012) asserts that top leadership with integrity are proficient in minimizing incidences of fraud. Lease (2010) undertook a post-mortem assessment of Enron, WorldCom, Tyco International and HealthSouth and concluded that the top leadership had adopted an organizational culture of winning at all costs. An earlier study by Thomas (2008) linked weak top leadership's integrity with the fallen corporate giants as a result of fraud.

D'Aquila and Bean (2003) found that top leadership's level of integrity impact on possibility of financial reporting fraud or management fraud. Abiola and Oyewole (2013) and Ayozie (2013) concur that financial reporting fraud are of two forms namely concealing inadequate business operations performance and prohibited business activities. Top leadership commits management fraud for the reasons of bonus-pay outs, meeting market expectations and enhancement of wealth through performance based remuneration (Coene, 2008; Jordan, Clark & Waldron, 2007). Wokukwu (2014) opined that executive integrity contributes to management fraud. In 2015, two Kenyan commercial banks namely Dubai Bank Limited and Imperial Bank Limited were placed under statutory management for reasons cited as lack of management integrity leading to financial reporting fraud (CBK, Press Release August; November 2015)

According to Letting, Wasike, Kinuu, Murgor, Ongeti and Aosa (2012) effective adoption of management control systems enhances shareholders' wealth. Effective management control systems creates a zero-tolerance fraud environment by helping in designing responsive anti-fraud strategies (Sebau, Sendroiu & Sgardea, 2013). ACFE studies indicate that inadequate managerial controls immensely contribute to incidences of fraud (ACFE, 2010-2014). In the contrary, Rameli, Mohd-Sanusi, Mat-Isa and Omar (2013) found insignificant relationship between management controls and occurrence of fraud. Failure of managerial controls have been associated with several collapse of banks (Owolabi, 2010). In Kenya, Kiragu *et al* (2015) and Mwithi and Kamau (2015) found internal control systems to be strong components of fraud deterrence in commercial banks. Falsification of documents also known as forgery is very common in commercial banks with low adherence to managerial control systems (Idolor, 2010). In Nigeria, Chiezey and Onu (2013) reported there were 22,388 cases related to forgery with a potential loss of 507 Billion Nira with 5,476 cases being of absolute loss. In Kenya, for a matter before a judicial process, one of the researchers is a victim and prosecutorial witness in forgery case of Kshs 25 Million perpetrated by an officer of the bank.

Rewards are used by leaders to reinforce behavior of the subordinates (Ngu, 2014). Aktar, Sachu and Ali (2012) highlighted that ineffectiveness and iniquity in reward management systems contribute to corporate malpractices. Biegelman and Bartow (2012), Cascarino (2013) agree that non-commensurate reward systems are strong rationalization for employees to commit fraud. Ibar and Khan (2015) found a strong association between reward and performance.

Conducive working conditions of an organization is itself an effective anti-fraud strategy (Bishop & Hydoski, 2009; Sabau *et al*, 2013). A study by Idowu and Adedokun (2013) found a strong association between proper working conditions and early detection of incidences of fraud. Singh (2012) undertook a study to find out how employees react to various work environment, the study confirmed that when employees are dissatisfied with their work environment, they find relief and gratify their needs by disregarding their fiduciary position and engage in fraudulent activities. Similarly, Idolor (2010) and Moorthy, Somasundaram, Arokiasamy, Nadarah and Marimuthi (2012) found that unfair and unjust treatments of employees in workplace may make them commit fraud as a revengeful activities.

Punishment can fundamentally influence criminal behaviour (Kummer, Singh & Best, 2014). Biegelman and Bartow (2012) argue that organizations can send a strong message and hold employees to account for their roles in fraudulent activities or failure to stop a fraudulent activities. Tomlinson and Greenberg (2005) commented that punishment must be dispensed appropriately and each organization must have fair and explicit disciplinary policy to guard against fraud.

2.3.2. Impact of Prudential Control Systems set by the Regulator on Occurrence of Fraud

According to Barth, Gan and Nolle (2003) prudential control systems are derived from Basel Committee on Supervision, The International Accounting and Standards Board (IASB), The International Organizations of Securities Commission (IOSCO), The Financial Action Task Force on Money Laundering (FATF), the World Bank and the International Monetary Fund (IMF), however, most scholars and practitioners biasly mention Basel Committee. Banking supervision can be carried out by either a single supervisory authority or numerous bank supervisors (Barth *et al*, 2003; Iyade, 2006). Central Bank of Kenya is the single supervisory authority for the commercial banks in Kenya. Central Bank of Kenya regulates the commercial banks with a mixture Basel I, II and III (KPMG, 2012)

The Central Bank Act and Banking Act, Laws of Kenya mandate the Central Bank of Kenya to undertake an effective supervisory and regulatory responsibilities which includes both on-site and off-site examinations. The closure or statutory management of three commercial banks in Kenya namely Charterhouse Bank Limited, Dubai Bank Limited and Imperial Bank Limited within a decade

brings to question the effectiveness of Central Bank of Kenya and it could be inferred that there is a weakness in banking supervision in Kenya (CBK, 2013, CBK, 2014)

According to Ganioglu (2007) there is an association of between weakness in regulations and supervision of the banking sector and the banking difficulties. Iyade (2006) assessed the impact of regulation and supervision by Central Bank of Nigeria (CBN) and Nigerian Deposit Insurance Corporation (NDIC), the study concluded that both CBN and NDIC have not been effective in improving corporate governance issues in Nigerian banking industry thereby stemming incidences of fraud. Reporting of incidences of fraud in commercial banks in Kenya to the regulator is not mandatory hence the difficulties being faced by CBK to track and have a solid and reliable information about fraud (CBK Risk Management Guidelines, 2013; Akelola, 2015). Non compliance to operational risk management procedures is strongly associated to incidences of fraud (Mwanyale, 2014). Bank Annual Supervision Report of 2014 and the previous ones generalizes annual supervision of banks without giving evidence and outcome of issues noted during either on-site or off-site supervision (CBK, 2014). Levine (2012) posit that ineffectiveness to bank supervision by the regulators could be as a result of uninformed, non-expertly staffed and non-independent regulatory institution.

Globally, police are seen as ineffective in fraud risk management and this could be as a result of skills limitation and other environmental factors (Brooks, Button & Frimpong, 2009). Commercial banks in Kenya have negative attitude towards reporting incidences of fraud to police hence police are disadvantaged in undertaking a successful judicial process as most of the adopted internal processes have no prosecutorial powers (Akelola, 2015; Brooks *et al.*, 2009). In Kenya, the prosecutorial powers lies with the Office of the Attorney General hence police has no direct powers to prosecute fraud (Akelola, 2015). The Banking Fraud Investigation Department (BFID) officers are seconded to CBK by the Criminal Investigation Department (CID) of the National Police Service to investigate, proactively inform both the commercial banks and the public and liaise with other law enforcement agencies on matters of fraud (BFID Annual Report, 2015). Assessment of the mandate of BFID demonstrates weakness which culminates to their ineffectiveness. Akelola (2015) point out that the BFID ineffectiveness is due to current reporting structure where they report to the Director of CID while it could be structurally beneficial if they report to the Governor of CBK. Empirical studies show strong relationship between organizational structure and organizational effectiveness, efficiency and performance (Andersson & Zbirenko, 2014)

2.3.3. Effect of Alignment of Top Leadership's Compensation Structure on Occurrence of Fraud

Globally, executive and top organizational leadership's compensation consist of monthly salary, bonuses, and long term compensation comprising of equity and stock (Liu, Padgett & Varotto, 2014). According to Palmon, Santoro and Straus (2009) incentives are aimed at aligning the interest of the top leadership and those of the firm thereby minimizing conflict of interest and opportunity cost. Empirical studies have linked top organizational leadership to fraud (Jones & Wu, 2011). Conyon and He (2013) examined the relationship between CEO compensation and corporate fraud, the study found a correlation between executive compensation and fraud, the lower the executive compensation the higher the incidences of fraud. Other studies have found a negative association between compensation and performance (Nyaoga, Basweti & Tarus, 2014)

Swagerman and Terpstra (2007) investigated executive pay structure in Netherlands, the study concluded that base pay is still an essential component of executive compensation due to its being risk free. Conyon and He (2014) studied the effect of executive remuneration in China, the study found that fixed pay tend to decrease after enforcement action by China Securities and Regulatory Commission. On the contrary, Casby, Song and Tapon (2007) found pay for performance to achieve higher results than fixed salary compensation such as salary. In Kenya, Gathua *et al* (2013) examined the relationship between executive compensation and risk taking among commercial banks in Kenya, the study concluded the executive compensation has no correlation with risk taking.

Armstrong and Taylor (2014) stated that there are cautions of moral hazards associated with bonus payments. 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.

According to Armstrong and Vashishtha (2012) and Vallascas and Hagendor (2010) there is empirical evidence on the impact of bonus of top organizational leadership on risk taking, their study show that the higher the bonus the lower the default risk which demonstrate managerial effectiveness. Han and Shen (2006) examined the relationship of performance based bonus on employees inducement to innovation and performance efficiency. The study found strong correlations and therefore concluded that commensurate bonus payment increases employee efficiency and innovativeness thereby decreasing the operational gaps.

Whereas studies have shown relationship between stock based compensation and fraud (Avgouleas & Cullen, 2015). Sigler (2011) argues that rewarding executives with stock may not tie them to performance. In fact, Faulkender, Kadyrzhanova, Prabhala and Senbet (2010) stated that stock being a lavish compensation will induce top managers to manipulate accounting statements. Stock based compensation motives unethical behavior including fraud among some executive (O'Connor, Priem, Coombs & Gilley, 2006). Denis, Honouna and Sarin (2006) sampled 368 companies which were suspected of fraud for a period between 1993 and 2002, the study found stronger relationship between stock based compensation and securities fraud.

According to Chan, Tsai and Li (2015), equity based compensation is linked to fraud especially financial reporting fraud. Hab, Tarsalewska and Zhan (2015) concluded in their study that manager's equity remuneration increases their propensity to commit fraud. Empirical investigations undertaken by Erickson, Hanlon and Maydew (2006) ascertained that higher levels of equity incentive

sensitivity is linked to accounting fraud. Johnson, Ryan and Tian (2003) examined the relationship between compensation and corporate fraud. The study found that executives in fraud firms have largely higher equity performance compensation and greater financial incentives to perpetrate fraud .

2.3.4. Effect of Fraud Response Strategies on Occurrence of Fraud

Torpey and Sherrod (2011) argues that fraud will always occur despite the deterrence measures placed by the organizations and emphasizes upon the organizations to develop and synchronize response mechanisms should fraud occur or re-occur to avoid or minimize further loss. Biegelmand nad Bartow (2013) recognizes the establishment of fraud response strategy. Top leadership of the organizations should define multiple ways of reporting incidences of fraud on detection or suspicion (HM Treasury, 2003; Biegelman & Bartow, 2013)

According to ACFE (2010) the availability of numerous ways and mechanisms of detecting and reporting incidences of fraud leads to effective prevention and control of fraud. Banisar (2006) recommends that incidences of fraud must be reported within the legislative structures over and above the individual organizational structures as long as such legislative structures protects the whistle-blowers. Cascarino (2013) states that whistle-blowers or the confidential informers are key elements in fraud response strategies. PwC (2007) and Wells (2007) agree that whistle-blowing are effective fraud detection tool if supported by effective and sustainable structure. In fact, Amaram (2015) recognizes that the world most catastrophic frauds were detected through whistle-blowing. On the contrary, Ayagre and Aidoo-Buannel (2014) found a negative correlation between whistle blowing and fraud detection an indication that whistle blowing is unattractive and inefficient.

Fraud investigation as a response mechanism may involve internal fraud investigators and or law enforcement teams (KPMG, 2006). Whereas Biegelman and Bartow (2012) recommend that every organization should be equipped with internal fraud investigators but Modugu and Anyaduda (2013) cite that a sole approach may not yield results as most organizations are not equipped with certified fraud examiners or forensic accountants. ACFE (2015) highlights that the in-house investigators are not appropriately capacitated leading to high rate of unsuccessful judicial process should the suspects be subjected to prosecution. The study further point out that over 40% of in-house investigators do not have performance metrics while others have metrics perceived to be ineffective for example usage of cases closed year on year. The ACFE (2015) study found that in-house investigators are ineffective across the sectors including financial institutions.

Lessons learnt is key to fraud prevention and control, it is the mandate of fraud response team to issue preventive and prosecutorial recommendations (Biegelman & Bartow, 2012). Adoption and implementation of the key recommendations remain a daunting task of the top leadership or operational heads (IIA *et al*, 2008). IIA *et al* (2008) guides that the recommendations must be consumed timely to minimize counter-attack or to subject the suspects through a judicial process when evidence is still fresh and the prosecutorial witnesses are not scattered. IIA *et al* (2008) further recognizes that most organizations still have challenges implementing actions and recommendations on executives and directors suspected to have perpetrated fraud.

The results of a survey undertaken in the Indian banking industry on effect of fraud detection systems show that higher number of incidences of fraud were discovered through data analysis or transaction monitoring software and consequently, the study recommended that forensic data analytics is the modern frontier to detect and deter fraud (Deloitte, 2015). Turiho, Kibe and Mungwarakarama (2015) concluded that business intelligence and analytics are the ideal weapons effective in the fight against fraud in the financial sector, however, they recommended that any softwares developed towards fraud risk management must intergrate people, processes and systems. Ngai, Hu, Wong, Chen and Sun (2010) argue that organizations have procured non-predictive softwares hence for the organizations to successful detect, control and prevent fraud they must purchase predictive softwares. Westland and Jha (2013) assessed credit card fraud pattern, the study found a reduction in incidences of fraud with installation of fraud guard system. Similarly, Dua, Prabhu and Bhatta (2003) concluded that no tools and technologies today are panacea to fraud, however comparably there is a relationship in reduction of fraud with installation of fraud guard systems.

2.3.5. Effect of Corporate Governance Mechanisms on Occurrence of Fraud

Occurrence of fraud is measured using amount of fraud loss, frequency of occurrence and fraud loss recovery rate. Every occurrence of fraud is always facilitated and composed of the three elements which are interactive namely perceived pressure, perceived opportunity and rationalization (Albrecht *et al*, 2009). The internal fraud typologies assessed in the study for occurrence of fraud in commercial banks in Kenya were guided by studies undertaken in Nigerian commercial banks and also annual reports by BFID, these typologies include computer aided fraud, falsification of documents, unofficial borrowings from the teller tills, identity fraud, management fraud and identity fraud (BFID Annual Report, 2014; 2015)

3. Research Methodology

The chapter reports on research philosophy, research design, population, sampling design, data collection methods, research procedures and data analysis methods.

3.1. Research Philosophy

The study adopted positivism research philosophy for the reasons of usage of quantitative research methods, generalization of findings, testing of hypothesis using inferential statistics, specificity of data measurements and finally the reliability and validity of positivism since the findings represent the real situations (Cooper & Schindler, 2014; Kothari, 2014; Saunders, Lewis & Thornhill, 2012)

3.2. Research Design

The study adopted descriptive correlational research design. Correlational research design aims to establish the existence of associations between independent and dependent variables in the same population (Leedy & Ormrod, 2012). Saunders *et al* (2012) explain that correlational research design is suitable for studies where a change in independent variable impacts on dependent variable.

3.3. Population

The population of the study were 43 commercial banks in Kenya (CBK, 2014). Commercial banks in Kenya are classified into three based on Weighted Composite Index (WCI). A commercial bank with WCI of 5% and above is termed Tier I, WCI of between 1% to 5% is termed as Tier II and WCI less than 1% is termed Tier III (Kithinji, 2010). According to CBK (2014), there are 6 institutions, 16 institutions and 21 institutions in Tier I, Tier II and Tier III respectively. The study focused on senior management staff who are responsible for day-to-day management of the institutions. These comprise of CEO and its deputy (where applicable), executive directors, general managers, chief risk officer, chief operating officer, chief financial officer, secretary to the board of directors, treasurer, chief internal auditor and manager of a significant unit of the institution (CBK Prudential Guidelines, 2013)

3.4. Sample Design

Sampling frame of the top management team were drawn from the 13,411 management cadre from all the three tiers using stratified random sampling (Saunders *et al*, 2012; Kothari, 2014). The top management team targeted for the study were identified using the respective websites of the 43 commercial banks in Kenya. The study adopted a sample size of 169 top management staff. The sample size of the study was determined based on proportion of bank employees in top management, the desired level of confidence (95%) and the scientifically acceptable margin of error of 1.5%.

3.5. Data Collection Methods

The study used primary data. A structured questionnaire was developed and used as the main instrument of data collection. The instrument consisted of five sections. Section one the questionnaire collected of the respondents demographics while question two to five collected information related to research question one to four respectively. Section two to five were each partitioned into four parts with Part A confirming existence of independent variables, Part B, C and D examined impact of independent variable on amount of fraud loss, frequency of fraud and fraud loss recovery rate. Respondents were provided with opportunity to present their suggestions and recommendations based on the research questions.

In order to assess the existence of independent variable, Likert scale of 1 to 5 was used where 1 reflects strongly disagree with 5 showing strongly agree. Amount of fraud loss was measured using loss scales of very low, low, moderate, high and very high where a very low fraud loss scale of 1 depicts effective control mechanism while a higher loss scale of 5 depicts an ineffective control mechanisms. To measure frequency of fraud, the study used 5-point frequency rating scale of never, rarely, sometimes, often and always. Fraud loss recovery rate was examined using scales similarly to those of amount of fraud loss were used (Chimi & Russel, 2009; BFID Annual Reports, 2013-2015; ACFE, 2014, Mahoney, 2009)

3.6. Research Procedures

Permission to conduct the research was granted at the university level by the Dean, at industry level through Kenya Bankers Association and also from individual member banks through pre-survey contact. The study instrument was piloted on ten top management staff of commercial banks based in Upper Hill Area of Nairobi and also on two members of ACFE subsequently, the instrument was refined and made ready for distribution.

The research instrument was tested for reliability using Cronbach's coefficient alpha which yielded a score of 0.891 which demonstrated internal consistency of the instrument (Saunders *et al*, 2012). The instrument was also subjected to face, content and construct validity and found to be valid. Construct validity tests using KMO and Bartlett's Test of Sphericity yielded scores of 0.897 and ($p < 0.001$) which imply that the instrument was meritoriously valid.

3.7. Administration of the Research Instrument

A total of 169 questionnaires were printed in pink colour and distributed with the help of two research assistants on drop and pick basis. The distribution of the questionnaires was halted on two occasions due to placement of two commercial banks under statutory management and this delayed data collection period by an additional two months.

3.8. Ethical Considerations

Ethical considerations were observed and maintained during the entire study by protecting the identity of the respondents and explaining the background and objectives of the study to the respondents to ensure that the respondents understood the study and subsequently eliciting accurate information. Issues of confidentiality, anonymity and privacy were maintained. The research instrument did not ask or contained any personal questions.

3.9. Data Analysis Methods

Upon completion of data collection, each questionnaire was assigned unique identifier and case with coded variables prior to proceeding to the next case. Missing data is not likely to be avoided in research and all missing data was coded as '999'. Data was subsequently cleaned to ensure logicalness and alignment to the questionnaire (Kothari, 2014)

The study used descriptive analysis and results presented using tables, bar graphs and pie-charts for ease of explanations and understandings. Central tendency of mean, standard deviation and coefficient of variation (CV) were used as they were suitable for qualitative data. According to Cooper and Schindler (2014) CV of 50% and considered strongly significant while those above 65% are considered insignificant.

Data was tested for normality using skewness and kurtosis. Skewness of greater than +/-1 demonstrates lack of symmetry (Cooper & Schindler, 2014). The study adopted inferential statistics of Pearson's correlational analysis and analysis of variance (ANOVA). Correlation coefficient (r) of +1 represents perfect correlations and on the contrary -1 shows negative perfect correlation. Hypotheses were tested using stepwise regression analysis.

4. Results and Findings

4.1. Introduction

The data was collected using structured questionnaire from a sample size of 169 top management staff of commercial banks based within Nairobi City which ultimately holds the commercial banks' head offices. Demographic information was presented and discussed and subsequently each of the four research questions which established the relationship the effect of corporate governance on occurrence of fraud in commercial banks in Kenya. The data was analysed using both descriptive and inferential statistics and null hypothesis tested using stepwise regression analysis. The response rate of the study was 93% which demonstrated the effectiveness of strategies employed during data collection.

4.2. General Information

The study sought demographic data of age, years with the current employer, education qualification, professional qualifications, department headed, rank with the organization, type of participation in fraud management process and lastly tier of the bank. The study showed that 73% of the respondents were male with only a mere 27% being female which demonstrates gender imbalance. The study shows that nearly a half (43%) of the respondents are aged between 35 years and 44 years with only 8% aged above 55%. According to the study, majority (99%) of the respondents have served their current employers for a period between 1 to 3 years.

The findings show that slightly more than a half (53%) of the respondents have masters degree with only 1% having doctoral academic qualifications. The study indicates that 20% of the respondents have accounting qualifications with 10% holding banking and 9% having finance qualifications. The study further demonstrates that the department headed spread across security and investigations (12%), central operations (10%), credit risk management (8%) and operational risk management (11%) with nearly a quarter (24%) indicate to be heading departments not provided in the list. The study displayed that 40% are departmental heads, 38% are senior managers with only 5% being managing directors and chief executive officers.

The findings of the study show that nearly quarter (24%) of the respondents had not participated in fraud risk management process while a third (31%) had participated fraud policies and procedure approvals. The study highlighted that almost all the commercial banks (94%) have fraud risk management policy except for a few (6%). The tier of the bank for the respondents appeared evenly spread with 39% being from tier II, a third (37%) from tier I while nearly a quarter (24%) work for tier III.

4.3. Main Findings

4.3.1. Effect of Top Leadership's Tone at the Top on Occurrence of Fraud

In relations to the effect of top leadership's tone at the top on occurrence of fraud, using grouped correlational analysis, the study showed significant correlations between top leadership's tone at the top and amount of fraud loss ($r = -0.47$, $p < 0.01$) and frequency of fraud ($r = 0.38$, $p < 0.01$) and increases fraud loss recovery rates ($r = 0.41$, $p < 0.01$). The study found existence of proper reward systems to staff members significantly predicted unofficial borrowings by the tellers from the teller tills ($\beta = -3.51$, $p < 0.05$).

4.3.2. Effect of Prudential Control Systems on Occurrence of Fraud

In regards to effect of prudential control systems set by CBK on occurrence of fraud, using grouped correlational analysis, the study showed that tighter prudential control systems set by CBK lowers the amount of fraud loss ($r = -0.58$, $p < 0.01$) and enhances the fraud loss recovery rates ($r = 0.34$, $p < 0.01$). The study further found that "Banking Fraud Investigations Department Officers are effective in carrying out their duties" significantly predicted occurrence of fraud ($\beta = -5.51$, $p < .001$), as did "change of reporting structure of Banking Fraud Investigation Department to be answerable to the CBK Governor instead of the current structure where they are answerable to Directorate of Criminal Investigations under National Police Service" ($\beta = -4.49$, $p < .01$).

4.3.3. Effect of Alignment of Top Leadership's Compensation Structure on Occurrence of Fraud

In relations to effect of alignment of top leadership's compensation structure to occurrence of fraud, stepwise regression analysis depicted that "Increase in monthly salary" significantly predicted occurrence of management fraud ($\beta = -3.76$, $p < .001$), as did "equity based compensation" affected top management participation in computer-aided fraud ($\beta = -2.71$, $p < .01$).

4.3.4. Effect of Fraud Response Strategies on Occurrence of Fraud

In regards to effect of fraud response strategies on occurrence of fraud, using analysis of variance, the results of the showed that that robust fraud response strategies by the banks, lower amount of fraud loss ($r = -0.28, p < 0.01$). The study evidenced that effectiveness of fraud response strategies yield higher fraud loss recovery rates ($r = 0.27, p < 0.01$). using stepwise regression analysis, the study found that “Established procedures of reporting incidences of fraud” significantly predicted occurrence of fraud through falsification of documents by staff ($\beta = -3.702, p < .01$). The more the established the procedures are for reporting incidences of fraud, the less the likelihood of fraud through falsification of documents by staff.

5. Discussions, Conclusions and Recommendations

5.1.1. Effect of Top Leadership’s Tone at the Top on Occurrence of Fraud

The study showed significant correlations between top leadership’s tone at the top and the amount of fraud loss ($r = -0.47, p < 0.01$) and frequency of fraud ($r = 0.38, p < 0.01$). Additionally, the results showed significant relationship between top leadership’s tone at the top and fraud loss recovery rate ($r = 0.41, p < 0.01$). The correlational findings of this correspond with previous studies which established an association between tone at the top and fraud risk management (Anca *et al*, 2013; PwC, 2012; Law, 2011).

5.1.2. Effect of Prudential Control Systems on Occurrence of Fraud

The study found significant grouped correlations between prudential control systems and amount of fraud loss ($r = -0.58, p < 0.01$) and fraud loss recovery rate ($r = 0.34, p < 0.01$) which indicated that tighter prudential control systems set by CBK are perceived to lower amount of fraud loss and enhances fraud loss recovery rates. The study findings on BFID effectiveness ($M = 2.58, SD = 1.09, CV = 0.42$) supports previous findings by, Brooks and Button (2012) who argued that investigators have array of skills and special knowledge in crime deterrence and the alleged skill limitation in police force is not because of lack of interest but due to factors beyond their control. The results of this study disputes that of Brooks, Button and Frimpong (2009), Akelola (2015), and Technology Banker (2012) all who observed that police is incapable, disinterested in dealing with fraud. The level of success rate of BFID could also be facilitated by appropriate relationship between BFID officers and the internal fraud investigators present in respective commercial banks, observantly most of the internal fraud investigators are ex-disciplined forces personnel.

5.1.3. Effect of Alignment of Top Leadership’s Compensation Structure on Occurrence of Fraud

The study found significant grouped correlations between alignment of top leadership’s compensation structure and amount of fraud loss ($r = -.40, p < 0.01$) and fraud loss recovery rate ($r = 0.24, p < 0.01$) which indicated that the more the alignment of top leadership compensation structure the lower the amount of fraud loss and the higher the fraud loss recovery rates. Stepwise regression analysis depicted that “Increase in monthly salary” significantly predicted occurrence of fraud ($\beta = -3.76, p < .001$), as did “equity based compensation” ($\beta = -2.71, p < .01$). The study findings show that pay-for-performance components are important. These findings are similar to those of Wowak *et al* (2011), Nyaoga *et al* (2014), Liu *et al* (2014) who found that monthly salary, annual bonus, stock based compensation and equity based compensation are important and if aligned properly then they influence attainment of positive results by top management. The study found stock based compensation and equity based compensation to marginally influence identity fraud and computer aided fraud. The findings appear consistent with previous empirical studies carried out in the United States of America and China which associated stock based compensation and equity based compensation specifically to manipulation of accounting statements or management fraud (Faulkender *et al*, 2010; Ryan & Tian, 2009; Zhang *et al*, 2008; Chan *et al*, 2015; Hab *et al*, 2015)

5.1.4. Effect of Fraud Response Strategies on Occurrence of Fraud

The study found significant grouped correlations between effect of fraud response strategies and amount of fraud loss ($r = -0.28, p < 0.01$) and fraud loss recovery rate ($r = 0.27, p < 0.01$) which indicated that the more robust the fraud response strategies the lower the amount of fraud loss and the higher the fraud loss recovery rate. Using stepwise regression analysis, the study found that “Established procedures of reporting incidences of fraud” significantly predicted occurrence of fraud through falsification of documents by staff ($\beta = -3.70, p < .01$). The findings of the study concur with those of Biegelman and Bartow (2012), Cascarino (2013), Deloitte (2015), ACFE (2015), Westland and Jha (2013), and Ngai *et al* (2010) but contracts a study by Ayagre and Aidoo-Buannel (2014)

5.2. Conclusions

5.2.1. Effect of Top Leadership’s Tone at the Top on Occurrence of Fraud

In relations to the effect of top leadership’s tone at the top, the study concluded that top leadership’s tone at the top significantly affect occurrence of fraud in commercial banks. Positive top leadership’s tone at the top reduces amount of fraud loss and frequency of fraud and enhances fraud loss recovery rates. Therefore, null hypothesis was rejected and alternative hypothesis accepted.

5.2.2. Effect of Prudential Control Systems on Occurrence of Fraud

In relations to prudential control systems, the study concluded that the prudential control systems set by the regulator significantly influence occurrence of fraud. The more stringent the prudential control systems set by the regulator, the less the likelihood of fraud. Thus, null hypothesis was rejected and alternative hypothesis accepted.

5.2.3. Effect of alignment of Top Leadership's Compensation Structure on Occurrence of Fraud

In relations to the effect of alignment of top leadership's compensation structure, the study concluded that alignment of top leadership's compensation structure significantly affect occurrence of fraud. The more commensurate the top leadership's compensation structure, the less the likelihood of fraud in commercial banks in Kenya. Therefore, null hypothesis was rejected and alternative hypothesis accepted.

5.2.4. Effect of Fraud Response Strategies on Occurrence of Fraud

Regarding the effect of fraud response strategies, the study concluded that fraud response strategies significantly affect occurrence of fraud in commercial banks in Kenya. The more robust the fraud response strategies, the less the likelihood of fraud. Therefore, null hypothesis was rejected and alternative hypothesis accepted.

5.3. Recommendations

The study recommended that commercial banks should employ top leadership with high integrity whose fit and proper screening are regularly undertaken by the CBK. The study also recommended improvement in banking supervision through capacity building of CBK inspectors and creation of fraud specific prudential reports and legislative amendments to create fraud explicit courts and change of BFID reporting structure to the Governor of the CBK and allocating them prosecutorial powers. Additionally, the study recommended implementation of Remuneration Committee by each commercial banks and alignment of top leadership's compensation structure to occurrence of fraud. Finally, the study recommended all inclusive fraud response team and also KBA creating strategic partnerships and use political clout to improve judicial and legal systems necessary for efficient management of fraud.

5.4. Suggestions for Further Studies

The study suggests repetition of the study by getting the perception of the board of directors and non-top leadership staff of the commercial banks, replication of the study to other financial institutions regulated and supervised by CBK. Finally, the study suggested inclusion of other internal and external fraud typologies.

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APPENDIX 1: Testing Hypothesis One

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	There are proper reward systems to staff members.	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: Occurrence of Fraud

Table 1

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.239 ^a	.057	.050	17.60844

a. Predictors: (Constant), There are proper reward systems to staff members.

Table 2

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2494.286	1	2494.286	8.045	.005 ^b
	Residual	41237.596	133	310.057		
	Total	43731.881	134			

a. Dependent Variable: Occurrence of Fraud

b. Predictors: (Constant), There are proper reward systems to staff members.

Table 3

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	188.881	4.200		44.968	.000
	There are proper reward systems to staff members.	-3.505	1.236	-.239	-2.836	.005

a. Dependent Variable: Occurrence of Fraud

Table 4

Excluded Variables ^a						
Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	Top management comprise of people with integrity.	.072 ^b	.576	.566	.050	.458
	Top management adhere to managerial controls set by the bank.	.168 ^b	1.472	.143	.127	.537
	The bank provides favourable working conditions to staff.	.007 ^b	.056	.955	.005	.413
	Disciplinary rules are applied equally to all staff.	-.015 ^b	-.125	.900	-.011	.474

a. Dependent Variable: Occurrence of Fraud

b. Predictors in the Model: (Constant), There are proper reward systems to staff members.

Table 5

APPENDIX 2: Testing Hypothesis Two

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Banking Fraud Investigations Department Officers are effective in carrying out their duties.	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	Change of reporting structure of Banking Fraud Investigation Department to be answerable to the CBK Governor instead of the current structure where they are answerable to Directorate of Criminal Investigations under National Police Service would make them	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: Occurrence of Fraud

Table 6

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.277 ^a	.076	.069	18.04963
2	.398 ^b	.159	.146	17.29457

a. Predictors: (Constant), Banking Fraud Investigations Department Officers are effective in carrying out their duties.

Table 7

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3533.741	1	3533.741	10.847	.001 ^b
	Residual	42678.364	131	325.789		
	Total	46212.105	132			
2	Regression	7328.832	2	3664.416	12.251	.000 ^c
	Residual	38883.273	130	299.102		
	Total	46212.105	132			

a. Dependent Variable: Occurrence of Fraud

Predictors: (Constant), Banking Fraud Investigations Department Officers are effective in carrying out their duties.

Predictors: (Constant), Banking Fraud Investigations Department Officers are effective in carrying out their duties. Change of reporting structure of Banking Fraud Investigation Department to be answerable to the CBK Governor instead of the current structure where they are answerable to Directorate of Criminal Investigations under National Police Service would make them.

Table 8

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	190.391	4.016		47.410	.000
	Banking Fraud Investigations Department Officers are effective in carrying out their duties.	-4.723	1.434	-.277	-3.293	.001
2	(Constant)	209.134	6.519		32.082	.000
	Banking Fraud Investigations Department Officers are effective in carrying out their duties.	-5.505	1.391	-.322	-3.956	.000
	Change of reporting structure of Banking Fraud Investigation Department to be answerable to the CBK Governor instead of the current structure where they are answerable to Directorate of Criminal Investigations under National Police Service would make them	-4.494	1.262	-.290	-3.562	.001

a. Dependent Variable: Occurrence of Fraud

Table 9

Excluded Variables ^a						
Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Supervisions by CBK are effective in reducing incidences of fraud	.054 ^b	.510	.611	.045	.642
	Operational Risk Management guidelines established by CBK are effective in reducing incidences of fraud.	.143 ^b	1.394	.166	.121	.667
	Periodic on-site supervisions undertaken by CBK are effective in minimizing incidences of fraud.	.082 ^b	.830	.408	.073	.724
	Change of reporting structure of Banking Fraud Investigation Department to be answerable to the CBK Governor instead of the current structure where they are answerable to Directorate of Criminal Investigations under National Police Service would make them	-.290 ^b	-3.562	.001	-.298	.975
2	Supervisions by CBK are effective in reducing incidences of fraud	.013 ^c	.129	.898	.011	.634
	Operational Risk Management guidelines established by CBK are effective in reducing incidences of fraud.	.114 ^c	1.156	.250	.101	.662
	Periodic on-site supervisions undertaken by CBK are effective in minimizing incidences of fraud.	.029 ^c	.302	.763	.027	.705

a. Dependent Variable: Occurrence of Fraud

b. Predictors in the Model: (Constant), Banking Fraud Investigations Department Officers are effective in carrying out their duties.

c. Predictors in the Model: (Constant), Banking Fraud Investigations Department Officers are effective in carrying out their duties., Change of reporting structure of Banking Fraud Investigation Department to be answerable to the CBK Governor instead of the current structure where they are answerable to Directorate of Criminal Investigations under National Police Service would make them

Table 10

APPENDIX 3: Testing Hypothesis Three

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Increase in monthly salary would make me more effective in reducing incidences of fraud.	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	My remuneration comprise of equity based compensation	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: Occurrence of Fraud

Table 11

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.312 ^a	.097	.090	17.68854
2	.365 ^b	.133	.120	17.39637

a. Predictors: (Constant), Increase in monthly salary would make me more effective in reducing incidences of fraud.
b. Predictors: (Constant), Increase in monthly salary would make me more effective in reducing incidences of fraud. , My remuneration comprise of equity based compensation.

Table 12

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4475.616	1	4475.616	14.304	.000 ^b
	Residual	41613.643	133	312.885		
	Total	46089.259	134			
2	Regression	6141.597	2	3070.798	10.147	.000 ^c
	Residual	39947.663	132	302.634		
	Total	46089.259	134			

a. Dependent Variable: Occurrence of Fraud
b. Predictors: (Constant), Increase in monthly salary would make me more effective in reducing incidences of fraud.
c. Predictors: (Constant), Increase in monthly salary would make me more effective in reducing incidences of fraud. , My remuneration comprise of equity based compensation

Table 13

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	192.133	4.053		47.403	.000
	Increase in monthly salary would make me more effective in reducing incidences of fraud.	-4.029	1.065	-.312	-3.782	.000
2	(Constant)	196.825	4.460		44.134	.000
	Increase in monthly salary would make me more effective in reducing incidences of fraud.	-3.762	1.054	-.291	-3.570	.000
	My remuneration comprise of equity based compensation	-2.707	1.154	-.191	-2.346	.020

a. Dependent Variable: Occurrence of Fraud

Table 14

Excluded Variables ^a						
Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
		Tolerance				
1	My monthly salary is adequate	-.023 ^b	-.267	.790	-.023	.944
	My annual bonus is adequate.	-.102 ^b	-1.222	.224	-.106	.972
	My remuneration comprise of stock based compensation	-.143 ^b	-1.734	.085	-.149	.983
	My remuneration comprise of equity based compensation	-.191 ^b	-2.346	.020	-.200	.988
2	My monthly salary is adequate	.051 ^c	.577	.565	.050	.830
	My annual bonus is adequate.	.025 ^c	.239	.812	.021	.611
	My remuneration comprise of stock based compensation	.120 ^c	.687	.493	.060	.216

a. Dependent Variable: Occurrence of Fraud
 b. Predictors in the Model: (Constant), Increase in monthly salary would make me more effective in reducing incidences of fraud.
 c. Predictors in the Model: (Constant), Increase in monthly salary would make me more effective in reducing incidences of fraud. , My remuneration comprise of equity based compensation

Table 15

APPENDIX 4: Testing Hypothesis Four

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Established procedures of reporting incidences of fraud are effective	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: Occurrence of Fraud

Table 16

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.274 ^a	.075	.068	17.51930

a. Predictors: (Constant), Established procedures of reporting incidences of fraud are effective

Table 17

ANOVA ^a						
Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	3305.202	1	3305.202	10.769	.001 ^b
	Residual	40821.123	133	306.926		
	Total	44126.326	134			

a. Dependent Variable: Occurrence of Fraud
 b. Predictors: (Constant), Established procedures of reporting incidences of fraud are effective

Table 18

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	191.322	4.371		43.771	.000
	Established procedures of reporting incidences of fraud are effective	-3.702	1.128	-.274	-3.282	.001

a. Dependent Variable: Occurrence of Fraud

Table 19

Excluded Variables^a

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Top management team form part of fraud response team.	-.129 ^b	-.962	.338	-.083	.385
	Internal fraud investigations department is effective in handling incidences of fraud.	-.095 ^b	-.720	.472	-.063	.405
	Recommendations by the fraud response team are effectively implemented	-.068 ^b	-.617	.538	-.054	.579
	Installation of fraud guard system has reduced incidences of fraud	-.108 ^b	- 1.179	.240	-.102	.833
a. Dependent Variable: Occurrence of Fraud						
b. Predictors in the Model: (Constant), Established procedures of reporting incidences of fraud are effective						

Table 20