ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING & FINANCE

Effect of Internal Control on Fraud Prevention in Commercial Banks of Ethiopia

A thesis submitted for partial fulfillment of the requirements for the Degree of Masters -MSC in Accounting and Finance

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MAY, 2021

ADDIS ABABA

DECLARATION

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another university or elsewhere. However, works by other authors which served as sources of information and referencing have been acknowledged by references to the authors thereafter.

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May, 2021

CERTIFICATION

This is to certify that this research project was carried out under my strict supervision and has been approved for submission to the Department in partial fulfillment of the requirements for the award of Degree of Masters -MSC in Accounting and Finance for Addis Ababa University.

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This is to certify that the thesis prepared by Gedion Getachew W/Gebriel, entitled: Effect of internal control on fraud prevention in commercial banks of Ethiopia, and submitted in partial fulfillment of the requirements for the Degree of Masters of science (MSC) in Accounting and Finance complies with the regulation of the university and meets the accepted standards with respect to originality and quality.

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Abstract

Different reports from different parts of the world confirms banking fraud is growing from time to time both in kind and size all over the world. Studies show different results regarding the effect of internal control on fraud prevention in banks. The conflicting findings plus lack of understanding about the appropriate research design and the presence of few researches with few sample size in the topic area in our country were the major gaps that necessitated this study. This study tried to fill this gap by conducting a census targeting all 18 commercial banks in Ethiopia by choosing appropriate research design and tried to provide reliable findings. Hence, analyzing the effect of internal controls on fraud prevention was the primary objective of this paper. Explanatory research design adopted for this study. 155 directors, managers, senior officers from all commercial banks targeted and responded to the designed questionnaire. Ordinal logistic regression analysis was used to analyze the data. The major findings include, control environment has significant effect on fraud prevention in commercial banks of Ethiopia, Risk assessment has also significant effect on fraud prevention, similarly, control activities, information and communication, and monitoring activities has significant effect on fraud prevention in commercial banks of Ethiopia. For every one-unit increase in the predictor variables, the probability of the Ethiopian Commercial Banks being in a high level of fraud Prevention showed increase by respective regression coefficient values of all predictor variables, keeping the other variables in the model constant. The full model with five predictors provided a better fit than the null model with no independent variables in predicting cumulative probability for Fraud prevention in commercial banks of Ethiopia. The study concluded that internal control has significant effect on fraud Prevention in commercial banks of Ethiopia.

Key Words*: Internal control, Fraud prevention, internal control components*

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

It is exasperating to realize that you cannot withdraw from your bank saving account, because your account has been stolen by someone using fake identification. It is irritating, Right? You may ask your bank how this happened? Who did this? How the bank let this to happen? It is happened anyway. Let say you needed the many for very urgent spending, that may hit your nerve. We call this theft financial fraud or identity theft. Reports indicates that financial fraud is growing time to time around the world. It is happening to different organizations, in different amount, in different new techniques. It has never been destroyed. It is imperative to design some sort of mechanisms to detect and prevent such kind of fraudulent actions.

Now we can talk about internal control; Internal Control involves the whole mechanisms employed by the organization in order to continue the business of the enterprise in an organized and effective way by devising an automatic check and balance overall the transactions. The presence of an efficient internal control system can help the management and the auditor by assuring a high degree of precision and reliability of all the financial and operating information, reduces incidence of frauds and errors, protect assets against any abuse, upholds operational efficiency and prevent wastages (Kumuthinidevi,2016).

In the same way, the need for internal control schemes in the banking sector is indispensable. Internal control comprises the control environment and control procedure, all the rule and regulations adopted by the banks to achieve their objectives, including devotion to internal procedures, the safeguarding of resources, the detection and prevention of fraud as well as the completeness and accurateness of records, with the timely preparation of reliable financial information (Benjamin, 2001).

As mentioned earlier, the incidence of fraud, cooking the books and theft has been on the increase. Some claim that it is because of internal control is unreliable, others attribute it to an incompetently functioning internal control system as a consequence of poor employment, poor training and unreserved workforces, some connects it with manual record keeping which makes it simple for the perpetrators of fraud. The loss that fraud peril to the banking sector is numerous and needs serious attention. The literature review revealed that previous studies in the same topic has some limitations as described in the problem statement section. Therefore, the attempt to put an end to those gaps, gave rise to the topic of this research study “effect of internal control on fraud prevention in Commercial Banks of Ethiopia”, by raising the research question “does internal control has effect on fraud prevention in commercial banks of Ethiopia?”, and the research hypothesis, H1: internal control has significant effect on fraud prevention in commercial banks of Ethiopia.

1.2. Statement of the Problem

Banking fraud is growing from time to time both in kind and size all over the world. Different reports from different parts of the world confirms this fact; for example, Association of Certified Fraud Examiners (ACFE, 2014) reported the highest number of fraud incidence in USA is filed in the banking and financial services (17.8%), with a median loss of $200,000. The Chinese banking sector as well has a loss of around 20 billion Yuan a massive fraud probe in the eastern port city of Qingdao (Nigel W,2014). Likewise, in India financial fraud is a big problem, contributing to an estimated 20 billion USD in direct losses annually. Industry experts suspect that this figure is actually much higher (ASSOCHAM,2015).

In developing countries like Africa this problem is expected to be much severe than the developed countries. Data from the Banking Fraud Investigations Department (BFID), a division of the Central Bank of Kenya, shows that 525 cases of fraud were leading to a loss of $8.5 million by various financial institutions only in the first quarter of 2014.In Nigeria, The Central Bank of Nigeria (CBN) reported that cases of attempted fraud and forgery in banks, as at half-year 2012 exceeded what was recorded in the whole of 2011.

Similarly, in our country Ethiopia, there are many incidences that reveals the surge of fraudulent acts in the banking sector. The Commercial Bank of Ethiopia has lost more than $314,000 to a bank fraud perpetrated at its headquarters. Twelve defendants were charged with fraud and found guilt (CBE, 2016). In other scenario, an auditor’s opinion on the financial performance of the Cooperative Bank of Oromia (CBO) S.C. for 2014/15 has revealed that the Bank actually made invalid loans to the sum of 388.7 million Br. which leads to face the mass suspension of its top executives by the National Bank of Ethiopia (NBE). Likewise, quarterly publication of Bank of

Abyssinia reveals Ragual and Gottera branches were exposed for improper use of cash by their own employees (BOA, 2008).

Studies show different results regarding the effect of internal control on fraud prevention in banks. For instances, Fikru worku, (2018) reported a positive relationship between internal controls and the level of fraud prevention and detection of banking industry in Ethiopia. (Leah N. & Dr. Josiah A., 2017) reported a negative and significant relationship between internal control and level of fraud prevention and detection among Commercial banks in Kenya. Idowu and Adedoku (2013) in their study effects of internal control system on fraud detection in selected Nigerian commercial banks reported that there was a statistically significant and positive relationship between internal control systems and fraud prevention and detection.

As per the researcher knowledge, there are few researches done in this topic in our country. Not only this, even the conducted few researches has their own limitations. Furthermore, lack of understanding was also observed, that resulted in controversial findings about the effect of internal control on fraud prevention. The previous research work used descriptive and correlational research design instead of explanatory research design for the casual analysis, which was not the appropriate way to conduct a casual research. In addition to other aspects, sample size and methodologies are the reasons for different and conflicting research findings, and changing the methodologies and the sample size surges the reliability of the research findings (Peter A, 2018). This study tried to fill this gap by conducting a census targeting all commercial banks in Ethiopia to increase the sample size and applied explanatory research design to come up with reliable findings. Hence, examining the effect of internal controls designed by commercial banks in Ethiopia to prevent fraud was the primary objective of this paper; by Devising the following research question;

1.3. Research Question

This research tried to answers the following question, “Does internal control has effect on fraud prevention in commercial banks of Ethiopia?”

1.4. Objective of the Study

The main objective of the study was: To analyze the effect of internal controls on fraud prevention in commercial banks of Ethiopia.

1.5. Hypothesis

As presented in the theoretical framework, internal control consists of five components including control environment, risk assessment, information and communication, control activities, and monitoring. So analysis of the effect of internal control on fraud prevention in commercial bank of Ethiopia turns out that the study scrutinizes the effect of each component of internal control on fraud prevention in commercial banks of Ethiopia. So the study examines some assumptions as below:

H1: Control environment has a significant effect on fraud prevention in commercial banks of Ethiopia.

H2: Risk Assessment has a significant effect on fraud prevention in commercial banks of Ethiopia.

H3: Control Activities has a significant effect on fraud prevention in commercial banks of Ethiopia.

H4: Information and communication has a significant effect on fraud prevention in commercial banks of Ethiopia.

H5: Monitoring Activities has a significant effect on fraud prevention in commercial banks of Ethiopia.

1.6. Significance of the Study

This study will benefit different stakeholders including, academicians, scholars, and commercial banks in Ethiopia. For the academic world, the study will provide evidence from Ethiopia about the conflicting topic on hand, which is the effect of internal controls on fraud prevention by selecting the banking industry. The study will also help the banking industry in the fight against fraud, by proposing actions must be taken. It will increase body of knowledge to scholars and academicians on the selected topic. The study will suggest areas for further research studies so that future scholars in the field of accounting can undertake new research issues. The results of the study will inform the bank managers and executives.

1.7. Limitations of the Study

This study, like any other, is subject to certain limitations. One such limitation is; the target populations are directors, managers, senior auditors, senior risk and compliance officers and executives at the head office level only. In this regard, future studies including employees and managers and auditors from both head office and branch level might provide more comprehensive evidence.

1.8. Organization of the Study

This paper has five chapters: Chapter one provides the overall structure of the thesis, chapter two presents literature review in the subject. Chapter three provides methodological information's. Chapter four analyzes, presents, interprets, and discuss the collected data. Chapter five provides summery of findings, overall conclusion, and recommendation of the study.

CHAPTER TWO

LITRATURE REVIEW

2. INTRODUCTION

Internal control is important constituent of bank management and a basis for the safe process of banking industry. Robust internal control can assist to warrant that the objectives of a banking business will be met, that the bank will accomplish long-term success goals, and retain trustworthiness of financial as well as managerial reporting (Markowski & Mannan, 2008). Such scheme can also aid to confirm that the bank will act in accordance with bylaws and regulations as well as guidelines, strategies, and minimize the risk of unanticipated loss or destruction to the bank's reputation. The Basel Committee, beside the banking superintendents all over the world, has given attention gradually on the significance of comprehensive internal control. This intensified devotion in internal controls, as a consequence of substantial loss suffered by numerous banks. A scrutiny of the harms connected to this loss shows that they might possibly have been circumvented if the banks preserved efficient internal control systems. Such systems would have prohibited or allowed prior discovery of the harms that led to the loss, to limit harm to the banks (Opromolla & Maccarini, 2010).

Internal control is a processes designated to deliver reasonable assurance that management accomplishes effective as well as efficient operations, trustworthiness of financial reporting and amenability with pertinent decrees and procedures (Grant, Miller, & Alali, 2008). Internal control possibly averts errors plus fraud by means of inspecting and improving managerial and financial reportage methods (Rae and Subramanian, 2008). Reasonable assurance can be delivered when cost effective activities are in use to limit deviances, such as inappropriate or unlawful acts to an unobjectionable level. Internal audit evaluates the efficiency of the internal control systems to determine whether the systems are running as proposed (Fadzil, Haron & Jantan, 2005).

Internal control has to give emphasis to, accurate identification measurements and monitoring of risk, control activities for every level of operations, formation of trustworthy information system that early report inconsistencies and exhaustive reporting of all operations and monitoring activities (Opromolla & Maccarini, 2010). Internal control can be influenced by a bank's board of directors and managements and it can be designed to warrant effective and efficient operations, trustworthiness of financial reporting and obedience with valid decrees and regulations (Spira& Page, 2003). Management ought to evaluate and report the success of the bank's internal control to its shareholders (Rezaee, 1995). Internal control must have the next gears, control environment, risk assessment, control activities, information & communication and monitoring activities (Basel Committee, 2011). These interconnected constituents of internal control must present and function accurately in order to have a satisfactory internal control system (Rezaee, 1995).

2.1. Internal Control

COSO defined internal control as a practice made by an entity's board of directors, management and other staffs created to offer reasonable assurance concerning the accomplishment of objectives (COSO, 1992). It is also an arrangement organized by the firms whose aim is to promote effective and efficient activities (Cook et al. 1980).

Moreover, a procedure containing of persistent everyday jobs and doings which is a way to an end, not an end by itself and enacted by people is internal control. It is not only about guiding principle, instructions, schemes, and procedures, but it is also about workforce at all level of an organization that influence internal control. It needs to provide reasonable assurance, not complete assurance, to an entity's board and senior executives (Jayne et al, 2017).

2.2. The Seven Internal Control Procedures in Accounting

Internal controls are policies and procedures put in place to ensure the continued reliability of accounting systems. Accuracy and reliability are paramount in the accounting world. Without accurate accounting records, managers cannot make fully informed financial decisions, and financial reports can contain errors. Internal control procedures in accounting can be broken into seven categories, each designed to prevent fraud and identify errors before they become problems. The seven internal control procedures are separation of duties, access controls, physical audits, standardized documentation, trial balances, periodic reconciliations, and approval authority (David I, 2019).

2.2.1. Separation of Duties

Separation of duties involves splitting responsibility for bookkeeping, deposits, reporting and auditing. The further duties are separated, the less chance any single employee has of committing fraudulent acts. For small businesses with only a few accounting employees, sharing responsibilities between two or more people or requiring critical tasks to be reviewed by co-workers can serve the same purpose. Segregation of Duties is a basic building block of sustainable risk management and internal controls for a business. The principle of SOD is based on shared responsibilities of a key process that disperses the critical functions of that process to more than one person or department. Without this separation in key processes, fraud and error risks are far less manageable. Imagine what would happen if the keys, lock and code for a nuclear weapons system were all in the hands of one person! Emotions, coercion, blackmail, fraud, human error and disinformation could cause grave and expensive one-sided actions that can't be corrected. Or, consider the software engineer who has the authority to move code into production without oversight, quality assurance or access rights' authentication. Without SOD, either of these scenarios clearly shows the possibility of disastrous outcomes. As a result, the risk management goal of SOD controls is to prevent unilateral actions from occurring in key processes where irreversible affects are beyond an organization's tolerance for error or fraud (David I, 2019).

2.2.2. Accounting System Access Controls

Controlling access to different parts of an accounting system via passwords, lockouts and electronic access logs can keep unauthorized users out of the system while providing a way to audit the usage of the system to identify the source of errors or discrepancies. Robust access tracking can also serve to deter attempts at fraudulent access in the first place (David I, 2019).

2.2.3. Physical Audits of Assets

Physical audits include hand-counting cash and any physical assets tracked in the accounting system, such as inventory, materials and tools. Physical counting can reveal well-hidden discrepancies in account balances by bypassing electronic records altogether. Counting petty cash can be done daily or even several times per day. Larger projects, such as hand counting inventory, should be performed less frequently, perhaps on an annual or quarterly basis. It can be an arduous task to keep tracks of different assets that reside within an organization's inventory. There can be tremendous implications if assets are not managed in a proper and systematic way. Records can easily get misplaced and can get lost in transition when assets are moved from one location to another. Many companies have trouble in tracking the location of assets, recalling previous asset orders or identifying which physical assets have been properly decommissioned. Thus, an inaccurate asset management can lead to loss of money due to broken equipment or purchasing redundant equipment that is not required. One of the best practices to curb these risks is to create an asset register to track the location, condition and life cycle of asset from procurement to destruction. An asset register is a resource which details a company's different assets that it owns and manages and basically shows the assets the business owns. It is used to track things such as corporate facilities, buildings, hardware, software, digital files etc. Regardless of whether it is acquisition, usage, distribution, inspection, maintenance or disposal of assets etc., asset register is very useful for businesses in the management of all these processes. The asset register is an asset data archive and the system for tracking asset records. It details the value of assets, date of acquisition & disposal and other relevant details and helps to keep records of different assets information owned by the organization for a better asset planning, accounting and performance measurement (David I, 2019).

2.2.4. Standardized Financial Documentation

Standardizing documents used for financial transactions, such as invoices, internal materials requests, inventory receipts and travel expense reports, can help to maintain consistency in record keeping over time. Using standard document formats can make it easier to review past records when searching for the source of a discrepancy in the system. A lack of standardization can cause items to be overlooked or misinterpreted in such a review. A Document Management Software is a computer program used to store, manage and track electronic documents and electronic images of paper based information captured through the use of a document scanner (David I, 2019).

2.2.5. Daily or Weekly Trial Balances

Using a double-entry accounting system adds reliability by ensuring that the books are always balanced. Even so, it is still possible for errors to bring a double-entry system out of balance at any given time. Calculating daily or weekly trial balances can provide regular insight into the state of the system, allowing you to discover and investigate discrepancies as early as possible (David I, 2019).

2.2.6. Periodic Reconciliations in Accounting Systems

Reconciliation is an accounting process that compares two sets of records to check that figures are correct and in agreement. It also confirms that accounts in the general ledger are consistent, accurate, and complete. However, reconciliation can also be used for personal purposes in addition to business purposes. Account reconciliation is particularly useful for explaining the difference between two financial records or account balances. Some differences may be acceptable because of the timing of payments and deposits. Unexplained or mysterious discrepancies, however, may warn of fraud or cooking the books. Businesses and individuals may reconcile their records daily, monthly, or annually. There is no standard way to perform an account reconciliation. However, generally accepted accounting principles (GAAP) require double-entry accounting where a transaction is entered into the general ledger in two places and is the most prevalent tool for reconciliation. Double-entry accounting is a useful way of reconciling accounts that helps to catch errors on either side of the entry. In double-entry accounting which is commonly used by companies every financial transaction is posted in two accounts, the credit account, and the debit account. One account will receive a debit, and the other account will receive a credit (David I, 2019).

2.2.7. Approval Authority Requirements

Requiring specific managers to authorize certain types of transactions can add a layer of responsibility to accounting records by proving that transactions have been seen, analyzed and approved by appropriate authorities. Requiring approval for large payments and expenses can prevent unscrupulous employees from making large fraudulent transactions with company funds, for example (David I, 2019).

2.3. Role of Internal Control

Empirical studies exhibited that internal control & its constituents play a substantial role in controlling fraud in organizations (Idogei S, 2017). Internal control plays an imperative role in catastrophe handling and business steadiness practices (Aysel G, 2014). It should be acclaimed that the role of internal control in financial reporting is to assist the truthfulness and trustworthiness of the company's exterior financial reporting procedures. Internal control is not envisioned to offer any guarantees about the company's operating performance, its upcoming consequences, or the excellence of its business model (Delta Pc, 2013).

Internal control encompasses the strategies, approaches, rules and procedures used to accomplish the objectives of the entity. Internal control functions as the first line of shield in safeguarding assets. In a nutshell, it aids managers to accomplish anticipated outcomes via potent protection of public resources. In particular, the system is formed to confirm that some objectives which are essential to the operation of the bank are accomplished. (COSO, 1999) classifies the objectives of internal control scheme as a means to deliver reasonable assurance that; assets are safeguarded plus used for business aim only, business information is correct, workforces obey with laws & regulations.

2.4. Components of Internal Control

COSO combined charter offers five cohesive components of internal control. For effective internal control scheme, these constituents need to effectively designed, applied, and functioning collectively in unified way. The five components of internal control are presented as follows;

- Control environment,
- Risk assessment,
- Control activities,
- Information and communication and
- Monitoring activities

2.4.1. Control Environment

This component is the crucial and the principal basis for all of the other components of an internal control system. The control environment is symptomatic of the general consciousness of both a bank's board and management, and their perspective in assigning satisfactory level of significance to the control activities. The control environment replicates the overall influences by a bank's board and management in the compulsory discipline & the suitable structure for confirming appropriate internal controls over a bank's operations. The vital constituents of an effective control environment include; Employees integrity and ethical values, Commitment to staff competency and skill enrichment, Involvement of Board Members and Board Committees, Constructive influence of Management's commitment, Organizational structure that empowers the management, clearly defined authority and responsibility, Effective policies and rule for human capitals (NBL, 2005).

2.4.2. Risk Assessment

Risks from outside and inside entities are encountered by all organizations. Risk is described as the likelihood that an incident will happen and unfavorably affect the accomplishment of objectives. Risk assessment includes a vibrant and reiterative process for finding and evaluating risks to the accomplishment of objectives. Risks to the accomplishment of these objectives from inside the entity are measured comparative to conventional risk tolerances. Hence, risk assessment procedures are the foundation for determining how risks will be handled. A requirement to risk assessment is the formation of objectives, connected to different hierarchy of the organization. Management stipulates objectives within groups connecting to operations, reports, and agreement with adequate simplicity to be able to detect and investigate risks to those objectives. Management also contemplates the appropriateness of the objectives for the entity. Risk assessment also requires management to think through the effect of probable variations in the outside environment and within the business model that may reduce internal control ineffectual (Rokeya et al, 2011).

It also assesses the risks the entity facing as it pursues to accomplish its objectives. This assessment offers the foundation for developing suitable risk responses. (COSO, 2009).

2.4.3. Control Activities

According to NYSGAAIC Act 2007 several different control activities can be used to hinder the risks that intimidate an organization's achievement. Nevertheless, most control activities can be gathered into two groups: detection and prevention control actions. Prevention activities are formulated to discourage the incidence of an adverse occasion. The formulation of these controls includes forecasting possible difficulties before they happen and applying ways to circumvent them. Detection activities are framed to find detrimental events that do happen, and aware management about what has occurred. Prevention controls incline to be costly than detection controls. Costs and benefits must be evaluated before control activities are applied. Management ought to recall that an extreme use of prevention controls can obstruct productivity. No sole control activity offers all of the responses to risk management difficulties. In some circumstances, a mixture of control activities should be used, or in others, one control activity could replace the other. Control activities are involved in at various stages within the bank's administrative structure which includes;

I. *Operational Performance* - Control activities in this part embrace the evaluation of risk in the real financial performance related to the accounted projections. Any substantial discrepancies are then scrutinized to decide whether any explicit bank action must be updated.

II. *Information Processing* - Control activities in this part embrace the authentication of the precision & comprehensiveness of bank transaction to control whether they had been accurately approved. Control activities in the information part are generally dignified through two methods general control & application control. General control is omission over data midpoint processes, comprising processors and servers, and system software obtaining, conservation and admission. Application control is the omission for the plan that the bank exploits to practice and screen transactions.

III. *Physical Controls* - in general it focuses on limiting access to physical resources, comprising cash & check stocks. Control activities embrace physical boundaries, dual safekeeping, & regular inventory count.

IV. *Segregation of Duties* - Control activities in this part refers to the obligation of the several duties participated in a transaction, or any bank activities, to different peoples. This method is proposed to avert a bank worker from being in a location to commit criminal activities in the way of that individual's regular duties (Basel committee, 1998).

2.4.4. Information and Communication

Schemes that assist the identifying, capturing, and exchanging of information’s that enables individuals to process their tasks. Information is essential for the banks to process internal control everyday jobs to assist the accomplishment of its objective. Management acquire or produce & use relevant and excellence information from both inside and outside source to help the role of other constituents of internal controls. Communication is the persistent, reiterative practice of offering, distribution, and earning essential information's. Internal communication is the way by which information is dispersed all over the institute, flowing horizontally, vertically within the organization. It enables workers to obtain a clear communication from senior managers that control obligations must be taken seriously. Similarly, external communications are twofold: they enable incoming communications of significant exterior information's, and they deliver information's to outside entities in reply to requirement and expectation (COSO, 2009).

2.4.5. Monitoring Activities

Monitoring measures the excellence of internal control. Monitoring executed on a daily base, is a procedure that covers the valuation of internal control excellence, the strategy and process of controls and actions to be engaged. Consistent surveillance of the internal control scheme and detection of abnormalities is mandatory in order to accomplish these stated objectives. And this is achieved by Internal Audit or section in companies (Aysel G, 2014).

Actions management launches and functions to evaluate the excellence of performance all the time and quickly solve the discoveries of audits and other assessments (Dr. Theofanis et al, 2001). Internal control scheme requires to be checked a procedure that measures the excellence of the system's performance all the time. This can be achieved via enduring monitoring activities, distinct valuations or a mixture of the two. Continuing monitoring arises in the progress of processes. It embraces steady management and administrative activities. The range and regularity of distinct assessments will be contingent mainly on valuation of risks and the efficiency of continuing monitoring measures. Internal control shortages must be informed to top executive and the board.

2.5. Major Principles of Internal Control

The Basel Committee suggests the use of thirteen principles in appraising a bank's internal control scheme. The Committee delivered the following principles to all administrative experts universally in the confidence that the principles offered will deliver a valuable basis for the effective management of internal control schemes.

Table 1: Principles of Internal control. (Basel Committee, 1998)

Control culture	*Principle 1:* The board of directors should have responsibility for approving and periodically reviewing the overall business strategies and significant policies of the bank.
	Principle 2: Senior management should have responsibility for implementing strategies and policies approved by the board.
	Principle 3: The board of directors and senior management are responsible for promoting high ethical and integrity standards, and for establishing a culture within the organization that emphasizes and demonstrates to all levels of personnel the importance of internal controls.
Risk Assessment	*Principle 4:* An effective internal control system requires that the material risks that could adversely affect the achievement of the bank's goals are being recognized and continually assessed.
Control Activities	*Principle 5:* Control activities should be an integral part of the daily activities of a bank. An effective internal control system requires that an appropriate control structure is set up, with control activities defined at every business level. These should include: top level reviews; appropriate activity controls for different departments or divisions; physical controls; checking for compliance with exposure limits and follow-up on non-compliance; a system of approvals and authorizations; and, a system of verification and reconciliation.
	Principle 6: An effective internal control system requires that there is appropriate segregation of duties and that personnel are not assigned conflicting responsibilities.
Information and Communication	*Principle 7:* An effective internal control system requires that there are adequate and comprehensive internal financial, operational and compliance data, as well as external market information about events and conditions that are relevant to decision making. Information should be reliable, timely, accessible, and provided in a consistent format.
	Principle 8: An effective internal control system requires that there are reliable information systems in place that cover all significant activities of the bank.
	Principle 9: An effective internal control system requires effective channels of communication to ensure that all staff fully understand and adhere to policies and procedures affecting their duties and responsibilities and that other relevant information is reaching the appropriate personnel.
Monitoring Activities	*Principle 10:* The overall effectiveness of the bank's internal controls should be monitored on an ongoing basis. Monitoring of key risks should be part of the daily activities of the bank as well as periodic evaluations by the business lines and internal audit.
	Principle 11: There should be an effective and comprehensive internal audit of the internal control system carried out by operationally independent, appropriately trained and competent staff as part of the monitoring activities.
	Principle 12: Internal control deficiencies, whether identified by business line, internal audit, or other control personnel, should be reported in a timely manner to the appropriate management level and addressed promptly.
	Principle 13: Supervisors should require that all banks, regardless of size, have an effective system of internal controls that is consistent with the nature, complexity, and risk inherent in their on- and off-balance-sheet activities and that responds to changes in the bank's environment and conditions.

2.6. Fraud Concept

One of the rigorous white collar fraud is the servant fraud in the institute intending to be rich and leave the institute as fast as possible when the fraud has been effectively performed. Committee of Sponsoring Organization of the Tread Way Commission (2010) reports huge amounts of money being missing frequently by public companies and more usually amongst the intermediate or lesser size companies, where more than 25% of resources were missing. The form of the management appears not meaningfully altered from companies not susceptible to fraud (Black, 2005) he called the occurrence as a control fraud.

Chakraborty (2013) explains fraud as any actions by which somebody proposes to acquire a deceitful gain from others where the person creates dishonest earning by the cost of the other parties. The Institute of Professional Practices Framework (Sommer, 2014) explains fraud as any unlawful act characterized by disguise or destruction of faith which do not directly depends on the use of ferocity, committed in companies to get money, assets, or amenities, to circumvent payment of amenities, or to protect own advantage. Chakrabarty classifies the frauds into three types as technology oriented, by knowing the customer well, and loan related. ACL clusters fraud in banking into eleven pieces with four being reasonably substantial amongst which are bribery, cash on hand, billing & cheque altering, abusing non-cash assets and stealing amongst numerous others. In today’s era, of technology assisted payment mechanisms, it is described that the highest value of frauds occurs. Know your customer is connected to customers, deliberate fraud in any method by duplicating data or falsifying or obtaining data to carry out fraud, while the third is linked to loans.

Fraud detection or prevention is a task that must be wide ranging generally and specifically in the internal audit team. Fraud must not go through and be unnoticed in any fiscal year where an efficient internal control and audit procedure are in place. Internal control is extent of measures that need to identify errors, frauds and abnormalities, to confirm that all transactions are appropriately administered and confirm that all assets are protected through limitation on access for authorized peoples only. It also permits work to be executed by an individual and any oversight or error can be marked out by others (Aguotu, 2002). One of the methods to identify fraud post audit through internal audit. Internal audit is the procedure involved to check if due procedures have been tracked in the doing the regular actions of a company. According to Gayasi

(2000) internal audit functions to deliver independent opinion on financial, accounting and other aspects to the supervisor as a base for defensive and constructive provision. It executes well if it has adequate authority within the entity (Bank for International Settlement, 2012).

2.6.1. The Fraud Triangle Theory

Albrecht et al., (2009) States that fraud is composed of three elements, namely a perceived pressure, a perceived opportunity and rationalization of the act of fraud; these three elements are called the fraud triangle. Every act of fraud, irrespective of whether it is done against an entity or on behalf of an entity, is always composed of the three elements. The three elements in the fraud triangle are interactive, for instance the greater the perceived opportunity or the more intense the pressure, the less rationalization it takes for someone to commit fraud (Albrecht, Turnbull, Zhang, &Skousen, 2010). However, fraud is a complex matter and is a function of a combination of factors for instance, in some cases, although internal controls were poor, there were no incidence of fraud, while in other cases even though good internal controls existed employees still managed to circumvent the internal controls to commit fraud (Rae &Subramaniam, 2008). An understanding of how opportunities, pressures and rationalizations contribute to fraud in organizations can assist management to easily recognize the areas of susceptibility to fraud and strengthen these areas Fraud perpetrators must have some way to rationalize their actions as acceptable (Albrecht et al., 2009). Justification of fraudulent behavior is usually as a result of a fraudster’s lack of personal integrity or other moral reasoning (Rae &Subramaniam, 2008). Individuals do not commit fraud unless they can justify it as being consistent with their own personal code of ethics, as personal integrity may be the key limiting factor in keeping a person from misappropriating assets (Hillison et al., 1999). Rationalization by fraudsters emanates from their feeling that the victims owe them and that they deserve more than they are getting. Some individuals possess an attitude, character or set of ethical values that allow them to knowingly and intentionally commit a dishonest act (Cohen et al., 2011). A strong moral code can prevent individuals from using rationalizations to justify illicit behavior; internal auditors however should assume that anyone is capable of justifying the commission of fraud (Hillison et al., 1999).

2.6.2. Bank fraud

Bank fraud is the use of potentially illegal means to obtain money, assets, or other property owned or held by a financial institution, or to obtain money from depositors by fraudulent posing as a bank or other financial institution. Bank fraud is sometimes considered a white-collar crime. Some of common bank fraud includes theft, embezzlement, defalcations, forgeries, payment against uncleared effects, unauthorized lending, lending to ghost ‘borrowers, unofficial borrowing, foreign exchange malpractice, impersonation, manipulation of vouchers, fictitious accounts, over and under valuation of properties, false declaration of cash shortages, falsification of status reports, duplication of cheque books, interception of clearing cheques, computer frauds, fake payments, and others (Woods I, 2017).

2.6.3. Fraud Prevention

Fraud has been in existence throughout history and has taken many different dimensions. Bank fraud has grown with advent of the banking industry, and has been facilitated by the technological innovations and the widespread use of the Internet. According to the fraud triangle Albrecht et al., (2009) for fraud to occur the three factors; pressure, rationalization and opportunity should be present. Bank employees have knowledge of the systems as well as classified and confidential information which together with technological advancement can give them the opportunity to commit frauds. All they need is some pressure and the rationalization and that way they become part of fraud cartels that are fleecing millions of dollars from the banks. This can be attributed to failure by both the bank processes and the employees to detect and control fraud. Security experts say the amounts reported reflect only a small portion of the real losses suffered since banks prefer internal disciplinary measures in cases involving thieving employees (Levi M, 2008). This means that banks should be on an alert and should also revise their preventive and detective controls to keep up with fraud.

Preventive Controls are designed to discourage errors or irregularities from occurring. They are proactive controls that help to ensure departmental objectives are being met. Examples of preventive controls are:

- ❖ Segregation of Duties: Duties are segregated among different people to reduce the risk of error or inappropriate action. Normally, responsibilities for authorizing transactions (approval), recording transactions (accounting) and handling the related asset (custody) are divided.
- ❖ Approvals, Authorizations, and Verifications: Management authorizes employees to perform certain activities and to execute certain transactions within limited parameters. In

addition, management specifies those activities or transactions that need supervisory approval before they are performed or executed by employees. A supervisor's approval (manual or electronic) implies that he or she has verified and validated that the activity or transaction conforms to established policies and procedures.

- ❖ Security of Assets (Preventive and Detective): Access to equipment, inventories, securities, cash and other assets is restricted; assets are periodically counted and compared to amounts shown on control records. (Black W, 2015)

Detective Controls are designed to find errors or irregularities after they have occurred. Examples of detective controls are:

- ❖ Reviews of Performance: Management compares information about current performance to budgets, forecasts, prior periods, or other benchmarks to measure the extent to which goals and objectives are being achieved and to identify unexpected results or unusual conditions that require follow-up.
- ❖ Reconciliations: An employee relates different sets of data to one another, identifies and investigates differences, and takes corrective action, when necessary.
- ❖ Physical Inventories and Audits (Black W, 2015).

2.7. Effect of Internal Control Systems on Fraud Prevention

Effective Internal control systems are crucial in detecting and preventing fraud. The converse where nonexistence and ineffectiveness of internal controls do not facilitate fraud prevention is also true. The risk and control are virtually inseparable like two sides of a coin, meaning that risks first must be identified and assessed; then managed and mitigated by the implementation of a strong system of internal control (Onyefulu D, 2016).

The regularity of fraud and misappropriation of funds is creating fear, anxiety, and a loss of confidence in the minds of bank customers. Also, poor internal control system leads to increase in bank losses (ACFE, 2010). Management is required to set up an internal control system but this system varies significantly from one organization to the next, depending on such factors as their size, nature of operations, and objectives. Since internal controls operate in an environment which influences its operations, proper care must be exerted into the implementation of these systems in other to achieve the utmost aim of the bank. This heightened interest in internal controls is, in part, a result of significant losses incurred by several banking organizations

(Hochberg S. & Jorgensen, 2009). An analysis of the problems related to these losses indicates that they could probably have been avoided had the banks maintained effective internal control systems. Such systems would have prevented or enabled earlier detection of the problems that led to the losses, thereby limiting damage to the banking organization (Levi, 2008).

2.8. Empirical Studies

Fikru werku (2018) examined how internal control systems in the Ethiopian banks have aided in combating or preventing fraud in the banking industry by adopting primary data, descriptive and inferential data analysis techniques. Using a survey method and judgmental sampling method. The five components of internal controls were the dependent variables of the study and the independent variable was fraud prevention and detection. Study scrutinized the effectiveness of internal control in Ethiopian banking industry and based on that effectiveness the researcher tested the effectiveness of ICs in preventing and detection of fraud in Ethiopian banking industry. Among the findings were those internal control techniques employed by banks in checking fraud have been effective but put marks on some improvements and the final conclusion of this study was that there is a significant relationship between internal control system component and fraud. As a result, the researcher has given some recommendations so as to provide input for areas of control which needs more attention and due to ongoing process nature of the effective internal control.

Adetiloye et al (2016) examined the issues of internal control *and* fraud prevention in the banking industry, adopting both primary and secondary data. Primary data was used to test internal control while secondary data were employed to test fraud prevention. The main primary variables were separation of duties, monitoring, and staff qualifications while the main secondary variables are bank profit, regulation, technology and *Money supply*. In both cases regression techniques were adopted. The results show that internal control on its own is effective against fraud, but not all staff are committed to it, while the secondary data is quite supportive of the primary data but more exemplifying in that *money supply*, staff qualifications and technology were significant throughout the various dependent variables. It is also clear from the regressions that technological based fraud is significant.

In the other side study made by Tsedal Lemi, January, 2015 concluded that there is no absolute guarantee from internal control that organizations objectives will be achieved. It states that internal control is a responsibility of management, employees and other stakeholders. Hence there should be a clear line of responsibility and structure of reporting to discharge any risk of collusion and fraud. Separation of accounting duty from authorization and custody of an asset is a key in detecting control risk. Thus due emphasis should be given to maintain segregation of duties. The control system effectiveness should be evaluated against clearly established criteria ‘s and should be monitored continuously. This is the responsibility of management and internal auditors (Tsedal Lemi, 2015).

Leah N. & Dr. Josiah A., (2017) investigated the effect of internal controls on fraud detection and prevention among commercial banks in Kenya. The study adopted an explanatory research design. The population of the study was all 43 commercial banks operating in Kenya in the study period. The study conducted a census on thirteen commercial banks. The five components of internal controls were the dependent variables of the study and the independent variable was fraud prevention and detection. The study used primary data. An ordinary linear regression model was used. The regressions were conducted using statistical package for social sciences (SPSS) version 20. The regression results indicated that there was a negative and significant relationship between internal control and level of fraud prevention and detection. As a research gap, these conflicting findings from different authors raised this topic.

The study conducted by A. Singleton, G. Atkinson (2011) researched fraud prevention techniques applicable in the business environment, evaluating their efficiency. A. Singleton, G. Atkinson (2012) analyzed data published in ACFE 2010 RTTN rankings, of commonly used anti-fraud controls, and provided the motivation for the study. The null and alternative hypotheses for testing were that the anti-fraud controls and loss reduction are not mutually independent, and utilization of anti-fraud controls, and loss reduction orders are mutually independent (Singleton, and Atkinson, 2011). The study analyzed several economic crime research studies conducted by KPMG (2009), COSO (2010), Price warter house Coopers (2009), and ACFE (1996, 2002, 2004, 2006, 2008, and 2010). Their study also included surveys on fraud prevention techniques and designed anti-fraud controls and percentage of loss reduction from the implementation of it. According to the analysis, the most effective techniques for fraud loss reduction were fraud hotlines, and employee support programs, while most frequent anti-fraud controls applied were the external audit of financial statements and adherence to the code of conduct (Singleton, and Atkinson, 2011). The most effective controls were used less frequently, than the least effective ones. T. Singleton and K. E. Atkinson (2011) used two methodologies to test their hypotheses – Spearman's rank correlation coefficient, and Kendall's Tau coefficient. Both tests concluded the null hypothesis should be rejected. The study also analyzed the use of the various fraud prevention techniques according to the size of the business, testing alternative sets of hypotheses, and finding the order in which anti-fraud controls are used by large and small businesses are mutually independent (Singleton, & Atkinson, 2011). The study concluding that management, regardless of the size of the business, perceives similar cost-benefit decisions in implementing anti-fraud controls (Singleton, Atkinson, 2011). The authors suggested that some of the most effective controls need not be expensive, such as job rotation and mandatory vacations, training, fraud hotlines, and surprise audits, and should be employed. The threats to validity of the findings, as discussed by T. Singleton and K. E. Atkinson (2011), were that data used for the study was not randomly selected, the size of the organizations mostly large, and the effectiveness of anti-fraud controls was based on the ability to reduce the financial losses. These were focused not on the prevention, but detection of the existing fraud. The evaluation of the internal control methods compared with the efficiency of reducing the financial losses is important and valuable for fraud detection and prevention. The study conducted by T. Singleton and K. E. Atkinson (2011) raised valid hypotheses, research findings, and threads to validity. The authors called for additional studies performed on the subject on motivating factors for future research.

S. Robinson, J. Robertson, and M. Curtis (2011) analyzed employee reporting of financial statement fraud. The study's objective was to investigate characteristics of fraud and the likelihood of it being reported. The findings revealed that employees are less likely to report financial statement fraud than theft, immaterial financial statement discrepancies, when the fraudster has knowledge about the possibility of the whistleblowing on the matter, and only he/she is aware about the fraud. The study investigated the effects and characteristics of fraud and the organizational environment affecting employee reporting of fraud occurrences. The study identified four potential reasons for reporting of the financial statement fraud by employees: internal vs. external fraud, stable vs. unstable environment, comfortable vs. uncomfortable situation, and intentional vs. unintentional fraud (Robinson, Robertson, & Curtis, 2011).

Sang (2012) explore determinants of fraud control measures in Kenya commercial banks. Descriptive research design was used and data was collected through the use of questionnaire and analyzed using descriptive and inferential statistics. The study concluded that the effectiveness of internal control measures was affected by non-adherence to dual control aspect and lack of sufficient time to undertake the various periodic tests with delight. He recommended that comprehensive measure militating against fraud be established and enforcement of compliance of fraud mitigation methods and increase the numbers of staff in key areas.

Anjali, Amuda and Arulogun (2013) examine the evaluation of internal control system as a preventive measure of fraud in Nigerian banking sector. Data was sourced from five commercial banks audited and published financial statements and were analyzed with the use of product moment correlation coefficient and regression analysis. They find out that internal control system has significantly prevented and curbed frauds in Nigerian banks. They concluded that bad corporate governance was responsible for improper designing of internal control system which could have led to corporate performance of Nigerian banks.

Zuraidah, Mohd and Yusarina (2015) investigated fraud schemes in the banking institutions and the preventive measure to avoid severe financial loss. The study was conducted among management levels in Malaysia banking institutions, with a focus on branch managers and assistants' managers who handles mortgage loan and hire purchase loan. The study finds out that perpetrators of fraud always have insight of the procedure and had taken advantage and capitalize on the process to penetrate and commit fraud. They concluded that it is impossible to achieve zero fraud risk in the banking institutions because fraudster will always find their ways, therefore that the fundamental functions of banking institutions' staffs should be better emphasized to make their roles more visible in combating fraud.

Changsha (2010), studied the importance of Internal Control and its effectiveness to achieving organizational goal. Applying regression analysis on the experience data of 200 manufacturing listed companies in 2009, the work showed significant relationship between the value of the enterprise and Internal Control; and combining Internal Control and information technology showed that internal control plays positive role to achieving company's goal and improving enterprise value. Adedoyin (2013) studied the Internal Control measures and the detection of and prevention of fraud in banks. Using participants from the Main Street Bank Plc Aba branch in

Nigeria and applying descriptive method showed that Internal Control system was significant in detection and prevention of fraud in banks in Nigeria. Ademola (2010) studied the effect of internal control system in Nigeria public sector; a study of the Nigerian National Petroleum Corporation. Using chi square to test the hypotheses, showed that understanding the Internal Control techniques by both the management and the low level employees helps to reduce embezzlement and fraud in the corporation. Uhuru (2008) studied the effect of internal control on financial performance manufacturing firms in Kenya. The population of the study was 65 manufacturing firms registered by Ministry of Industrialization in Kenya. The sample of 20 firms were drawn using stratified random sampling technique. The findings revealed that most manufacturing firms had a control environment as one of the functionality of Internal Control of the organization that greatly impacts on the financial performance of the firm. Ewa and Udoayang (2012) carried out a study to establish the impact of internal control design on banks" ability to investigate staff fraud and staff lifestyle and fraud detection in Nigeria. Data were collected from 13 Nigerian banks using a four point Likert scale questionnaire. The study found that internal control design influences staff attitude towards fraud such that a strong internal control mechanism is deterrence to staff fraud while a weak one exposes the system to fraud and creates opportunity for staff to commit fraud. Wee Goh (2009) studied 208 firms on audit committees, board of directors and remediation of material weaknesses in internal control. He measured the effectiveness of the audit committee by its independence, financial expertise, size and meeting frequency and the effectiveness of the board by its independence, size and meeting frequency and by the duality of the chief executive officer (CEO) and chair positions (CEO duality). He also examined other factors that can affect a firm's timeliness in the remediation of material weaknesses such as the severity of material weaknesses, firm's profitability and so on. He found out that the portion of audit committee members with financial expertise is positively associated with firms" timeliness in the remediation of material weaknesses. Secondly, that a more independent board is less susceptible to the undue influence of management and more likely to exert pressure on management to remediate material weakness. Using the analytical approach and focusing on control activities and monitoring, Barra (2010) investigated the effect of penalties and other internal controls on employee's propensity to be fraudulent. Data were collected from both managerial and non-managerial employees. The result showed that the presence of the control activities, separation of duties, increases the cost of committing fraud.

Thus the benefit from committing fraud has to outweigh the cost in an environment of segregated duties for an employee to commit fraud. Further, it was established that the segregation of duties is a „least-cost" fraud deterrent for non-managerial employees, maximum penalties are the „least cost" fraud disincentives. The result suggests the effectiveness of preventive control activities such as segregation of duties is dependent on detective control. Bank fraud seriously endangers the organizational growth of the bank as it leads to bank distress. This is because fraud reduces the deposits of depositors and ultimately leads to the erosion of the capital base of banks. The cost of fraud is also usually difficult to eliminate because not all frauds are discovered. Thus the need for a very effective internal controls system so that cases of fraud can be reduced if not eliminated so as to continue to gain customers goodwill and stimulate their client's confidence all the time.

Yang, Lin and Koo (2015) investigated the impact of processed internal controls adaptation on operative performance. Analysis hypotheses derived from the model were tested using multivariate analysis on the form information and money information from Taiwanese listed corporations. The results showed that not solely internal controls ability had an effect on internal controls effectualness and operative performance, however additionally internal controls effectualness had a partial influence on operative performance.

Joseph, Albert and Byaruhanga (2012) investigated the impact of control on Fraud Detection and hindrance in District Treasuries of Kakamega County. Data collected was analysed using each descriptive and inferential statistics exploitation applied statistical Package for the scientific discipline (SPSS). Findings of the study disclosed that there was a statistically vital and positive relationship between the adequacy of control systems and fraud hindrance and detection in district treasuries in Kakamega County. The study recommends that effective and economical control policies and procedures will put an end to fraud in the banks.

Adetiloye, Olokoyo and Taiwo (2016) examined the issues of internal control *viz.*, fraud prevention in the banking industry, adopting both primary and secondary data. Primary data was used to test internal control while secondary data were employed to test fraud prevention. The main primary variables were separation of duties, monitoring, and staff qualifications while the main secondary variables are bank profit, regulation, technology and *Money supply*. In both cases regression techniques were adopted. The results show that internal control on its own is effective against fraud, but not all staff are committed to it, while the secondary data is quite supportive of the primary data but more exemplifying in that *money supply*, staff qualifications and technology were significant throughout the various dependent variables. It is also clear from the regressions that technological based fraud is significant.

Ozigbo (2015) carried out a study to examine internal control and fraud prevention in Nigerian business organizations. A survey was undertaken in some selected firms in Warri metropolis. It was discovered that internal control has a significant relationship with fraud prevention. They therefore concluded that internal control was a necessary safeguard which assures absentee owners of business that their fund is being utilized efficiently. It was recommended among others that proper accounting record should be kept at all times and authorization and approval limits of jobs and funds should be setup and communicated to all concerned interest groups.

Oguda, Odhiambo and Byaruhanga (2015) in a paper ascertained the effect of internal controls on fraud prevention and detection in district treasuries of Kakamega County. Purposive sampling method was used to select Treasury Staffs while simple random sampling method was used to select Heads of Departments to respond to the data collection instruments. The study used closed ended questionnaires designed for treasury staff and their clients and was administered by the researcher though drop and pick method. Key respondents were Senior Treasury Staffs and Heads of Departments in Kakamega County. Data collected was analysed using both descriptive and inferential statistics using Statistical Package for the Social Science(SPSS). Reliability and Validity of data collection instruments was ascertained through the test retest method. Findings of the study revealed that there was a statistically significant and positive relationship between the adequacy of internal control systems and fraud prevention and detection in district treasuries in Kakamega County.

Ayagre, Appiah-Gyamerah and Nartey (2014) in a study evaluated the control environment and monitoring activities components of Internal Control Systems of Ghanaian Banks using COSO"s principles and attributes of assessing the effectiveness of internal control systems in helping to prevent fraud. A five point Likert scale was used to measure respondent “knowledge and perception of internal controls and the bank’s internal control system effectiveness. Responses ranged from strongly disagree to strongly agree, where 1 represented strongly disagree (SD) and 5 represented strongly agree (SA). Statistical Package for Social Sciences (SPSS) was used to analyze data and presented in the form of means and standard deviations for each question and each section of the questionnaire. The study found out that, strong controls exist in the control environment and monitoring activities components of the internal control systems of banks in Ghana and this invariably assists in the deterrence of fraud.

Kakucha (2009) evaluated the level of effectiveness of internal controls of enterprises operating in Nairobi. The study was quantitative and was conducted between September 2007and June 2009 using a sample of 30 small businesses as listed in the National Social Security Fund (NSSF) Register of Kenya. Primary data was collected from the managers of the small business using interviews and examination of documents pertaining to internal controls. The study established that there are deficiencies in the systems of internal controls, with the degree of deficiencies varying from one enterprise to another. The components of internal control that were missing in most businesses surveyed were: firstly, risk analysis, and secondly lack of proper flow of information. In addition, the study established that the sample population had limited awareness of what constituted an effective system of internal control. The study also found that there is a negative relationship between the age of an enterprise and the effectiveness of its system of internal control while a negative correlation between the resources held by an enterprise and its internal control system weaknesses exists.

Amudo and Inanga (2009) also carried out a study in Uganda to evaluate the internal control systems that the regional member countries of the African Development Bank Group institute for the management of the Public Sector Projects that the Bank finances. There were 14 projects of the bank's public sector portfolio in Uganda. The 27 data received and analyzed is for eleven projects. Three projects were omitted because they were not fully operational to install effective internal control systems. The study identified the following six essential components of an effective internal control system: control environment, risk assessment, control activities, information and communications, monitoring and information technology. The outcome of the evaluation process was that some control components of effective internal control systems were lacking in those projects. These rendered the control structures ineffective.

Rae and Subramanian (2008) found the quality of internal control procedures has moderating effect on the relationship between perceptions of organizational justice and fraud. The authors suggest that strategies relating to fraud need to focus on organizational factors such as work environment, internal control activities, and training. The importance of internal control mechanisms in curbing fraud-bent behavior, specifically employee fraud, has been investigated. Holmes et al (2002) found that whenever top management firmly supports internal control, internal perpetrators and fraud were less likely to occur. Another study found that access to various control mechanism alone does not curb losses due to fraud (Holtfreter, 2004). Romar and Moberg (2003) conducted a case study that showed the following could have contributed to WorldCom scandal in 2002: unrealistic growth targets when expectations were low, management philosophy was aggressive; inadequate assessment of internal and external factors, and objectives before setting aggressive targets; poor segregation of duties; access to data entry and manipulation was not properly segregated and there was a lack of stringent monitoring of the internal control system and therefore quality of the controls around the posting of journal entries to the general ledger was not identified as weak.

Kabir (2002), investigates the problem of corporate failures as a result of weak internal controls system, which brings about distresses, collapse and withdrawal of licenses of banks by regulatory authorities in Nigeria, thereby bringing untold hardship to all stakeholders. The researcher used a sample of seven banks, systematically selected from a population of twenty-eight banks whose shares were traded on the floor of the Nigerian Stock exchange as at 22nd August 2003. Questionnaires were administered on 420 respondents, 60 from each of the seven banks, made-up of 20 from the management staff, 20 from audit staff and 20 from operation/banking staff. Out of this number, only 303 questionnaires were completed and returned. The primary data collected through the administration of questionnaires was analyzed using simple percentages and chi-square test (x2), while the secondary data collected from the annual report and accounts of some of the sample banks was analyzed using spearman rank order correlation and t statistics. Thus it was found that effectiveness or otherwise of internal control system can make or mar corporate survival of banks in Nigeria. The research work concluded that internal control system is the responsibility of everybody in an organization and as such every staff must be aware of his role in its process and fully engaged in it. Holmes et al (2002) found that whenever top management firmly supports internal control, internal perpetrators and fraud were less likely to occur. Another study found that access to various control mechanism alone does not curb losses due to fraud (Holtfreter, 2004).

2.8.1. Conceptual Framework

The aim of conceptual framework is to catch the association among the predictor variables and outcome variable. The predictor variables comprise, control environment, control activities, risk assessment, information and communication, and monitoring activities. The outcome variable is fraud prevention.

Independent Variables   Dependent variable

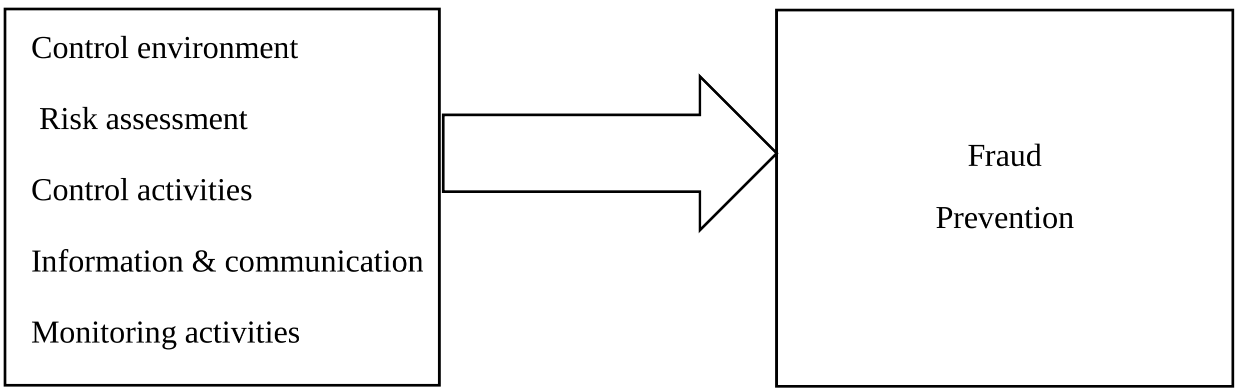

Fig. 1 Conceptual Framework

2.8.2. Indicator variables and their measurements

A critical juncture between scientific theory and application, measurement can be defined as a process through which we describe, explain, and predict the phenomena and constructs of our daily existence (Kaplan, 1964; Pedhazur & Schmelkin, 1991). Variables in a research study typically must be operationalized and quantified before they can be properly studied. An operational definition takes a variable from the theoretical or abstract to the concrete by defining the variable in the specific terms of the actual procedures used by the researcher to measure or manipulate the variable. Ordinal scale is one of nonmetric measurement scale. It measures a variable in terms of both identity and magnitude. It allows for the categorization of a variable and its relative magnitude. Variables can be ranked in relation to the amount of the attribute possessed. In simpler terms, ordinal scales represent an ordering of variables. Likert scale is one of ordinal scales (Kerlinger, 1992). This study measures all of its variables using ordinal scale modality. Respondents are asked to rank Likert items from available strongly disagree to strongly agree options. The following table highlights indicator variables and their measurement scales.

Table2. Operationalization of Variables

Variable	**Indicators**	**Measurement scale**
Control environment	-Existence of rule & regulations, -The bank commitment for Integrity and ethical values, -Staffs perceive regulations and guidelines, -Staff performs as per rules and regulations, -Reasonable and effective internal audit.	Ordinal
Risk assessment	-Existence of strategy for identifying and mitigating risks, - A system to respond for risks, -Involvement of control staffs in risk assessment.	Ordinal
Control activities	-Segregation of Duties, -Source document maintenance, - Up-to-date asset register, - Reconciliation, - Procurement and disposal of assets procedure.	Ordinal
Information and communication	-Obtain & generate Information's to all stakeholders, -Transactions record and classification, - Clear communication for the right to access,	Ordinal
Monitoring activities	- Monitoring activities to reduce fraud, - Monitoring system to achieve the bank objectives, - Monitoring to determine the effectiveness of controls, - Appropriate actions for control findings.	Ordinal
Fraud prevention	- Anti-fraud policy - Fraud training -No sharing of password - Approving limit	Ordinal

2.9. Conclusion

The destruction by the fraud, occurring to the overall banking sector is aptly endless and needs serious attention. As clearly shown in the literature review, there was a research gap in identifying consistent findings about the effect of internal control on fraud prevention. There were conflicting findings among scholars. That is where the idea of this study has born.

CHAPTER THREE

METHODOLOGIES AND PROCEDURES

3.1. Introduction

This chapter comprises; research design and methodologies, target population, sources of data and collection method, and methods of data analysis.

3.2. Research Design and Approaches

The main objective of this study was, investigating the effect of internal control on fraud prevention in commercial banks of Ethiopia. Explanatory research design adopted for this study. The primary purpose of explanatory research is to explain the aspects of the study in detailed manner (Robson, 2002). This research design used to explain the effects of predictor variables on outcome variable. This research design also aided the researcher to explain the characteristics of variables, gather, analyze, summarize and interpret information. The study trailed quantitative approaches. Correspondingly, predictive analytics are used in analyzing the data.

3.3. Target population

Out of 18 commercial banks in Ethiopia, all of them are included in this census. The target respondents are key informants whom are directors, managers, senior internal control officers, senior risk and compliance officers at the head office level selected via judgmental sampling method. This sampling method involves purposive or deliberate selection of particular units of the universe for constituting a sample which represents the universe (Kothari,2004). These respondents are considered appropriate because all internal control and fraud related reports from every single branches are directly reported to these units and because they have access to vital information, experience and professional skills that was necessary and relevant for this study. Due to their position of responsibility they had a better understanding of Internal control and fraud.

3.4. Source of Data and Collection Method

To achieve its objective this study obtained primary data. The primary data was collected from the target respondents through questionnaire. Questionnaires are the easiest way to collect data in a cost-effective and time consuming manner Gilbert, N (1993). That was the reason why the study chose this kind of data collection method. The researcher formulated a list of questions based on the research objectives to ask information from the target respondents. The research questionnaire contains Likert items on internal control and fraud prevention; against which the respondents are asked to indicate their level of agreement upon a five point Likert scale (where 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree and 1 = strongly disagree). 5 point Likert scale is a widely used scale that provides intermediate advantage between scales above and below 5 point Likert scales. It delivers deeper insight to what respondents think comparing to 3 scales plus it can be analyzed relatively in easy way comparing to scales that exceed 5(Newson, 2021). The questionnaires designed in a manner that the respondents are required to tick one from the choices that better fit the questions provided according to their valuation.

The questionnaire has two parts; part 1 asks educational background, and working experience. part 2 require information on the effect of internal control via indicators of internal controls and fraud prevention.

3.5. Instrument Validity Test

Standardized questionnaire items from a research papers with similar topics are collected and reviewed by the research advisor for face validity. Following the data collection, responses are cleaned to reject inconsistent respondents for negatively phrased questions. If respondents have responded carefully, their answers to questions that are phrased negatively should be consistent with their answers to similar questions that are phrased positively. There are two negatively phrased items in the instrument and 14 respondents were rejected because they failed to respond accordingly. Consequently, 155 respondents are included in the census for a validity test. A variable validity test is used to measure whether or not a questionnaire is valid. Table 3 shows that all variables have r count value greater than the r table is 0.1593, so it is possible to say that the items in question are valid. The items in the questionnaire are 25 with summary of output as shown in the next table:

Table 3 Validity test

Variable	Item No	Pearson's r	Critical Value	Validity
Fraud Prevention	1	0.664	0.1593	Valid
	2	0.597		Valid
	3	0.653		Valid
	4	0.566		Valid
	5	0.681		Valid
Control environment	6	0.632	0.1593	Valid
	7	0.554		Valid
	8	0.560		Valid
	9	0.603		Valid
	10	0.627		Valid
	11	0.632		Valid
Risk assessment	12	0.633	0.1593	Valid
	13	0.546		Valid
	14	0.518		Valid
Control activities	15	0.557	0.1593	Valid
	16	0.550		Valid
	17	0.548		Valid
	18	0.612		Valid
Information and communication	19	0.522	0.1593	Valid
	20	0.549		Valid
	21	0.627		Valid
Monitoring activities	22	0.647	0.1593	Valid
	23	0.547		Valid
	24	0.569		Valid
	25	0.606		Valid

3.6. Instrument Reliability Test

Reliability of an instrument shows how stable and consistent the instrument is within the given context. It is the degree in which an assessment tool produces a stable and consistent result. The reliability of a research instrument can be assessed for consistency using the Cronbach's alpha test. In this test, the coefficient ranges from 0 to 1.00. In determining the reliability of the research instrument, the Cronbach's alpha test was administered to measure the reliability of the underlying dimensions of the research instrument. The data output indicate that data was well spread with Cronbach's alpha of greater than 0.70. This indicates that the question items in this data can be said to be reliable.

Table. 4 Reliability test

Variable	Cronbach's Alpha	Reliability
Fraud Prevention	0.793	Reliable
Control environment	0.773	Reliable
Risk assessment	0.757	Reliable
Information & communication	0.727	Reliable
Monitoring activities	0.760	Reliable

3.7. Method of Data Analysis

The study used ordinal logistic regression model to analyze the data. It is frequently used method as it enables to ordinal variables to be modeled. The principle of the ordinal logit model is to link the cumulative probability of a level to explanatory variables(Creswell,2009). The reason for choosing this kind of analysis was that the dependent variable is ordinal. The dataset for the dependent variable has five ranked level from strongly disagree to strongly agree. Ordinal Logistic Regression takes account of this order and return the contribution information of each independent variables. There are other kinds of models that can fit this kind of dataset but, they do not take account of the ranking information in the dependent variable. Therefore, Ordinal regression model was an appropriate procedure for explaining the effect of several numbers of categorical or continuous explanatory variables on the probability of occurrences of ordinal outcome variable (Peng et al.,2002). The information in the questionnaire provided by the respondents are analyzed through this method using Statistical Package for Social Sciences (SPSS) version 26. software package. Based on this discussion of findings are presented.

3.8. Operational Model

The ordinal regression model used to find the statistically significant effect of internal control on fraud prevention in commercial banks of Ethiopia was depicted here below:

$log\frac{P(Y\leq j)}{P(Y>j)}$= logit (P (Y≤ j)) $=\beta_{j0}-\eta_1 x_1-\ldots-\eta_p x_p$

Let Y be fraud prevention an ordinal outcome with 5 categories. i.e. Strongly disagree to strongly agree as mentioned earlier.

Then (P (Y≤ j)) is the cumulative probability of Y less than or equal to 5.

X represents, independent variables; Control environment, Risk assessment, Control activities, Information & communication, and Monitoring activities.

β_0, is the intercept.

** ** Measurement scale- Ordinal as discussed in chapter-2*

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, INTERPRETATION AND DISCUSSION

In order to investigate the effect of internal control on fraud prevention, ordinal logistic regression/ordinal regression analysis was conducted. Regression analysis was used to produce the model best expressing the hypothesized effect of explanatory variables; Control environment, Risk Assessment, Control Activities, Information and Communication, Monitoring Activities, and the outcome variable Fraud Prevention. A total of 155 individuals, whom are directors, managers, senior internal control officers, risk and compliance officers, and auditors are responded to the census with 100% response rate. The instrument includes five scales to measure the effect of explanatory variables on outcome variable. In addition, composite scale scores were created by taking a raw median of all items to assemble indicators for both dependent and independent variables. It is believed that median is the most appropriate method to measure central tendency for Likert scale.

4.1. Respondents Background

The research sought to determine the target respondents level of education and work experience at their bank. Findings are presented and discussed as follows;

Table 5. Level of Education

Level of Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	B.A	79	51.0	51.0	51.0
	M.Sc./MA	76	49.0	49.0	100.0
	Total	155	100.0	100.0	

The result in the above table shows that, the respondents were a well-educated and qualified. This indicates the level of literacy and ability to understand the idea of internal controls and fraud prevention at their work place in addition to their work exposure. This further strengthen the trustworthiness of their responses.

4.2. Work Experience

Respondents were asked to answer how long they had served the bank. The objective of this question was to assess the length of service years and their exposure for internal control and fraud prevention. Findings of responses are presented in next Figure;

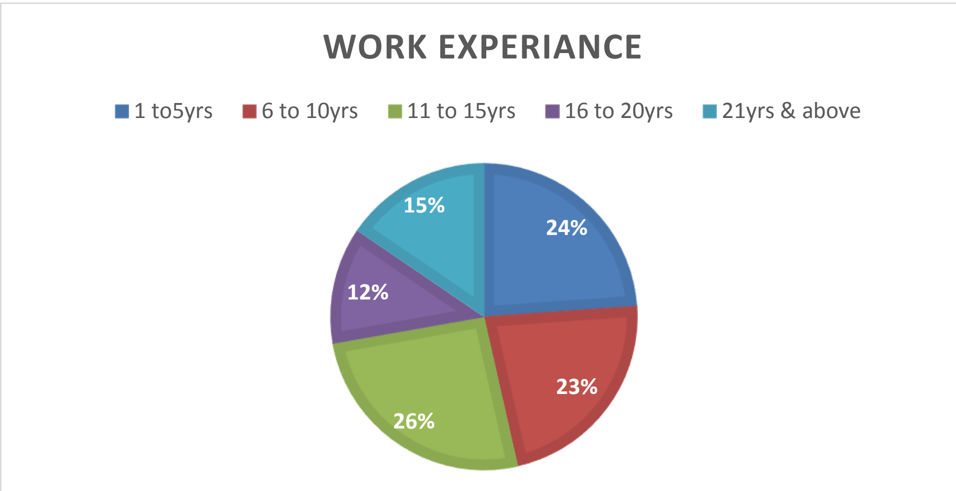

Figure 2. Work experience.

Results in the above figure indicates that most respondents had worked for a longer period of time in their bank and that they were able to respond accurately to the questions in relations to internal control and fraud prevention in their bank. It was appropriate to conclude that the information they gave were reliable.

4.3. Ordinal Logistic Regression Analysis.

The next step was fitting the ordinal regression full model with all five explanatory variables using SPSS (IBM 26). The results of fit statistics and logit coefficients were also interpreted and discussed. Before proceeding to this step, the study tested the validity of ordinal logistic regression assumptions. In detail, the multi-collinearity test and proportional odds assumption were examined.

4.4. Test of Ordinal logistic Regression Assumptions.

The first assumption of ordinal logistic regression requires the dependent variable to be ordinal. The outcome variable of this study was ordinal; that includes five point Likert scale with strongly disagree, disagree, neutral, agree, and strongly agree response options. The second assumption states that, one or more of the independent variables is either continuous, categorical or ordinal. In this case this study has ordinal independent variables.

4.5. Multi-collinearity Test

The third assumption needs that there is no perfect multi-collinearity between independent variables. SPSS checks this assumption through variance inflation factor (VIF) and tolerance. If the VIF is greater than 10 and the tolerance is less than 0.10, there is a high multi-collinearity between independent variables. As presented in the next table all VIF values are much less than 10 and tolerance is also much greater 0.10. Therefore, the third assumption was fitting.

Table 6. Collinearity Test.

Coefficients[a]								
Model				Standardized Coefficients	t	Sig.	Collinearity Statistics	
				Beta			Tolerance	VIF
1	(Constant)	0.482	0.255		1.893	0.060		
	ContEnvt	0.187	0.075	0.193	2.489	0.014	0.625	1.601
	RiskAsses	0.222	0.069	0.231	3.203	0.002	0.723	1.382
	ContAct	0.138	0.076	0.142	1.831	0.069	0.626	1.598
	Inform&Comm	0.156	0.070	0.174	2.227	0.027	0.615	1.626
	Monitoring	0.134	0.075	0.142	1.796	0.075	0.602	1.662
	a. Dependent Variable: Fraud Prevention							

4.6. Test of Parallel line (Proportion odds)

The last assumption is, assumption of proportional odds. SPSS provides the results of the test of parallel line (Proportional Odds) for the full model with five predictors. This test compares the estimated model with one set of coefficients for all categories to a model with a separate set of coefficients for each category. The table below presents test of proportional odds or test of parallel line.

Table 5. Test of proportional odds.

Test of Parallel Lines

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	526.810			
General	500.680	26.130	35	.861

The assumption that the parameters are the same for all categories is realistic in the result provided. Thus, the proportional odds assumptions for the model was upheld or the assumption was not violated.

4.7. Model Fitting Information

Table 6. Model fitting information

Model	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	611.336			
Final	526.810	84.526	5	.000

n the above table, the log likelihood ratio Chi-Square test with 5 degree of freedom, indicates that the full model with five predictors provides a better fit than the null model with no independent variables in predicting cumulative probability for Fraud Prevention. The Chi-square statistic is the difference between the -2 log-likelihoods of the null and final models. Since the significance level of the test is less than 0.05, we can conclude the final model is outperforming the null.

Table 7. Goodness-of-fit

Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	1000.995	1099	0.984
Deviance	506.696	1099	1.000

The non-significant Pearson Chi Square test tells us the sample data fit a distribution from a population with a normal distribution. As the probability value much exceeds the significance value, the study made inferences about the observed data to be highly related with predicted data.

Table 8. Pseudo R-Square

Pseudo R-Square	
Cox and Snell	.420
Nagelkerke	.428
McFadden	.133

Compared with the null-model all Pseudo R Square statistics of the full-model shows improvement. Even though there is no hard and fast information about a good r^2 value for regression analysis, the adjusted and widely used Nagelkerke's r^2 was within the acceptable range in human behavior prediction.

4.8. Test of Hypothesis

Based on information provided in the parameter estimates table, effect of all five independent variables were explained using coefficient exponent B, and hypothesis were tested using their respective probability values.

Table 9. Parameter Estimates

Parameter Estimates											
Parameter			Std. Error	95% Wald Con Inter		Hypothes is Test			Exp(B)	95% Wald Confidence Interval for Exp(B)	
		B		Lower	Upper	Wald Chi-Square	df	Sig.		Lower	Upper
Threshold	[Fraud Prev=1]	1.293	0.8297	-0.333	2.919	2.430	1	0.119	3.645	0.717	18.531
	[Fraud Prev=2]	4.399	0.6958	3.036	5.763	39.974	1	0.000	81.399	20.813	318.356
	[Fraud Prev=3]	6.416	0.7863	4.875	7.957	66.583	1	0.000	611.559	130.962	2855.817
	[Fraud Prev=4]	8.721	0.8969	6.963	10.479	94.544	1	0.000	6131.507	1057.052	35566.253
	[Fraud Prev=5]	10.287	0.9840	8.359	12.216	109.302	1	0.000	29353.017	4266.750	201933.443
ContEnvt		0.380	0.1930	0.002	0.759	3.886	1	0.049	1.463	1.002	2.136
RiskAsses		0.483	0.1677	0.154	0.811	8.280	1	0.004	1.620	1.166	2.251
ContActiv		0.392	0.1902	0.019	0.765	4.250	1	0.039	1.480	1.019	2.148
Info&Com		0.350	0.1739	0.009	0.691	4.054	1	0.044	1.419	1.009	1.996
Monitoring		0.342	0.1734	0.002	0.682	3.890	1	0.049	1.408	1.002	1.978
(Scale)		1[a]									

Dependent Variable: Fraud Prevention

4.8.1. Effect of Control Environment on Fraud Prevention

For the control environment variable, its coefficient indicates it has effect on fraud Prevention. Hence, for every one-unit increase in the control environment score, the probability of the Ethiopian Commercial Banks being in a high level of fraud Prevention would increase by 0.380 while the other variables in the model are held constant. The effect of control environment on fraud Prevention remains significant given a p-value lower than 0.05. Consequently, control environment has significant effect in fraud Prevention among Ethiopian Commercial Banks.

Therefore, the study rejected the null hypothesis that control environment has no significant effect on fraud prevention in commercial banks of Ethiopia. As a result, alternative hypothesis was accepted that control environment has significant effect on fraud prevention in commercial banks of Ethiopia. This observation shows that the control environment established by Ethiopian Commercial Banks prevent frauds. This result is in agreement with findings of Amudo and Inanga (2009) which indicated that control environment has significant effect on fraud prevention. The finding is also consistent with the existing theories about control environment. Mainly, the existence of carefully designed rule & regulations, manager's commitment to demonstrate integrity and ethical values, employee's performance to their responsibility as per the regulations and guidelines, the existence of reasonable assurance that all staffs perceive regulations and guidelines, and the existence of reasonable and effective internal audit are ensuring protection of resources against fraud is real.

4.8.2. Effect of Risk Assessment on Fraud Prevention

Risk assessment also has effect on fraud Prevention. That is, for every one-unit increase in the risk assessment variable, the probability of Ethiopian Commercial Banks being in a high level of fraud Prevention variable would increase by 0.483 given the effects of other predictors held constant. The effect of risk assessment on fraud Prevention remains significant given a p-value lower than 0.05. Thus, risk assessment has significant effect in fraud Prevention among Ethiopian Commercial Banks.

Therefore, the study rejected the null hypothesis risk assessment has no significant effect on fraud prevention in commercial banks of Ethiopia. Therefore, alternative hypothesis was accepted that risk assessment has significant effect on fraud prevention in commercial banks of

Ethiopia. This observation also shows that the risk assessment in effect by Ethiopian Commercial Banks prevent frauds.

This finding is related with the result of Fikru Werku (2018), which showed that risk assessment has significant effect on fraud prevention. The result is stable with the available theory in the field. That is, the presence of appropriate strategy of identifying and mitigating risks, the presence of effective system to offer appropriate response to risks, and the involvement of internal control staff during risk assessment implementation reduces the occurrence of risk is true.

4.8.3. Effect of Control Activities on Fraud Prevention

The positive regression coefficient for control activities tells us it has effect on fraud Prevention. For that reason, for every one-unit increase in the control activities variable, the probability of the Ethiopian Commercial Banks being high level of fraud Prevention variable would increase by 0.392 while the other variables in the model are held constant. The effect of control activities on fraud Prevention remains significant given a p-value lower than 0.05. Aa a consequence, control activities have significant effect in fraud Prevention in Ethiopian Commercial Banks.

So, the study rejected the null hypothesis that control activities has no significant effect on fraud prevention in commercial banks of Ethiopia. As regards, alternative hypothesis was accepted that control activities have significant effect on fraud prevention in commercial banks of Ethiopia. This observation confirms that the control activities engaged by Ethiopian Commercial Banks detect and prevent frauds.

The finding is consistent with Ayagre, Appiah-Gyamerah and Nartey (2014) previous work, that control activities has significant effect on fraud prevention. Segregation of duties among different employees, appropriate source document maintenance for transactions, up-to-date physical asset register, and sufficiently designed reconciliation system are confirmed that they prevent frauds effectively.

4.8.4. Effect of Information and Communication on Fraud Prevention

For information and communication variable, its coefficient shows, it has effect on fraud Prevention. That is, for every one-unit increase in the information and communication variable, the probability of the Ethiopian Commercial Banks being in high level of fraud Prevention variable would increase by 0.350 while the other variables in the model are held constant. The effect of information and communication on fraud Prevention remains significant given a p-value lower than 0.05. Therefore, information and communication have significant effect in fraud Prevention in Ethiopian Commercial Banks.

So, the study rejected the null hypothesis that information and communication has no significant effect on fraud prevention in commercial banks of Ethiopia. Respectively, alternative hypothesis was accepted that information and communication has significant effect on fraud prevention in commercial banks of Ethiopia. This observation approves that the information and communication systemized by Ethiopian Commercial Banks prevent frauds.

This result is in agreement with findings of Tunji (2013) which indicated that information and communication has significant effect on fraud prevention. Obtaining and generating relevant control information to all stakeholders, promptly recording and classifying transactions to provide quality information, clearly communicating officer 's responsibility and the right to access all are relevant to prevent fraud prevention.

4.8.5. Effect of Monitoring Activities on Fraud Prevention

Similarly, monitoring activities has effect on fraud Prevention. In other words, for every one-unit increase in the monitoring activities variable, the probability of the Ethiopian Commercial Banks being in fraud Prevention variable would increase by 0.342 given all other variables constant. The effect of monitoring activities on fraud Prevention remains significant by having a p-value lower than 0.05. Thus, monitoring activities have significant effect in fraud Prevention in Ethiopian Commercial Banks.

That being so, the study rejected the null hypothesis that monitoring activities has no significant effect on fraud prevention in commercial banks of Ethiopia. Hence, alternative hypothesis was accepted that monitoring activities has significant effect on fraud prevention in commercial banks of Ethiopia. This observation authorizes that the monitoring activities practiced by Ethiopian Commercial Banks detect and prevent frauds.

This finding is related with the result of IFAC (2012), which showed that monitoring has significant effect on fraud prevention. The result is stable with the available theory that states, the prevalence of monitoring activities, monitoring the internal control system to achieve the bank objectives, monitoring to determine whether controls under the bank are effective, and application of appropriate actions based on control findings and recommendations to reduce the occurrence of fraud.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1. Summary of the research and Major Findings

The main objective of this study was to analyze the effect of internal control on fraud prevention in commercial banks of Ethiopian. To achieve this objective, the study developed research objectives and hypotheses based on components of internal controls. The study has also developed conceptual and operationalization frameworks. These helped in developing questionnaires to gather data. Explanatory research design was adopted for this study. The census used all commercial banks in Ethiopia. Purposive sampling technique was used based on the total year of experience in the industry and their access for vital information. Quantitative data was analyzed using ordinal logistics regression and the data was coded and entered into Statistical Packages for Social Scientists (SPSS Version 20.0). The following is the summary of the findings.

There is no problem of multi-collinearity between variables in the model, thus enhanced the reliability for regression analysis. Hence all the variables were retained for use in the estimations.

The study examined and established a significant effect of internal control on fraud prevention. This effect was observed through the components of internal control and fraud prevention. The components of internal control (control environment, risk assessment, information and communication and monitoring) were linked to fraud prevention and tested using Wald chi square test. Details of the results from the test showed that all components of internal control jointly have significant effect on fraud prevention. That is, a single unit increase in all of internal control variables results the probability of the Ethiopian Commercial Banks to be in a high level of fraud Prevention while the other variables in the model are held constant.

95% confidence interval was considered or the regression analysis was undertaken at 5% significance level. The criteria for comparing whether the predictor variables were significant in the model was through comparing the corresponding probability value obtained and α=0.05. All the independent variables have a significance of less than 5%. This is an indication that all variables are statistically significant with the fraud prevention. Summery, of the major findings are presented as follows;

- Control environment has significant effect on fraud prevention in commercial banks of Ethiopia having a coefficient value of 0.380 and a p value of 0.049.
- Risk assessment has significant effect on fraud prevention in commercial banks of Ethiopia having a coefficient value of 0.483 and a p value of 0.004.
- Control activities have significant effect on fraud prevention in commercial banks of Ethiopia having a coefficient value of 0.392 and a p value of 0.039.
- Information and communication has significant effect on fraud prevention in commercial banks of Ethiopia having a coefficient value of 0.350 and a p value of 0.044.
- Monitoring activities has significant effect on fraud prevention in commercial banks of Ethiopia having a coefficient value of 0.342 and a p value of 0.049.
- The full model with five predictors provided a better fit than the null model with no independent variables in predicting cumulative probability for Fraud prevention in commercial banks of Ethiopia, evidenced by the log likelihood ratio Chi-Square test with 5 degree of freedom, LR $\chi^2(1) = 84.526$, p= .000.

5.2. Conclusion

The growing banking sector fraud around the world plus lack of understanding about the appropriate research methodology and the conflicting findings about the effect of internal control on fraud prevention necessitated this study. The general aim of the study was to analyze the effect of internal control on fraud prevention in commercial banks of Ethiopia. The study believes this objective was achieved. Additionally, data was gathered based on the research question from all commercial banks in Ethiopia, and analyzed with ordinal logistics regression analysis by using SPSS (V.26). Similarly, assumptions and hypothesis' were tasted using the same software and the result indicated that there was no multi-collinearity problem plus, proportional odds assumptions were upheld for all independent variables.

Internal control at commercial banks of Ethiopia has a positive and important effect on fraud prevention. The effect shown by the coefficient of regression is positive, which means that the better internal control in the bank, the better fraud prevention is. Or, in other words, internal control will enhance the company's fraud prevention. This study shows that the fraud prevention system implemented in commercial banks of Ethiopia demonstrates a positive step towards reducing the space for fraud in the banking sector. the internal control variable uses several indicators, namely, control environment first. This indicator has a coefficient value of 0.380. This implies that it has effect on fraud prevention. The Risk assessment is the second indicator. This indicator has also a coefficient value of 0.483. Risk assessment variables showed significant effect on banks fraud prevention. This means effective risk assessment can help banks in the prevention of fraud. Likewise, control activities the third indicator has 0.392 coefficient value. This implies that the control activities taken by the management of banks are effective in the prevention of fraud. Information and communication has important effect on fraud prevention having a coefficient value of 0.350. The final indicator monitoring activities has also effect on fraud prevention with a coefficient value of 0.342.

The results indicate that the all independent variables have a significant impact on the banks fraud prevention. This means that all hypothesis in this study can be proven statistically. Consequently, results from the test showed that all internal control variables jointly have significant effect on fraud prevention.

From this findings, the study concluded that internal control has significant effect on fraud Prevention in commercial banks of Ethiopia. The study believes that, this finding will benefit the academic world by providing evidence from Ethiopian banking sector about the effect of internal controls on fraud prevention. The study will also help the banking industry in the fight against fraud by proposing actions to be taken. The limitation of the study is that it focused on the banking industry only and primary data was collected from selected senior officers and managers at head office level only. Even senior officers at the branch level were not included in the study.

5.3. Recommendation

Future research studies should be broader involving other institutions, and both employees and managers from head office and branch level. Even though, control environment variables have a positive effect on fraud prevention, the study still recommends that banks should reward acts of moral high standards by either remunerating the high fliers well, recognizing them or promoting them. The employees who violate the code of conduct should be punished to deter others from doing the same. Reward those who adhere to moral standards will encourage employees to continue the right thing and will reduces cases of fraud. Punishing the wrongdoers will have a deterrent effect which will discourage others from committing fraud. The authorities and management should introduce offices that will be responsible for ensuring that laws and regulations are followed by the banks. The office should not replace the already existing regulatory bodies but should be able to supplement these bodies. The authorities should also come up with the policy document that can be able seal the loopholes in accounting standards and other regulations that are used by the banks.

Nevertheless, it was found that risk assessment has significant effect on fraud prevention, it is recommended; identification, analysis, estimation and mitigation activities for risks should be stringent to conceal all loopholes both in laws and organization policies that may be manipulated by fraudsters. Additionally, they should understand that having effective internal control system without incorporating employees is difficult. Therefore, fraud training must be provided to all employees and there must be a hotline for whistleblowers. The control activities also had significant effect on fraud prevention. The organizations should improve on unannounced or surprise checks to complement and support internal audit. This will deter employees from engaging in teaming and landing form of fraud as they will not be able to know time for surprise checks to clean their accounts. The employees should be rotated regularly and should be engaged in peer review of other employees' jobs in different departments. Similarly, they should follow up duties are segregated, suspense accounts are reconciled periodically.

Communication of information is also an important part of preventing fraud. In the study it was found that communication of information has significant effect on fraud prevention. It is recommended that the organizations should shorten the channels of communication further to ensure that the information on fraud reaches the appropriate body or personnel on time. The study findings showed that the monitoring of activities had significant effect of fraud prevention. The study recommends that the monitoring activities to be evaluated and revised regularly to improve on capability of addressing sophisticated nature of current fraud perpetration and to check their implementation and to incorporate supplementary rules considering new findings from periodic fraud reports.

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Questionaries' for the investigation of Effect of Internal Control on Fraud prevention in Commercial Banks of Ethiopian.

The objective of this study is to investigate the effect of Internal Control on fraud prevention in commercial banks of Ethiopia. To supplement the data obtained from different sources, the researcher looks to gather relevant information from a sample of your bank using self-developed questions. Participation in this study is completely voluntary, the questionnaire results will be recorded anonymously and strict confidentiality will be maintained.

□□**Part One-Demographic Information**

1. Education- Diploma □□B.A □□M.A/M.S.C □□PHD □

2. Year of service in the bank

□1 –5 yrs.□6 – 10 yrs.□11 – 15 yrs.□16 – 20 yrs.□21yrs. &above

Part 2- The Effect of Internal Control on fraud Prevention.

No	**1. Fraud Prevention**	**Strongly Disagree** 1	**Disagree** 2	**Neutral** 3	**Agree** 4	**Strongly Agree** 5
1	My Bank has effective anti-fraud policy.					
2	My Bank provides fraud training for employees.					
3	There is no sharing of user access password among employees.					
4	There is a limit for approving authorities.					
5	My Bank has less effective anti-fraud policy.					

	2. Control Environment	**Strongly Disagree** 1	**Disagree** 2	**Neutral** 3	**Agree** 4	**Strongly Agree** 5
6	There are carefully designed regulations to ensure protection of resources against fraud.					
7	My bank managers are committed to demonstrate integrity and ethical values.					
8	All employees in charge of the bank operations perform their responsibility as per the guidelines.					
9	There is reasonable assurance that all staffs perceive rules and regulations.					
10	There is effective internal audit in my bank.					
11	There are no rules that ensure protection of resources against fraud.					
	3. Risk assessment	**Strongly Disagree** 1	**Disagree** 2	**Neutral** 3	**Agree** 4	**Strongly Agree** 5
12	The bank has designed an appropriate strategy of identifying risks.					
13	The bank designed a system to offer appropriate response to risks					
14	Involvement of the internal control staff during risk assessment implementation reduces the occurrence of risk.					
	4. Control activities	**Strongly Disagree** 1	**Disagree** 2	**Neutral** 3	**Agree** 4	**Strongly Agree** 5
15	Duties are segregated among different employees to minimize fraud.					
16	Appropriate source documents are maintained for transactions.					
17	There is an up-to-date physical asset register.					
18	There is sufficiently designed reconciliation system that used in a regular basis.					

	5. Information and communication	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
19	My bank generates relevant control information to all stakeholders.					
20	Transactions are promptly recorded to provide quality information.					
21	The officer 's responsibilities are clearly communicated.					
	6. Monitoring activities	**Strongly Disagree** 1	**Disagree** 2	**Neutral** 3	**Agree** 4	**Strongly Agree** 5
22	The bank has monitoring activities to reduce the occurrence of fraud.					
23	Monitoring the internal control system of the bank is important to achieve the bank objectives.					
24	Monitoring activities helps to determine whether controls under the bank are effective.					
25	Appropriate actions are applied based on control findings.					

Item 1 to 6 and 10 to 11(Samuel et al, 2020), Item 7 to 9 & 12 to 25 (Fikru, 2018)

My bank applies the following additional measures to prevent and detect fraud.

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_______________THANK YOU FOR YOUR COOPERATION_______________________