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# Effects of Internal Control Systems on Fraud Detection in Commercial Banks in Somalia

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## ABSTRACT

The internal controls had been an important part of business operations ever since economic activities became large scale to prevent company losses through errors, theft and embezzlement. Internal control are designed to detect fraud before its too late. The general objective of this study would be to determine the effects of internal control systems on fraud detection in Somali commercial banks. Also this study would use a sample of five commercial banks in Mogadishu, namely, Salaam Somali Bank, Dahabshil Bank, Trust African Bank, International Bank of Somalia and premier Bank. Specifically, this study would be evaluating the effects of establishment of responsibilities, segregation of duties, documentation procedures and physical controls on fraud detection in Somali commercial banks. Also this study would use the framework established by the Committee of Sponsoring Organisations of the Treadway Commission known shortly as COSO Framework. The study would adopt a descriptive study design in data collection. The target population of this study would be 240 people located at headquarters of the commercial banks. This study would use the stratified random sampling technique. The data collection procedure of this study was through hand picking. The study would use quantitative data collection method whereby data will be gathering by the use of close ended questionnaires which were self administrated. The study would make use of the statistical Package for Social Science (version 20) with hand printed worksheets and Microsoft Excel 2007. To analyse the data regression model would be applied and statistical inference would be made from the output of this procedure. The major findings of this study was that there was a positive relationship between establishment of responsibilities, segregation of duties, documentation process and physical controls and fraud detection of the Commercial Banks in Somalia. The study further recommend the need for the Commercial Banks in Somalia to increase their establishment of responsibility, segregation of duties, documentation procedures, physical controls as it was founded that those variables had positively affects the fraud detection of Commercial Banks in Somalia.

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## 1. Introduction

Internal controls have been an important part of business operations ever since economic activities became large scale to prevent company losses through errors, theft and embezzlement (Dorminey, Fleming, Kranacher, & Riley, 2012). The importance of internal controls grew to a new height following the well documented scandals that caught the attention of the world (Shapiro & Matson, 2008). One of the most widely known reaction of those scandals was the introduction of Sarbanes-Oxley Act in the American congress to improve internal controls of corporate America to prevent further losses. The main purpose of such movements was to help prevent fraud in the corporate level (Smith, 2015).

The purpose of such Sarbanes-Oxley Act and related endeavors has been to prevent the occurrence of any fraud so that the business environment works on a healthy system of security and financial safety. However recent surveys show that fraud is a still real threat in any modern business more than ever before (Wells, 2004) and (Kramer, 2015). Businesses that feel the threat of fraud come from both public

and private sectors; manufacturing, merchandising and services. The service industries that are particularly prone to fraud are the financial institutions with banks being the prime victims, banks as financial institutions even face greater risk to fraud when it comes to its occurrence and consequences (Olatunji, 2009).

The banks engage services that involve money which is the most vulnerable when it comes to the temptations to commit fraud (Weygand, Kimel & Kieso, 2010). Thus any bank which has an internal control system that is weak is exposed to a real threat of fraud and related disasters (Olatunji, 2009). Fraud detection is reduced when a mediocre system of internal controls is in place. This may have led to the demise of otherwise much reputable banks to bankruptcy. This does not mean that every failed bank is due to fraud but it does mean that every unbridled perpetration of fraud results in the death of the business in question (Olatunji, 2009).

Fraud is an act of unfaithful appropriation of an entrusted assets or beneficial status conferred by a principal (Firozabade, Tan & Lee, 1999) and (Krambia-Kapardis,

2002). The agent thus consumes what was entrusted at the expense of the principal who most of the time is not present. Fraud is rampant in the business world. Around 600 billion dollars were lost to fraud in the US alone in the year 2002 (Hotfletter, 2004). In the UK and elsewhere the figure exceeds several billions a year (Rae & Subramaniam, 2008). And in Africa, Billions of dollars of public and private money disappears or is un-accounted for in a regular basis (Bakre, 2008). In a recent study, (Gbegi and Adebisi, 2015) also reports billions of public money lost in fraud and related offenses in Nigeria which is one of the growing economies in Africa.

Interestingly, fraud has been described as going alongside normal business practice in virtually every corner of the world (Wells, 1990) and (Elangkovan and Said, 2013). This can be expected with the simple reality that human beings always act in self interest (Kramer, 2015). This is self interest is basically making the person inclined to take actions that are detrimental to the company he or she is working for and at least pettily beneficial in the case of the fraudster (Well, 1990). As fraud is such an epidemic in the business world, it can be claimed that there is no single company free of it on the face of earth (Elangkovan & Said, 2013).

This ambitious claim has been made simply because the fraud itself is never an easy thing to define (Elangkovan & Said, 2013). However, if we look at fraud in simple terms, fraud is any deceitful act that is an expense either qualitative or quantitative to the business organization and a gain either qualitatively or quantitative to the fraudster, then fraud can be claimed to be present in any working environment (Wells, 1990) and (Comer, 1998) and (Olatunji, 2009) and (Elangkovan & Said, 2013) and (Kramer, 2015). So it can be gleaned from the above that no company is safe from fraud no matter how sophisticated and talented its management team. In the same line of argument, fraudsters are said to come from every rung of the business organizations. This means, every group within the organizations be it a management team, skilled workers, part timers, temporary laborers and even board members are never immune from these temptations (Elangkovan & Said, 2013). This can be ascertained based on the cases that were reported time and again in the various disciplines and literature as well as the practical and the profession (Wells, 1990). The system required to detect and monitor the company assets in timely fashion is what is called internal controls.

The effectiveness of the internal control is largely dependent upon the willingness, ethics and training of the management team (Adeoye & Adeoye, 2014). If management is averse to such measures and is excited sometimes in overriding the internal controls, the system cannot perform and fraud is expected to set in and destroy (Wells, 1990) and (Comer, 1998) and (Wells, 2004) and (Elangkovan & Said, 2013).

Fraud detection in banks has not been that successful in some parts of the world (Akindele, 2011). Bank financial disasters as a result of fraud still permeate and this depicts a bleak picture for the entire industry. Africa has never been any better. Africa has seen its share of business failures banks being the biggest. A good example of Africa banking problem is Nigeria's growing fraud in its financial institutions.

Nigeria as Africa's leading economy, is suffering under the vicious torment of fraudsters stealing money from the banks (Olatunji, 2009). The reported if attempted cases if fraud in Nigerian media attests to this fact (Olatunji, 2009).

If the fraud in banks persist throughout the continent, the economic growth will slow down and consequently the poverty and financial instabilities will continue to threaten the economic development efforts put forth by the African states. This will go worse for the even the poorer nations in the continent. Somalia is one of the poorest nation in the entire continent whilst the country has suffered under the brutality of civil wars, poverty, illiteracy and social degradation.

Financial institutions in Somalia following the establishment of the incumbent federal government have increased in numbers. However, only 6 banks will be selected namely, Salaam Somalia Bank, Premier Bank, and international bank of Somalia, Dahabshiil International Bank, Amal Bank of Somali and Trust African Bank (Central Bank of Somalia, 2015). This list is drawn from the website of the Central Bank of Somalia at the time of writing this study.

The Central Bank of Somalia is in the process of establishing regulatory framework to guide the industry. In the meantime, the business of banks is continuing to grow in number taking advantage of the relative peace that Mogadishu is enjoying these years.

According to Abditon (2015) fraud was rampant in Mogadishu public and private institutions. There are also some unofficial word of mouth stories repeatedly indicating bank managers who had fled the country took briefcases full of money before taking refuge in one of the countries in Europe. There are sources that particularly pinpoint to the fact that a huge fraud happened to some banks in the context of Somalia (Haraf, 2011). This was due to the fact internal controls deficiencies were widespread in the banking sector at the time of such study (Haraf, 2011).

The Somali banks are mushrooming only recently after relative peace has permeated in the Somali capital Mogadishu following the withdrawal of the resurgents from the city in August 2011. The oldest of the chosen banks is Salaam Somali Bank which was established in the year 2009. It has links with Hormuud Telecom the largest telecom operator in the country. The bank has 10 branches in all over the country with the headquarter being Mogadishu.

Premier Bank of Somali was founded in the year 2013. The bank operates only within the vicinity of the capital city but plans to expand in the near future. It offers the same services any commercial bank offers including, ATM cards, SWIFT FOREX and payroll processing (Kulmie, 2015). The bank has also recently signed an agreement with Master Card to issue debit cards to its customers (Saleem, 2015).

International Bank of Somalia according to its website, the international Bank of Somalia has been registered and licensed from central bank of Somalia since July 2013. IBS is an Islamic bank that undertakes retail investment banking activities. IBS deals with Microfinance and qard hassan loans and engages community finance which is a program that is contributed community members to help key areas that helps bridges community.

Salaam Somali Bank was established in October 2009 to answer to this need. Whether you are an individual or institutional client, SSB is there to help you as a partner in your achiever . It is committed to providing the highest level of personalized banking inspection and repair. We promise to offer customized solutions that meet the unique needs of our clients through the right combination of traditional banking Service and special feature for the Somali community. Ultimately, we strive to make your winner simple (Salaam Somali Bank, 2015).

The banking sector in Somalia is showing a significant paradigm shift away from traditional means of money conveyance. Salaam Somali Bank (SSB) bear the critical responsibility of leading the way forward in establishing a stable and moral force banking system replete with moral force and cutting-edge mathematical product and services (Salaam Somali Bank, 2015).

Trust African Bank was founded in 2012, by likeminded shareholder; Trust African Bank is a financial institution that will provide financial and banking service in submission with Sharia law rule of thumb and banking regulations in Somalia. Corporate Trust African Bank commits to provide a differentiated banking production and services through its experienced management squad and up-to-date technology that operates within Sharia principle (Trust African Bank, 2015).

Under these circumstances, an establishment of internal controls to detect fraud before its occurrence is an absolute necessity (Albrecht & Albrecht, 2004). If Somalia has to attract and earn the trust of the investing community, its banks must utilize internal control systems that effectively detect fraud as they being attempted not necessarily after when the damage has already been done. Establishment of internal controls can minimize the damages that are due to both internal and external frauds (Wells, 2004).

These interrelated parts of internal control must be available and working legitimately keeping in mind the end goal to have a sufficient and viable inner control framework. On the other hand, contingent upon the circumstances and the entity's operation, these parts can be connected together in any grouping. As worries about corporate offense and business disappointments proceed with, the governing body, administration and inner control examiners ought to give more thoughtfulness regarding control environment. The control environment comprises of various components, for example, trustworthiness and moral qualities, management's rationality and working style, association structure, human asset arrangements and hones, the top managerial staff and review committee's contribution, skill of faculty, and task of power and obligation intended to give a positive control cognizance inside of the substance. The control environment gives a premise to assess the sufficiency and viability of inner control frameworks and survey an entity's capacity to guarantee capable corporate administration and dependable monetary reporting. The control environment serves as the establishment for alternate parts (Razae, 1995).

Risk assessment requires ID and examination of both interior and outer dangers and acknowledgment of reasonable business hazard in accomplishing an entity's goals. Hazard appraisal helps administration and inner examiners to be in control. Being in control requires supporting the capacity to recognize, comprehend and respond in an auspicious way to occasions, conditions, difficulties, opportunities and dangers relating to the entity's operational, budgetary reporting, and consistence targets. The danger evaluation process includes deciding the essentialness of the danger in fiscal terms or as far as the picture or notoriety of the substance, the likelihood of danger happening, and how to relieve the effects of the danger to lessen exposures to adequate levels. The COSO report helps administration and inward inspectors to build up a continuous procedure of recognizing changes in an entity's business environment and to take activities as important to oversee hazard (Razae, 1995).

Control activities are the strategies, methodology, and decides that give sensible affirmation that internal control targets are completed appropriately and dangers are being overseen successfully. These covering control exercises are isolated into three classes of working controls, budgetary data controls, and consistence controls. Working control exercises are coordinated towards overseeing and checking the entity's operations. Monetary data control exercises are gone for guaranteeing dependable money related reporting handle and defending the entity's resources. Consistence control exercises are outfitted towards guaranteeing consistence with material laws and regulations and in addition adherence to moral rules and lead (Razae, 1995).

The information and communication of internal control consider data caught and how messages course through an element. All individuals in the element ought to get a reasonable message from top administration that internal control obligations must be considered important. Faculty influenced by an internal control framework ought to plainly comprehend the pertinent part of the internal control frameworks, how they work, and their part and obligation in the framework. Specifically, management's desires of people and their dedication to a sound and compelling internal control framework should be imparted. Correspondence ought to stream in all headings in an organization's internal control capacity – up, down and crosswise over – in conveying all important interior and outside data (Razae, 1995).

The monitoring component requires that internal control frameworks be checked on both a progressing and intermittent premise to stay successful. Progressing observing is a persistent appraisal of different parts of the interior control framework through appropriate preparing and assessment of staff, constant supervision, and execution of suggestions gave by evaluators. Occasional assessment can supplement continuous checking and ought to be utilized on an impromptu premise. The recurrence and extent of occasional assessment rely on upon the viability and consequences of progressing observing and in addition the evaluation of dangers connected with the inner control framework (Razae, 1995).

The capacity of building up criteria against which the internal control framework is checked and assessed is essentially management's obligation. Lacks ought to be recognized through checking techniques, be accounted for to the individual in charge of the capacity for remedial activities and to one level of administration over the specifically capable individual who has oversight obligation to guarantee that restorative moves are being made. In particular, interior inspectors are in charge of reporting genuine inner control insufficiencies specifically to top administration, the directorate, and review advisory groups (Razae, 1995).

Each of the five internal control segments must be available and working successfully to guarantee accomplishment of the three classes of interior control goals. Undoubtedly, there is an immediate relationship between control destinations and control segments that ought to be as a result to accomplish the goals. Management-established and inside auditors-monitored internal control approaches and systems can fill different needs and add to the successful working of all inner control parts. These internal control segments can apply to an entity's whole internal control framework or to the accomplishment of one or more (Razae, 1995).

The establishment of internal controls involves undertaking what is called control activities (Weygtandt et al.,

2010). Control activities is particularly designed to bring the fraud happening incidents into a minimum (Weygant et al., 2010). It consists, establishment of responsibilities, segregation of duties, documentation procedures, physical controls, independent verification and human resource controls (Weygant et al., 2010).

Fraud and the related forgeries, which are dishonestly making copy of customer documents and using it to withdraw cash whatever type of account involved, are considered to be the main worry that bankers deal with in their day to day activities (Oloidi & Ajinaja, 2014). This happens because banks mainly deal with financial assets and ready cash which is considered the most liquid of all assets making it all the more susceptible to theft and embezzlement more than anything else (Weygant, Kimel & Kieso, 2010). For this simple reason banks frequently develop fraud monitoring and detection systems to either prevent an imminent threat of fraud or detect an ongoing fraud almost immediately before its too late (Botton & Hand, 2002). Fraud is the single most deadly threat that shakes the banking industry in its foundations (Idolor, 2010).

Internal controls are designed to detect fraud before its too late (Firozabadi, Tan & Lee, 1999). This is simply true because when fraud happens, all that could be lost is lost. However, making sure that fraud does not happen in the first place is the responsibility of the bank managers (Weygant et al., 2010). Although fraud is being bad for the business and its prevention a must for every bankers, fraud is happening regardless (Olatunji, 2009).

Although systems are developed to prevent fraud at every level, and security measures are improved to the maximum, fraud is still being perpetrated no matter which guards are used against its occurrences (Bolton & Hand, 2002) and (Wells, 2004). The situation is more hazardous for small business banks that emerged in the developing countries. The case is even more so in the Somalia context, a country that repeatedly topped the list of the most corrupt nations in the world. The types of frauds that are relevant in banking situations require investigation and insight to explain their effect on banks and their systems. As the menace of fraud is prevalent and even more imminent than ever before, designing and implementing an effective internal control is a must for every bank (Seetharam et al., 2004). Internal controls are effective when management deliberately establishes the quality of same to be optimum so that fraud problems are put to the minimum (Rae & Subramaniam, 2008).

It is widely held that good internal controls that is established within the organization across all units increases the likelihood that fraud is detected in timely fashion (Rae & Subramaniam, 2008). Control activities relate to procedures which are detailed set of guidelines put in place to monitoring transaction and information processing of the company (Rae & Subramaniam, 2008).

Although effective internal controls is though t to be able ward off fraud (Rae & Subramaniam, 2008) how the individual internal controls items in the control activities, that is, establishment of responsibilities, segregation of duties, documentation procedures, and physical controls perform has produced mixed results (Stringer & Carey, 2002). Thus a study is required to investigate the relationship between internal controls and fraud detection, and since banks are the more vulnerable (Olatunji, 2009) carrying out a research in a bank setting is becomes important.

Also a study is necessary to be undertaken for the simple and glaring reason in the case of Somalia. Banks have been opened only recently following the establishment of the of the federal government that has been said is the end of the transitional system. The oldest bank in the country has been established officially in 2009. Therefore no previous research has been conducted in the context of Somali banks.

Although banks try to watch out for frauds and prevent them from occurring, there are still fraudsters out there stealing customer money by avoiding all measures taken to prevent them from occurring (Olatunji, 2009). Meanwhile Somali banks are now opening to the world and introducing ATM machines and cash withdrawal facilities including debit and credit cards which have international access (Mzekanda, 2015). These facilities are known to attract fraudsters in droves (Levi, 2000) which Somali banks even more susceptible for a fraud to occur. Thus a study is required to investigate how banks internal controls, specifically control activities can help fraud detection in the Somali banks.

## **2. Literature Review**

### **Theoretical Framework**

Internal controls are put in place mainly to safeguard company assets from misappropriation alongside other goals and objectives. The system of internal controls is widely used in financial institutions to help identify system problems and quickly solve those problems in time (Pramod, Li & Gao, 2012). This study will use the framework established by the Committee of Sponsoring Organizations of the Treadway Commission known shortly as COSO framework.

#### **a. Committee of Sponsoring Organization of the Treadway Commission Framework (COSO)**

The COSO framework is one of the most important frameworks dealing with internal control structures and designs (Lasalle, 2007). It is divided into five components, control environment, risk assessment, control activities, information and communication, and monitoring (Ma & Ma, 2011). Each of the five components has its own sub sections that detail the requirements for companies to effectively run an internal control system that is well structured and applied. The components also provide detailed guidelines and support through the establishment, maintenance and upgrades of any internal control system for any type of organization whether it is a financial institution, merchandising or manufacturing.

The five COSO framework internal control components are interrelated and are all important. However, the control activity is one of the most important when it comes to safeguarding assets of the company (Agbejule & Jokipii, 2009). Control activities contain policies, procedures that ascertain to management whether management's commands are followed appropriately. This apparently includes that there should not be any attempt to defraud the organization in the process of running the normal of operations. The number of control activities put in place in any particular organization can vary from company to company.

COSO framework is by far the most widely framework in the business industry to evaluate and report on internal controls of the organizations (Lasalle, 2007). Accountants prefer to use this framework over other frameworks since their expertise lies herein. This is so simply because this framework looks the business organization from the accounting perspective rather than from technological and criminological perspectives as other framework do.

Control activities are the policies and procedures designed to make sure that management instructions are followed

accordingly in the day to day business transaction processing and managing activities (Geiger, Cooper & Boyle, 2004). Studies show that control activity component of the COSO framework is the most effective in warding off fraud and helping auditors identify control weaknesses. This is because control activities are built with the recognition of the immediate risk the business is facing so that it is duly mitigated in the process (Rittenberg, Martens & Landes, 2007). These activities form the backbone of any internal control since they are tied to the real world tasks that are routinely carried out in any business setting.

#### **b. Agency Theory**

The agency theory paradigm, first formulated in the academic economics literature in the early 1970s had diffused into the business schools, the management literature, specialized academic and applied practitioner journals, the business press, even corporate proxy statements by the early 1990s, representing a new shift and becoming the dominant institutional logic of corporate governance and business internal systems (Zajac & Westphal 2004).

Corporations announced the adoption of new policies, explicitly using agency theory repeatedly about aligning incentives, discouraging self-interested behavior by managers, and reducing agency costs. Indeed, some adopted new policies that embraced an agency rationale without bothering to implement them, simply jumping on the bandwagon of a socially constructed institutional logic that bestowed increased market value on symbolic declarations alone (Zajac & Westphal 2004).

Despite the fascinating case study in social movements (Davis & Thompson 1994), the diffusion of innovations, and the sociology of knowledge that these developments offer, they also had a significant impact on the intellectual agenda of the academy, spawning a massive empirical literature in management and organizational behavior. Agency theory has become a cottage industry that explores every permutation and combination of agency experience in the corporate form. Because the work is largely empirical, it by necessity relaxes some of the assumptions of classic agency theory in economics; it turns dichotomies into continuous variables, breathes life into abstract categories, and situates inquiry in at least some limited context. Still, it is closely wedded to the questions raised in economics and the settings invoked by economic models.

The most popular stream of literature focuses on incentive alignment, particularly compensation policies. Empirical studies consider the types and correlates of and trade-offs between behavior-oriented (salary) and outcome-oriented (piece rates, commissions, bonuses, equity ownership and other devices that link compensation to shareholder wealth) compensation (Eisenhardt, 1989).

Agency theory refers to business relationships that consist of a “principal” and an “agent” who are engaged in cooperative behaviour, but have differing goals and differing attitudes toward risk. The goal of the management is to make themselves rich by using the resources of the entrusted companies. The shareholders on the other hand, prefer to increase their value as much as they can. The mechanism for controlling the relationship is the contract between the principal and the agent and, depending on the situation; the contract will be behaviour-based such as internal controls system and outcome-based such compensation and rewards systems. The heart of principal-agent theory is the trade-off between the cost of measuring behaviour and the cost of

measuring outcomes while transferring risk to the agent (Plambeck & Gibson, 2010).

However, agency theory mainly addresses the “agency problem” which arises when these goals are not in alignment and when the behavior of agents cannot be assumed to be consistent with the goals of the principals. A typical solution to this is to create mechanisms through which agent behavior is forced into alignment through controls or inducements. Such mechanism is the introduction of internal controls that ward off any management irregularity and does not encourage overrides (Licker, 2007).

The former is commonly accomplished through audits and performance evaluations by the board of directors (with the threat of dismissal as the punishment for non-aligned performance). The latter provides financial rewards if corporate performance is within a desired range. Central to these mechanisms is the act of delegation from principal to executive. It is actually the act of delegation rather than specifically who is doing and receiving the delegation (owner to CEO) and the risks involved. Thus, agency theoretic ideas can be scaled downward through the management chain to any level of management. Presumably the lower the level of management, the easier the performance audit becomes (because the activities are more time limited and narrower in scope) and the more highly defined the economic inducement (generally limited to compensation) (Licker, 2007).

Practically speaking, agency theory is useful in evaluating control and motivational schemes through which principals and agents can communicate economically, given the assumptions of conflicting interests. Agency costs arise from the execution of these schemes. It is desirable to keep these costs sufficiently low; otherwise, the principals will find themselves managing their firms. In addition to direct economic inducements through bonus schemes and dividends from corporate performance (such as those provided by stock options), these agency costs appear in the costs of measuring agent effectiveness, legally enforcing these schemes, and the opportunity cost represented by the drag on agent performance by these schemes. Most schemes try for a “moderate” solution, balancing the need for scrutiny (to combat distrust) with the need for delegation (to increase performance) (Licker, 2007).

Agency theory is designed to provide critical thought to the agency problem. Agency theory predicts that to the extent that people are rational, make decisions on economic grounds and work towards maximizing their own, independent economic outcomes, agency-type relationships arise. These relationships are themselves best managed through control-type mechanisms and motivational schemes of moderate cost and complexity. Agency theory predicts that effective governance is achieved through a balance of control and economic motivation. Governance is thus contractual, explicit, impersonal, extrinsic and the result of negotiation and compromise (Donaldson and Davis, 1991).

Agency theory paints a rational, but contentious, landscape of anxious principals and potentially opportunistic and self-centered agents whose relationships are governed through strictly legalistic and, in a sense external, activities and artifacts such as contracts. Success at managing principal-agent relationships depends on the ability to reach such compromises and enforce the contracts that arise. The dynamics of business dictate that these contracts need frequent review; strong, replicable performance measures; and,

occasionally, nerves of steel. Because of this, and particularly because there are organizations in which, for example,

CEOs also act successfully as board chairs (Donaldson and Davis, 1991).

### **c. Fraud Diamond Theory**

According to (Abdullahi & Mansor, 2015) the Fraud Diamond Theory was first presented by Wolfe and Hermanson in the CPA Journal in December 2004. It is viewed as an expanded version of the Fraud Triangle Theory (FTT). In this theory, an element named capability has been added to the three initial fraud components of the Fraud Triangle Theory. It also 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 (i.e., capability) is also present. In other words, the potential perpetrator must have the skills and ability to commit fraud. Also it maintained that opportunity opens the doorway to fraud, and incentive (i.e. pressure) and rationalization lead a person toward the door. However, capability enables the person to recognize the open doorway as an opportunity and to take advantage of it by walking through repeatedly.

The Fraud Diamond is a new theory that adds a capabilities factor to the original theories. Capability is a trait of the individual committing the fraud, which drives them to seek an opportunity and exploit it. This brings in a factor other than the original environmental factors, now considering behavioral predictors. A capability has six supporting traits: positioning, intelligence, ego, coercion, deceit, and stress management. Fraudsters could have all six traits or any combination of them.

The first trait is positioning, which means that the individual is in a position not available to others, allowing them to create or exploit an opportunity. Intelligence is that the individual is creative and smart enough to understand and exploit the weakness to their advantage. Ego means the fraudster has the confidence in their abilities to not be caught. Next is coercion, where the individual can influence others to assist or conceal the fraud that is occurring. (Shelton, 2014).

Then deceit, the fraudster probably will be able to lie or divert convincingly. Lastly there is stress management, committing and the ongoing concealing of the fraud will cause continuous stress and, therefore, the fraudster can appropriately manage the stress there has not been an extensive amount of research done on the aspects of the capabilities of the fraud diamond. Since the capabilities trait came to light, most people have just bypassed it and stuck with the original fraud triangle. What these people are misunderstanding is that capabilities go into depth of what it takes mentally to commit fraud. With these understanding owners, managers, and any other employee can better understand fraudsters and their traits. With this knowledge everyone could help prevent fraud from occurring in their places of work (Shelton, 2014).

Also, there are more ways of committing asset misappropriation fraud than the other two forms; therefore there is a greater variety of traits that will arise from the different cases. The purpose of the statistical test is to determine if there is a significant difference in the proportions of cases possessing each of between the six traits of capabilities. If there is a difference, then employers and managers have criteria that they can look for when evaluating current and prospective employees. With this they can focus on the main contributing factors and even implement psychological testing to identify these areas among potential

employees, to further prevent fraud occurrences in their organization. (Shelton, 2014).

According to (Rudewicz, 2011) the behavioral scientists have yet been able to identify a psychological characteristic that serves as a valid and reliable marker of the propensity of an individual to commit fraudulent activities. Nevertheless, research has shown that individuals with certain characteristics and personality traits will increase the likelihood for fraud to occur. Explained "The Fraud Diamond: Considering the Four Elements of Fraud," there are fourth element, capability, into the fraud triangle; thus, transforming the well-known fraud triangle, into the fraud diamond. The study states that an individual's personality traits and capability have a direct impact on the probability of fraud. As stated: "Opportunity opens the doorway to fraud, and incentive [i.e. pressure] and rationalization can draw a person toward it. But the Person must have the capability to recognize the open doorway as an opportunity and to take advantage of it by walking through, not just once, but time and time gain.

The common personality types include someone who is driven to succeed at all costs, self-absorbed, self-confident, and often narcissistic (Rudewicz, 2011). For example, consider a company where the internal controls allow the possibility that revenues could be recorded prematurely by altering sales contract dates in the sales system. An opportunity for fraud exists, if the right person is in place to understand and exploit it. This opportunity for fraud becomes a much more serious problem if the company's CEO, who is under intense pressure to increase sales, has the technical skills to understand that the control weakness exists, can coerce the CFO and sales manager to manipulate the sales contract dates, and can consistently lie to analysts and board members about the company's growth in the absence of such a CEO. The fraud possibility would never become reality, despite the presence of the elements of the fraud triangle. Thus, the CEO's capabilities are a major factor in determining whether this control weakness will ultimately lead to fraud (Wolfe & Hermanson, 2004).

### **d. Fraud Triangle Theory**

According to the study of (Abdullahi & Mansor, 2015) In 1950, Donald Cressey, a criminologist, started the study of fraud by arguing that there must be a reason behind everything people do. Questions such as why people commit fraud led him to focus his research on what drives people to violate trust? He interviewed 250 criminals in a period of 5 months whose behavior met two criteria: (i) initially, people are accepting responsibilities of trust in good faith, and (ii) circumstances make them violate the trust. He relates that three factors (pressure, opportunity, and rationalization) must be present for an offense to take place. Cressey further states the following: "Trust violators, when they conceive of themselves as having a financial problem that is non-shareable and have knowledge or awareness that this problem can be secretly resolved by a violation of the position of financial trust. Also they are able to apply to their own conduct in that situation verbalizations which enable them to adjust their conceptions of themselves as trusted persons with their conceptions of themselves as users of the entrusted funds or property".

According to (Kassem & Higson, 2012) the current paper aims at broadening external auditors' knowledge about fraud and why it occurs. It explains Cressey's fraud triangle theory and shows its significance, presents the other fraud models and relates it to Cressey's model, and proposes a new fraud

triangle model that external auditors should consider when assessing the risk of fraud.

A thorough literature review was undertaken to achieve the paper's aim. The secondary data used in this paper was obtained from different databases like Ebscohost. Reviewing the literature showed that researchers classified the motive side of the fraud triangle differently. Some researchers classified them as personal, employment, or external pressure, while others classified them as financial and non-financial pressures. However, it can be noticed that both classifications are some-how related. For instance, personal pressure can come from both financial and non-financial pressure.

A personal financial pressure in this case could be gambling addiction or a sudden financial need, while a personal non-financial pressure can be lack of personal discipline or greed. By the same token, employment pressure and external pressure can come from either financial or non-financial pressure. Thus, external auditors have to keep in mind that pressure/motive to commit fraud can be either a personal pressure, employment pressure, or external pressure, and each of these types of pressures can also happen because of a financial pressure or a non financial pressure. They also need to understand the opportunity for fraud to help them in identifying which fraud schemes an individual can commit and how fraud risks occur when there is an ineffective or missing internal control. Although Cressey's fraud triangle theory was supported and used by audit regulators (ASB and IAASB), critics argued that the theory alone is an inadequate tool for deterring, preventing, and detecting fraud. This is because two sides of the fraud triangle (pressure and rationalization) cannot be observed, and some important factors, like fraudsters' capabilities are ignored (Kassem & Higson, 2012).

Thus, some researchers suggested the rationalization side should be replaced by personal integrity because it can be more observable, others suggested the motive side needs to be expanded to include non-financial factors like ego and coercion, while others suggested a fourth side to be added to the fraud triangle which is "fraudster's personal capabilities". The current paper believes it is important for external auditors to consider all the fraud models to better understand why fraud occurs. The paper also suggests that all other fraud models should be regarded as an extension to Cressey's fraud triangle model and should be integrated in one theory that includes motivation, opportunity, integrity, and fraudster's capabilities. This model should be called "the New Fraud Triangle Theory". Hence, with the new fraud triangle Theory, external auditors will consider all the necessary factors contributing to the occurrence of fraud. This should help them in effective assessing fraud risk (Kassem & Higson, 2012).

According to (Sang, 2012) the classical theory of fraud triangle is conceptualized by Donald Cressey. This theory is made of a triangle of different fraud aspects that include perceived opportunities, perceived pressures and rationalizations the theory argues that the term perceived is important in the context that the pressures, rationalizations, and opportunities may not necessary be real. Both the financial and non-financial pressures present the first temptation to commit frauds. Among the perceived pressures that may lead to fraud include financial pressures such as debts, vices such as drug abuse and work related pressures such to show good sales obtain monetary gains or property, to avoid payment of services rendered or loss of services and to secure personal or business. advantage. The frauds are

preventable in an organization through effective utilization of internal control mechanisms.

In the today's complex and competitive business environment, in order to objectively assess the current activities of the company and its prospects, it is very important to have as much as possible detailed information about the company's financial condition, results of operation, and cash flows. But frauds distort this information; as a result, wrong management decisions can be taken. Therefore, it is important to analyse not only the reasons, motives, opportunities, However, in terms of the fraud triangle evolution or transformation, it should be noted that even though auditors cannot evaluate each individual's personal value system enterprise-wide, they can assess the overall company's culture; therefore, in 1995, the fraud triangle was much improved and divided into two parts in order to make it easier to distinguish between the elements of an employee and of the company (Mackevičius & Giriūnas, 2013).

According to (Mackevičius & Giriūnas, 2013), such cross-section of the fraud triangle will allow to assess whether there exists a direct correlation between the ability to commit a fraud and the company's ability to cover it up. However, it should be noted that such representation of the fraud triangle, even though it played a role in its perception, it still has not been widely applied in practice or research. Later, the fraud square took a slightly different shade and is still widely considered by practitioners and researchers. The first authors, Bressler & Bressler (2007), proposed the idea of the fraud square by claiming that the triangle is not sufficiently detailed because it lacks a crucial element – capabilities: not every person who has the motivation, opportunities, and realization may decide to commit fraud due to the lack of the capability to carry it out or to conceal it.

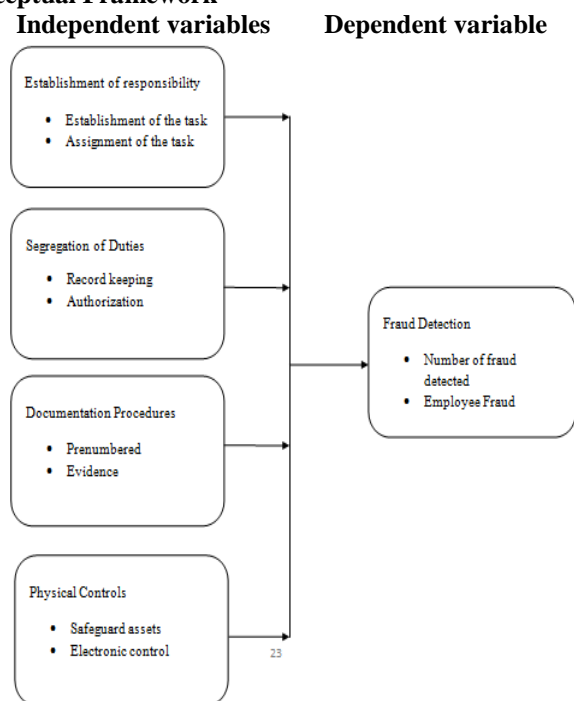
This element is particularly important when it concerns a large-scale or long-term fraud. Furthermore, the authors believe that only the person who has an extremely high capacity will be smart enough to understand the existing internal control, to identify its weaknesses and to use them in planning the implementation of fraud. However, it should be noted that the fraud square has a few drawbacks, namely it does not reflect the conditions under which it is the easiest to commit fraud and persons' abilities to commit a fraud, it does not reveal when there is the greatest risk of fraud, it does not take into account the role of the internal control system in assessing and detecting fraud and, therefore, it is appropriate to correct this deficiency by creating fraud scales. Therefore, we propose an improved version of the fraud square – the fraud scales (Mackevičius & Giriūnas, 2013).

#### **Establishment of responsibilities**

The establishment of responsibilities item in the control activities components is the first for every internal control procedures to follow. When the organizing part of the management is taking place, it is natural to assign jobs and tasks to individual. This is all the same, establishing the individual responsibility for the particular task to be carried out which is just a part of the whole job (Eke, 2010). This is done because when problem happens in the job, there must only one person to answer for it. It is simple truth that when no one is available to answer for business task related mishaps then company assets may be wasted in the process. This of course can be detrimental to the organization and is against all the good objectives the business was established for in the first place.



### Conceptual Framework



**Figure 2.1. conceptual framework.**

There are two important elements within this item called establishment of responsibility (Eke, 2010; Weygandt et al., 2010). These two are the clear establishment of the task the individual is required to be responsible for and its assignment to the particular employee required to carry out the task. The design or establishment of the job is a priority in any organization that has employees more than one individual. The establishment of the task gives the employee the freedom to choose between alternative ways of doing things and also carries with it the responsibility for the outcome (Bowen & Lawler, 1995).

The assignment of the job to particular individual or group is usually a key issue in essentially any business organization (Guillaume, Houe & Grabot, 2014). Jobs are normally assigned based on the competence level of the employees so that the exact procedure for the doing the job is followed. Job assignment also contributes to the overall managerial objective which is to attain company goals with the minimum associated risks (Greiger et al., 2004).

The assignees are of course trained for that particular position and are required to observe the rules and regulations the work demands on a daily basis. The assigned jobs can be routine jobs or distributed on a need basis.

### Segregation of Duties

Segregation of duties is a fundamental security principle applied in any business environment to prevent and account for frauds and embezzlement (Simon & Zurko, 1997). The element segregation of duties refers to a situation wherein the duties to be performed on behalf of the business organization are set apart so that one person cannot start a procedure and continue to the end of the same procedure. Such duties may include, authorization, approval, recording, issuing assets, receiving assets, and making payment (Little & Best, 2003). In effect, one person initiates a process and hands over the remainder of the same process to another officer. This is normally done to prevent two bad outcomes from regular business exercises; errors and fraud (Othman, Ishak, Arrifin, Ismail & Razali, 2014). Practically speaking, segregation of

duties can be sub divided into three sub items, authorisation, custody and recording (Kobelsky, 2014).

Authorisation is taking the approval part of the process. Unless, the supervisor authorizes the transaction could never proceed. Custody is taking hold of the assets or the books of record, this part of the process is either the physical representation if it is an asset or the accounting representation if it is a record. Recording is the act of putting in the information about the transaction or the asset in question. When these activities are separated, then a separation of duties is in play (Simon & Zurko, 1997).

### Documentation Procedures

Documents are considered the evidence for the occurrence of transactions at the most basic level (Weygandt et al., 2010). This evidence is important when an investigation is required to ascertain whether in reality such transfer of company assets had occurred. The time for this document to exist in company files is indefinite in practical terms. In order for the documentation to be complete, a responsible person must put a signature on the same (Weygandt, et al., 2010).

Documents are also given serial number to prevent two mistakes. One mistake is recording the same transaction two times and the other mistake is not recording at all (Weygandt et al., 2010). The documents are useful as a source documents for the record keeping and accounting procedures. Therefore, it is a must that the documents be forwarded to the accounting department for immediate transaction recording and processing.

Poor documentation is one of the many reasons that can facilitate the occurrence and perpetuation of fraud and embezzlement in business organisations (Rae & Subramaniam, 2008). This can happen simply because the evidence that could support internal controls for the prevention of any form of blunder within the organization may be deficient. Both types of errors, intentional and unintentional can also be traced back to their initiators and proper actions taken thereof. Therefore, documentation procedures are the most important in terms of internal controls being as effective as management envisioned.

### Physical Controls

Part of internal control components is control activities which has an element of physical controls over assets. As the term clearly shows, physical control is the prevention of assets waste through sabotage, plunder, larceny, arson and any other form of destruction and misappropriation (Weygandt, et al., 2010). These procedures are carried out in both simple and complex ways. Physical controls effective in one organization might not be in another business.

In the same line, physical controls for banks cannot be the same as physical controls for brick factories. Therefore, physical controls might vary from one organization to another as well as from one business unit from next.

### Fraud Detection

Fraud and the related forgeries are considered to be the main worry that bankers deal with in their day to day activities (Oloidi & Ajinaja, 2014). This happens because banks mainly deal with financial assets and ready cash which is considered the most liquid of all assets making it all the more susceptible to theft and embezzlement more than anything else (Weygandt, Kimel & Kieso, 2010). For this simple reason banks frequently develop fraud monitoring and detection systems to either prevent an imminent threat of fraud or detect an ongoing fraud almost immediately before its too late (Boton & Hand, 2002).



Although systems are developed to prevent fraud at every level, and security measures are improved to the maximum, fraud is still being perpetrated no matter which guards are used against its occurrences (Bolton & Hand, 2002; Wells, 2004). The situation is more hazardous for small business banks that emerged in the developing countries. The case is even more so in the Somalia context, a country that repeatedly topped the list of the most corrupt nations in the world. The types of frauds that are relevant in banking situations require investigation and insight to explain their effect on banks and their systems.

For this reason frauds continue to plague banks in every corner of the world. Just any person can perpetrate this crime. The manager can commit financial statement fraud, employees can frequently engage in occupational fraud and finally customers can do damage through fraud. Therefore any type of fraud can hit any type of business with banks being the major victim in global terms (Olidi & Ajinaja, 2014). There is a literature conducted in the area of internal controls and fraud detection to help understand how the two variables affect each other.

### 3. Methodology

The study used descriptive design due to its appropriateness to collect first hand data from the respondents and measure the variables. This is sought to help find out the effect of internal control systems on fraud detection in Somali commercial banks. It is a method of research is used to gather information about the present existing condition where the researcher interacts freely with the respondents without undue influence (Creswell, 2013). These respondents will be selected from among the research population as spelled out in the research design.

The population of this study specifically refers to all the staffs at each of the headquarters of the 5 commercial banks in Somalia. The target population in this research consists of all the CEOs, Operation Managers, Finance Managers, Internal Controls, Internal Auditors, Accountants, Treasurers and Cashiers and tellers of the commercial banks in Somalia. The total population of targeted was 240 people located at the headquarters of the commercial banks. These groups will be targeted because of the hand on experience of the matters related to internal controls and fraud detection in those institutions.

### 4. Findings

#### Effect of Establishment of responsibilities on fraud detection in Commercial Banks in Somalia

The first objective of the study was to determine the effect of establishment of responsibility on fraud detection of Commercial Banks in Somalia. Table 4.7 shows that 68% agree there is a formal plan in which responsibilities for the year-end closing. And 68% agreed that there is financial statements are clearly defined including target dates for completing tasks. And 67% agree there is a formal organizational chart defining responsibilities for processing and recording cash transactions. And 69% agree that There is a formal organizational chart defining responsibilities for preparing bills, recording payments, collecting amounts due and following up on unpaid accounts. And 66% agree that there is a formal organizational chart defining the responsibilities for Preparing, recording, approving and following up on all purchases and accounts payable functions. And 67% agree that there is a formal organizational chart defining the responsibilities of ordering, accepting, approving, processing and recording of the inventory. And 68% agree that there is a formal organizational chart defining the responsibilities of purchasing, receiving, recording, approving and performing the inventory.

The mean index for responses for this section was 2.77 which indicates that majority of the respondents agreed that establishment of responsibility was major factor influence fraud detection of Commercial Banks in Somalia. The findings of (Eke, 2010) agree test reveals that there is significant relationship between effective establishment of responsibility and the fraud detection of Commercial Banks in Somalia.

#### Effect of Segregation of Duties on fraud detection in Commercial Banks in Somalia.

The second objective of the study was to determine the effect of segregation of duties on fraud detection of Commercial Banks in Somalia. Table 4.8 shows that 69% agree completing the disbursement receipts, disbursement, segregated from reconciliation making a deposit, billing, making general ledger entries segregated from collecting. And 67% agreed that Reconciling Cash registers daily by a person not involved in cash receipting. And 68% agree Responsibilities for preparing and approving bank account reconciliations and investigation of unusual reconciling items segregated from those for other cash receipts or disbursement functions.

**Table 4.7. Establishment of responsibilities and Fraud Detection.**

		1 100%	2	3	4	M.	Std
1	There is a formal plan in which responsibilities for the year-end closing	5	19	68	8	2.78	0.668
2	There is a financial statements are clearly defined including target dates for completing tasks	5	19	68	8	2.8	0.668
3	There is a formal organizational chart defining responsibilities for processing and recording cash transactions.	4	20	67	9	2.78	0.670
4	There is a formal organizational chart defining responsibilities for preparing bills, recording payments, collecting amounts due and following up on unpaid accounts.	5	18	69	8	2.8	0.660
5	There is a formal organizational chart defining the responsibilities for Preparing, recording, approving and following up on all purchases and accounts payable functions.	5	19	66	10	2.79	0.668
6	There is a formal organizational chart defining the responsibilities of ordering, accepting, approving, processing and recording of the inventory.	4	20	67	9	2.80	0.670
7	There is a formal organizational chart defining the responsibilities of purchasing, receiving, recording, approving and performing the inventory.	5	19	68	8	2.70	0.660
	Mean index					2.77	

And 67% agree that investigating disputes with billing amounts segregated from maintenance of accounts receivables records. And 69% agree that Reconciling, investigating reconciling items segregated from posting detail accounts receivable records. And 68% agree that Custodian of the capital assets segregated from tagging. And 68% agree that Record-keeping functions for securities and income separate from those having access to physical securities, those authorizing security transactions, and those having duties in the cash area.

The mean index for responses for this section was 2.79 which indicates that majority of the respondents agreed that segregation of duties was major factor influence fraud detection of Commercial Banks in Somalia. The findings of (Kobelsky, 2014) agree test reveals that there is significant relationship between effective segregation of duties and the fraud detection of Commercial Banks in Somalia.

#### **Effect of Documentation Process on fraud detection in Commercial Banks in Somalia**

The third objective of the study was to determine the effect of documentation process on fraud detection of Commercial Banks in Somalia. Table 4.9 shows that 68% agree supporting documentation attached to journal entries and secured in a safe location. And 67% agreed that Deposit slips have an official depository bank number preprinted on the document. And 69% agree Manual receipts used and accounted for and balanced to the deposits. And 66% agree that Pre-numbered receipts issued for all cash collections and are numbers of all receipts accounted for. And 67% agree that Logs of receipt book issuances maintained and reconciled. And 69% agree that Unused portions of receipt books required to be returned to the issuance location. And 66% agree that there are controls to ensure each cash disbursement is properly voucher and approved by the proper authorities before the disbursement occurs.

The mean index for responses for this section was 2.76 which indicates that majority of the respondents agreed that

documentation process was major factor influence fraud detection of Commercial Banks in Somalia. The findings of (Rae & Subramaniam, 2008) agree test reveals that there is significant relationship between effective documentation process and the fraud detection of Commercial Banks in Somalia.

#### **Effect of Physical Controls on fraud detection in Commercial Banks in Somalia**

The fourth objective of the study was to determine the effect of physical controls on fraud detection of Commercial Banks in Somalia. Table 4.10 shows that 70% agree Access to the accounts receivable accounting system limited only to authorized individuals. And 65% agreed that Signature plates only under the signer's control and that person or appropriate designee record machine readings to ascertain that all checks signed are properly accounted for. And 66% agree Physical access to supplies restricted to authorized personnel. And 68% agree that Capital assets tagged when procured. And 69% agree that someone assigned custodial responsibility by location for all assets. And 67% agree that Access to the perpetual capital asset records limited to authorized individuals. And 64% agree that there is adequate physical security surrounding the capital asset items.

The mean index for responses for this section was 2.80 which indicates that majority of the respondents agreed that physical controls was major factor influence fraud detection of Commercial Banks in Somalia. The findings of (Weygandt, et al., 2010) agree test reveals that there is significant relationship between effective physical controls and the fraud detection of Commercial Banks in Somalia.

#### **Inferential Statistics**

Having described the study variables using descriptive statistics, the study sought to establish the effect of establishment of responsibility, segregation duties, documentation process and physical controls on the fraud detection of Commercial banks.

**Table 4.8. Segregation of Duties and Fraud Detection.**

		1 100%	2	3	4	M.	Std
1	Completing the disbursement receipts, disbursement, segregated from reconciliation making a deposit, billing, making general ledger entries segregated from collecting.	5	18	69	8	2.70	0.600
2	Reconciling Cash registers daily by a person not involved in cash receipting.	4	19	67	10	2.78	0.65
3	Responsibilities for preparing and approving bank account reconciliations and investigation of unusual reconciling items segregated from those for other cash receipts or disbursement functions.	5	18	68	9	2.80	0.680
4	Investigating disputes with billing amounts segregated from maintenance of accounts receivables records.	4	19	67	10	2.85	0.67
5	Reconciling, investigating reconciling items segregated from posting detail accounts receivable records	5	18	69	8	2.79	0.668
6	Custodian of the capital assets segregated from tagging.	5	19	68	8	2.78	0.67
7	Record-keeping functions for securities and income separate from those having access to physical securities, those authorizing security transactions, and those having duties in the cash area.	5	19	68	8	2.80	0.668
	Mean index					2.79	

**Table 4.9. Physical Controls and Fraud Detection.**

		1 100%	2	3	4	M.	STD
1	Access to the accounts receivable accounting system limited only to authorized individuals.	4	16	70	10	2.78	0.668
2	Signature plates only under the signer's control and that person or appropriate designee record machine readings to ascertain that all checks signed are properly accounted for.	6	15	65	14	2.80	0.670
3	Physical access to supplies restricted to authorized personnel.	5	17	66	12	2.70	0.668
4	Capital assets tagged when procured.	7	15	68	10	2.79	0.670
5	Someone assigned custodial responsibility by location for all assets	5	18	69	8	2.78	0.670
6	Access to the perpetual capital asset records limited to authorized individuals.	3	14	67	16	2.8	0.668
7	There is adequate physical security surrounding the capital asset items.	5	16	64	15	2.78	0.668
	Mean Index					2.80	

Table 4.10. Fraud Detection.

		1 100%	2	3	4	M.	STD
1	Assessment and prosecution of fraud cases	3	17	70	10	2.70	0.668
2	Establishment of fraud policy	4	16	68	8	2.72	0.668
3	Use analytical tools to detect and prevent fraud	6	14	66	14	2.75	0.670
4	Undertaking expected and unexpected audit	5	15	70	10	2.77	0.669
5	Implementation employee fraud schemes i.e. schemes that track fraudulent employee across organization	5	16	69	10	2.78	0.670
6	Establishment fraud reporting centre and hotlines	7	13	65	15	2.79	0.668
7	Use of ICT protection tools such as passwords and firewalls	8	12	75	5	2.78	0.668
	Mean Index					2.75	

The study sought to establish the bivariate nature of both dependent and independent variables.

To evaluate the strength of the relationship, a bivariate correlation analysis was used. Linear multiple regression analysis was further used to establish the nature of the relationship. The 5% level of significance was taken as the p-value was less than 0.05. Fraud detection of commercial banks in Somalia (y) was calculated as an aggregate of all the parameters measuring performance in the research instrument.

#### Bi-variate Linear Relationship between Study Variables

Before running the regression analysis, the researcher run the correlation matrix in order to check whether there was association between variables and also checked whether there was multicollinearity within the variable. Pearson product moment correlation coefficient (r) was used to aid in establishing correlation between the study variables of interest. Correlation coefficient shows the magnitude and direction of the relationship between the study variables.

The correlation coefficient varies over a range of +1 through 0 to -1. When r is positive, the regression line has a positive slope and when r is negative, the regression line has a negative slope. Table 4.12 shows bivariate linear relationship between the study variables.

The findings of the correlation analysis indicated that there is a significant strong positive correlation between Establishment of responsibility and fraud detection of Commercial Banks in Somalia ( $r=0.982$ ,  $p\text{-value}=0.000$ ). Therefore, an increase of establishment of responsibility led to an increase in fraud detection of Commercial Banks in Somalia. Regarding of Segregation of duties, the correlation coefficient was also positive ( $r = 0.987$ ,  $p\text{-value} = 0.000$ ). This means that an increase in segregation of duties in Commercial Banks in Somalia led to an increase in the fraud detection of Commercial Banks in Somalia.

Results of the study also showed that there is a significant positive correlation between documentation process and fraud detection of Commercial Banks in Somalia ( $r=0.983$ ,  $p\text{-value} = 0.000$ ) implying that an increase in use of documentation process improved the rate of fraud detection of the Commercial Banks in Somalia. Also regarding of physical controls, the correlation coefficient was also positive ( $r = 0.974$ ,  $p\text{-value} = 0.000$ ). This means that an increase in physical controls in Commercial Banks led to an increase in the fraud detection of Commercial Banks in Somalia. This means that the variables could be selected for statistical analysis like regression analysis. It is important to note that audit independence improved fraud detection of Commercial Banks but not to the extent of establishment responsibility, segregation of duties, documentation process and physical controls.

#### Standard Multiple Regression Analysis

In order to answer the research questions, a standard multiple regression analysis was conducted using fraud detection as the dependent variable, and the four investigations determine effect of internal control system of the organizational: establishment of responsibilities, segregation of duties, documentation process and physical controls as the predicting variables. Tables 4.12, 4.13 and 4.14 present the regression results. From the model summary in table 4.12, it is clear that the adjusted  $R^2$  was 0.944 indicating that a combination of establishment of responsibilities, segregation of duties, documentation process and physical controls explained 94.4% of the variation in the fraud detection of the Commercial Banks in Somalia.

Table 4.11. Bi-variate linear relationship between study variables.

		Estabkishmentresposnsibilty	Segregationduties	Documentationprocess	Physicalcontrols	Frauddetection
Estabkishmentresposnsibilty	Pearson Correlation	1				
Segregationduties	Pearson Correlation	0.993**	1			
	Sig. (2-tailed)	.000				
	N	70	70			
Documentationprocess	Pearson Correlation	0.979**	0.988**	1		
	Sig. (2-tailed)	.000	.000			
	N	70	70	70		
Physicalcontrols	Pearson Correlation	0.985**	0.993**	0.987**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	70	70	70	70	
Frauddetection	Pearson Correlation	0.982**	0.987**	0.983**	0.974**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	70	70	70	70	70

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

**Table 4.12 Model Summary.**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.973 <sup>a</sup>	.947	.944	.16240

A. Predictors: (constant), physical control, documentation process, establishing responsibility, segregation duties  
 From the ANOVA table 4.12, it is clear that the overall standard multiple regression model (the model involving constant, establishment of responsibilities, segregation of duties, documentation process and physical controls) is significant in predicting how establishment of responsibilities, segregation of duties, documentation process and physical controls determine fraud detection of the Commercial Banks in Somalia. The regression model achieves a high degree of fit as reflected by an R<sup>2</sup> of 0.947 (F = 306.288; P = 0.000 < 0.05).

**Table 4.13 Analysis of Variance.**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	32.306	4	8.076	306.228	.000 <sup>b</sup>
Residual	1.820	65	.026		
Total	34.126	69			

a. Dependent Variable: fraud detection

b. predictors: (constant), physical control, documentation process, establishing responsibility, segregation duties

### 5. Regression Coefficients

Table 4.14 presents the regression results on how establishment of responsibilities, segregation of duties, documentation process and physical controls determine fraud detection of the Commercial Banks in Somalia. The multiple regression equation was that:  $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$  and the multiple regression equation became:  $Y = 0.083 + 0.035X_1 + 0.366X_2 + 0.142X_3 + 1.171X_4$ . As depicted in table 4.13, there was positive and significant effects of establishment of responsibility on fraud detection ( $\beta = 0.035$ ;  $t = 0.205$ ;  $p < 0.05$ ). There was positive and significant effects of segregation of duties on fraud detection ( $\beta = 0.362$ ;  $t = 1.435$ ;  $p < 0.05$ ).

There was positive and significant effects of documentation process on fraud detection ( $\beta = 0.140$ ;  $t = 0.613$ ;  $p < 0.05$ ). There was positive and significant effects of physical controls on fraud detection ( $\beta = 1.158$ ;  $t = 5.924$ ;  $p < 0.05$ ).

### Interpretation of the Findings

From the findings of the regression analysis, the study found that there was a variation of 94.4% indicating that a combination of establishment of responsibilities, segregation of duties, documentation process and physical controls explained 94.4% of the variation in the fraud detection of the Commercial Banks in Somalia.

This is an indication that 94.4% changes in fraud detection of the Commercial Banks in Somalia could be accounted for by combination of establishment of responsibilities, segregation of duties, documentation process and physical controls while the remaining percentage is explained by other factors contained in error terms. The study further revealed that there was positive strong relationship

between combination of establishment of responsibilities, segregation of duties, documentation process and physical controls and fraud detection of change as shown by strong positive correlation coefficient. From the finding on analysis of variance, the study found that the overall model had a significance value of 0.05% which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value) is less than 5%. The study further revealed that combination of establishment of responsibilities, segregation of duties, documentation process and physical controls significantly affects the fraud detection in Commercial banks in Somalia. The established regression equation was  $Y = 0.083 + 0.035X_1 + 0.366X_2 + 0.142X_3 + 1.171X_4$ .

### 6. Conclusions

Based on the findings of this study, the following conclusions were drawn. The results reveal that establishment of responsibilities, segregation of duties, documentation process and physical controls have significant and positive effects on fraud detection. Stepwise regressions revealed that internal controls system is determinants of fraud detection including establishment of responsibilities, segregation of duties, documentation process and physical controls explained statistically significant portion of the variance associated with the extent of fraud detection of the Commercial Banks in Somalia.

### 7. Recommendations

The study recommends the adoption of the internal control system in order to improve fraud detection of Commercial Banks in Somalia. The internal control system was recommended as a useful design for practicing Commercial Banks with respect to the implementation of best practice. The study results support the view that internal control system drivers have a significant effect on fraud detection. However, the influence of each driver varies from one Bank to another. It is recommended that managers should study and select the driver that best suits their Commercial Banks in order to achieve maximum performance.

1. It was found that management policies influenced establishment responsibilities. It is recommended to the Commercial Bank's management to ensure that the Banks have put in place policies and procedures to be adhered to during financial activities. The banks management is also urged to ensure that there are standardized and written manuals with the policies regarding establishment responsibility and its management. From the findings and conclusion, the study further recommends that there is need for Commercial Banks in Somalia to increase establishment responsibility so as to increase their establishment responsibilities as it was found that an increase in establishment responsibility positively affect the fraud detection.

**Table 4.14. Regression Coefficients.**

Model	Un standardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	.083	.081		1.034	.003
Establishing responsibility	.035	.169	.035	.205	.008
Segregation duties	.366	.255	.362	1.435	.001
Documentation process	.142	.231	.140	.613	.005
Physical control	1.171	.198	1.158	5.924	.000

a. Dependent Variable: fraud detection

2. There is need for the Commercial Banks in Somalia to increase their segregation of duties as it was founded that segregation of duties positively affects the fraud detection of Commercial Banks in Somalia.

3. There is need for the documentation process that will be applied across all the fraud detection of Commercial Banks. This will go way further towards increased documentation process in the sector and contributes towards better fraud detection in the sector.

### 8. Areas For Further Research

The study sought to establish the effect of internal control system on the fraud detection of Commercial Banks in Somalia, the study recommends a further study to be done on the effects of internal control system on the financial performance of Commercial Banks in Somalia.

### 9. References

- Abdullahi, R. U., & Mansor, N. (2015). Fraud Triangle Theory and Fraud Diamond Theory. Understanding the Convergent and Divergent For Future Research. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 5(4), 38-45.
- Abtidon, A. H. (2015). The Impact of Financial Accountability on Reducing Corruption in Mogadishu Somalia. *Academic Research International*, 6(2), 128.
- Aden, A. H., Aden, A. A., & Addow, A. I. (2015). Internal Control and Cash Management in Mogadishu Flight Service Companies in Somalia. *Academic Research International*, 6(2), 232
- Adeoye, M., & Adeoye, E. (2014) Drift of risk assessment on Prevention of Fraud in Banks and Financial Institutions in Nigeria. *Computing information systems, development informatics & Allied Research Journal* 5(2).
- Ahmed Salat Ahmed (Haraf). (2011). Employee Cash Theft and its Motivation in Somalia: Empirical study in Somali Private sector. *Somali Business Review*, 4(12), 15-16.
- Akindele, R. I. (2011). Fraud as a negative catalyst in the Nigerian banking industry. *Journal of Emerging Trends in Economics and Management Sciences*, 2(5), 357-383.
- Albrecht, C., & Albrecht, U. (2004). Strategic Fraud Detection: A Technology-Based Model. *Rollins Center for eBusiness*, 4(1), 14-17
- Agbejule, A., & Jokipii, A. (2009). Strategy, control activities, monitoring and effectiveness. *Managerial Auditing Journal*, 24(6), 500-522.
- Arwinge, O. (2012). *Internal control: A study of concept and themes*. Springer Science & Business Media.
- Baker, T. L. (1994). *Doing Social Research (2nd Ed.)*. New York: McGraw-Hill.
- Bakre, O. M. (2008). Looting by the ruling elite, multinational corporations and the accountants: the genesis of indebtedness, poverty and underdevelopment in Nigeria. *Olusanya, JO & Lauwo, S. Corruption and Social-Political Economic Culture: A Case of Nigeria, op. cit.*
- Bolton, R. J., & Hand, D. J. (2002). Statistical fraud detection: A review. *Statistical science*, 235-249.
- Bowen, D. E., & Lawler, E. E. (1995). Empowering service employees. *Sloan management review*, 36(4), 73.
- Bryman, A., & Cramer, D. (1997). Quantitative data analysis with SPSS for Windows. London: Routledge.
- Central Bank of Somali (2016) *Licensed Banks*. Accessed February 3, 2016 <http://centralbank.gov.so/banks.html>
- Comer, M. J. (1998). *Corporate fraud*. (3<sup>rd</sup> ed.). Gower Publishing, Ltd.
- Cooper, D. R & Schindler, P.S (2013). *Business research methods, (12th ed.)*. Irwin; Mc Graw-Hill
- Cohen, L., Manion, L., & Morrison, K. (2013). Research methods in education. Routledge.
- Coram, P., Ferguson, C., & Moroney, R. (2006). The value of internal audit in fraud detection. *Department of Accounting and Business Information Systems, Melbourne*, 3010.
- Creswell, J.W (2013). *Research design: Qualitative, quantitative and mixed methods. (4<sup>th</sup> ed.)*. Thousand Oaks, Calif: Sage Publications
- Davis, J., F. Schoorman and L. Donaldson (1997). Toward a Stewardship Theory of Management. *Academy of Management Review* 22, ( 1). 20-47
- Davis GF, Thompson TA. (1994). A social movement perspective on corporate control. *Administrative Science Quarterly* 39 141-73
- Donelson, D. C., Ege, M., & McInnis, J. M. (2015). Internal control weaknesses and financial reporting fraud. *Social Science Research Network* 2449287.
- Donaldson, L., & Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. *Australian Journal of management*, 16(1), 49-64.
- Dorminey, J., Fleming, A. S., Kranacher, M. J., & Riley Jr, R. A. (2012). The evolution of fraud theory. *Issues in Accounting Education*, 27(2), 555-579.
- Eisenhardt, K. (1989). Agency theory: An assessment and review. *Academy of Management Review* 14(1): 57-74.
- Eke, K., (2010) *Introduction to the Principles of Internal Control*, Article Base (2010). Retrieved February, 2016 from <http://www.articlesbase.com/accounting-articles/introduction-to-the-principles-of-internal-control-3408276.html>
- Elangkovan, K., & Said, M. M. (2013) *Nurturing Human Leaders: Analysis From Past Business Fraud*. Retrieved May, 2013 from <http://www.researchgate.net/publication/261080282>
- Field, A. (2006). Reliability analysis. *Research Methods II*, 1-7.
- Firozabadi, B. S., Tan, Y. H., & Lee, R. M. (1999). Formal definitions of fraud. *Norms, Logics and Information Systems-New Studies in Deontic Logic and Computer Science, IOS Press, Amsterdam, The Netherlands*, 275-288.
- Gbegi, D. O., & Adebisi, J. F. (2015). Analysis of Fraud Detection and Prevention Strategies in the Nigerian Public Sector. *Journal of Good Governance and Sustainable Development in Africa (JGGSDA)*, 2(4).
- Geiger, M. A., Cooper, S. M., & Boyle, E. J. (2004). Internal control components: did COSO get it right?. *The CPA Journal*, 28.
- Guillaume, R., Houé, R., & Grabot, B. (2014). Robust competence assessment for job assignment. *European Journal of Operational Research*, 238(2), 630-644.
- Hanim Fadzil, F., Haron, H., & Jantan, M. (2005). Internal auditing practices and internal control system. *Managerial Auditing Journal*, 20(8), 844-866.
- Holtfreter, K. (2005). Fraud in US organisations: an examination of control mechanisms. *Journal of Financial Crime*, 12(1), 88-95.
- Idolor, E. J. (2010). Bank Fraud in Nigeria: Underlying Causes, Effects and Possible Remedies. *African Journal of Accounting, Economics, Finance and Banking Research*, 6(6), 62.
- Kassem, R., & Higson, A. (2012). The new fraud triangle model. *Journal of Emerging Trends in Economics and Management Sciences*, 3(3), 191.

- Kinyua, J. K., Gakure, R., Gekara, M., & Orwa, G. (2015). Effect of Internal Control Environment on the Financial Performance of Companies Quoted in the Nairobi Securities Exchange. *International Journal of Innovative Finance and Economics Research* 3(4), 29-48.
- Kobelsky, K. W. (2014). A conceptual model for segregation of duties: Integrating theory and practice for manual and IT-supported processes. *International Journal of Accounting Information Systems*, 15(4), 304-322.
- Krambia-Kapardis, M. (2002). A fraud detection model: A must for auditors. *Journal of Financial Regulation and Compliance*, 10(3), 266-278.
- Kramer, B. (2015). Trust, but verify: fraud in small businesses. *Journal of Small Business and Enterprise Development*, 22(1), 4-20.
- Kothari, C. R. (2013). *Research methodology: Methods and techniques (3rd ed.)* New Delhi: New Age International Publishers Ltd.
- Kummer, T. F., Singh, K., & Best, P. (2015). The effectiveness of fraud detection instruments in not-for-profit organizations. *Managerial Auditing Journal*, 30(4/5), 435-455.
- Premier Bank Somalia Profile (2015). Retrieved December, 2015 from <http://kulmiye.com/city/mogadishu/listing/premier-bank-somalia/> (2015)
- LaSalle, R. E. (2007). Effects of the fraud triangle on students' risk assessments. *Journal of Accounting Education*, 25(1), 74-87.
- Levi, M. (2000). The Prevention of Plastic and Cheque Fraud: *A Briefing Paper*. London: Home Office.
- Licker, P. (2007, April). Stewardship models of it governance: Beyond agency theory. In *Proceedings of the Midwestern Decision Sciences Institute Annual Conference (Chicago, IL)*.
- Little, A., & Best, P. J. (2003). A framework for separation of duties in an SAP R/3 environment. *Managerial Auditing Journal*, 18(5), 419-430.
- Mackevičius, J., & Giriūnas, L. (2013). Transformational Research of the Fraud Triangle. *Ekonomika*, 92.
- Ma, J., & Ma, C. (2011). Factor analysis based on the COSO framework and the Government audit performance of control theory. *Procedia Engineering*, 15, 5584-5589.
- Mzekanda (2015) *MasterCard enters Somalia's payments network* <http://www.itwebafrica.com/home-page/financial/690-somalia/234716-mastercard-enters-somalias-payments-network>
- Nadia Saleem, (2015) *Somalia's Premier Bank to bring ATMs, debit cards to Mogadishu*. Retrieved December, 2015 from <http://www.reuters.com/article/somalia-premierbank-SL5N0XH3AQ20150422>.
- Nueman, W. L. (1997). *Social research methods; qualitative and quantitative approach*. White Plains, NY: Longman.
- Olatunji, O. C. (2009). Impact of internal control system in banking sector in Nigeria. *Pakistan journal of social sciences*, 6(4), 181-189.
- Oloidi, G. A., & Ajinaja, O. T. (2014) Bank Frauds and Forgeries in Nigeria: A Study of the Causes, Types, Detection and Prevention. *Journal of Economics and Finance*, 4(2), 41-50
- Othamn, R., Ishak, I. F., Ariffin, N. K., Ismail, R., Razali A. A. (2014). Control Activities in the Payroll Process: A Case Study on the Malaysian Public Sector. *Proceedings of ICF 2014*.
- Pallant, J. (2007). *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS for Windows (Version 20), (3<sup>rd</sup> ed.)*. McGraw-Hill Education (UK)
- Pramod, V., Li, J., & Gao, P. (2012). A framework for preventing money laundering in banks. *Information Management & Computer Security*, 20(3), 170-183.
- Plambeck, L & Gibson, P. (2010). Application of agency theory to collaborative supply chains, In Gupta, A (Eds), *Oxford Business & Economics Conference (OBEC)*, p 2-12, Oxford: OBEC.
- Rae, K., & Subramaniam, N. (2008). Quality of internal control procedures: Antecedents and moderating effect on organizational justice and employee fraud. *Managerial Auditing Journal*, 23(2), 104-124.
- Rezaee, Z. (1995). What the COSO report means for internal auditors. *Managerial Auditing Journal*, 10(6), 5-9.
- Rittenberg, L. E., Martens, F., & Landes, C. E. (2007). Internal control guidance: Not just a small matter. *Journal of accountancy*, 203(3), 46.
- Rudewicz, F. (2011). The Fraud Diamond: Use of Investigative Due Diligence to Identify the 'Capability Element of Fraud'. *The Connecticut Turnaround Association Management Newsletter*, 4(1), 1-3.
- Salaam Somali Bank profile (2015). Retrieved January, 2015 from <http://www.salaamsombank.com/pages.php?id=5> (2015)
- Sang, M. J. (2012). Determinants of Fraud Control Measures in Commercial Banks: A Survey of Selected Commercial Banks in Nakuru Town, Kenya. *International Journal of Science and Research* 4(71), 129-135.
- Seetharaman, A., Senthilvelmurugan, M., & Periyannayagam, R. (2004). Anatomy of computer accounting frauds. *Managerial Auditing Journal*, 19(8), 1055-1072.
- Sekaran, (2003). *Research methods for business students*. New Delhi: Pearson education publishers.
- Shapiro, B., & Matson, D. (2008). Strategies of resistance to internal control regulation. *Accounting, Organizations and Society*, 33(2), 199-228.
- Stringer, C., & Carey, P. (2002). Internal control redesign: an exploratory study of Australian organizations. *Accounting, accountability and performance*, 8(2), 61-86.
- Simon, R. T., & Zurko, M. E. (1997, June). Separation of duty in role-based environments. In *Computer Security Foundations Workshop, 1997. Proceedings, 10th* (pp. 183-194). IEEE.
- Smith, D. A. (2015). The Effects of Sarbanes-Oxley on Reporting Profits. *Journal of Accounting & Marketing*, 4(1), 68-96.
- Smith, J., Tiras, S. L., & Vichitlekarn, S. S. (2000). The Interaction between Internal Control Assessment and Substantive Testing in Audits for Fraud\*. *Contemporary Accounting Research*, 17(2), 327-356.
- Shelton, Austin M., (2014). "Analysis of Capabilities Attributed to the Fraud Diamond". *Undergraduate Honors Theses*. Paper 213. <http://dc.etsu.edu/honors/213>
- Trust African Bank Profile (2015). Retrieved December, 2015 From TAB Website <http://trustafricanbank.com/who-we-are/>
- Wells, J. T. (2004). New approaches to fraud deterrence. *Journal of Accountancy-NEW YORK-*, 197(2), 72-76.
- Wells, J. T. (1990). Six common myths about fraud. If not debunked, they can obscure the existence of white-collar crime. *Journal of Accountancy*, 169(2), 82.
- Weygandt, J. J., Kimmel, P., & Kieso, D. (2010). *Accounting Principles, (10<sup>th</sup> ed.)*. Wiley Publishing, USA.
- Wolfe, D. T., & Hermanson, D. R. (2004). The fraud diamond: Considering the four elements of fraud. *The CPA Journal*, 74(12), 38.



Zajac EJ, Westphal JD. (2004). The social construction of market value: institutionalization and learning perspectives on stock market reactions. *American. Sociology* 69 233–57

Zikmund, W. (2003). *Business Research Methods*, (7th Ed.). Oklahoma City: Oklahoma State University.