



**ST. MARY'S UNIVERSITY  
SCHOOL OF GRADUATE STUDIES**

**THE EFFECTIVENESS OF INTERNAL CONTROL SYSTEM  
FOR DETECTION AND PREVENTION OF FRAUD THE  
CASE OF SELECTED COMMERCIAL BANKS IN ETHIOPIA**

**BY:  
WEBALEM MULUGETA**

**JUNE, 2021  
ADDIS ABABA, ETHIOPIA**

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**A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY, SCHOOL OF  
GRADUATE STUDIES IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENTS FOR THE MASTERS OF ART DEGREE IN MASTER  
OF BUSINESS ADMINISTRATION IN ACCOUNTING AND FINANCE**

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## **DECLARATION**

I, the undersigned, declared that this Thesis is my original work; prepared under the guidance of Misrak Tesfaye (asst. prof.). All the sources of materials used for this thesis have dully acknowledged. I further confirmed that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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## **ENDORSEMENT**

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

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**Misrak Tesfaye (Asst. Prof.)**

**June, 2021**

**Addis Ababa, Ethiopia**

## **ACKNOWLEDGEMENTS**

First and foremost, I would like to thank the almighty GOD for the strength, guidance and abundant grace who made everything possible right from the start up to the end. First I would like to express my thanks and appreciation to my Advisor Misrak Tesfaye (Assistant professor), for his guidance, continual advice, patience, vast knowledge, and critical review of the thesis. It has helped me to improve the quality of the report and compilation of my thesis work. It is also my pleasure to express my deepest gratitude for my husband Temu and my beloved son's Mihret & Yohannes for an immense help throughout my life and who make me strong throughout my study on all matters. The completion of this study would have not been realized without the help of others so I would like to take this opportunity to thank my family and my friends who helped me with this thesis.

## Contents

ACKNOWLEDGEMENTS .....	i
List of table .....	v
List of Figures .....	vi
List of Acronyms .....	vii
Abstract .....	viii
1.1 Background of the study.....	1
1.2 Statement of the problems.....	3
1.3 Research Questions .....	5
1.4 Research Objectives .....	5
1.4.1 General Objectives of the study.....	5
1.4.2 Specific Objectives .....	5
1.5 Significance of the study.....	5
1.6 Scope of the study .....	6
1.7 Organization of the paper .....	6
LITERATURE REVIEW.....	7
2.1 Theoretical Review.....	7
2.1.1 Concepts of Fraud.....	7
2.1.2 Classification of Fraud.....	9
2.1.3 The Fraud Management Lifecycle.....	9
2.2.4 Causes of bank frauds .....	11
2.2.5 Measures of fraud prevention in banks.....	11
2.1.6 Internal control system.....	12
2.1.7 Objectives and Role of the Internal Control .....	12
2.1.8 Internal Control System Theory .....	13
2.1.9 Components of internal control system .....	14
2. Risk Assessment.....	15
3. Control Activities .....	16
4. Information and Communication .....	16
2.2 Review of Empirical Studies .....	17
2.2.1 International Studies .....	18

2.2.2 Local Studies .....	20
2.3 Research Gap Analysis .....	21
2.4 Conceptual framework .....	22
RESEARCH METHODOLOGY .....	23
3.1 Research Design .....	23
3.2 Research Approach.....	23
3.3 Target Population of the study .....	23
3.4 Data Collection Methods.....	25
3.5 Data Analysis .....	25
3.5.1 Descriptive Analysis .....	25
3.5.2 Econometrics Analysis .....	26
3.6 Model Specification .....	26
3.7 Validity .....	27
3.8 Reliability .....	27
CHAPTER FOUR.....	29
RESULT AND DISCUSSION .....	29
4.2 Response Rate .....	29
4.3 Demographic Characteristics of the respondents .....	30
4.4 Result and Discussion .....	31
4.4.1 Types of fraud repeatedly committed in the Bank.....	31
4.4.2 Parties or individual who involves in fraud.....	32
4.4.3 Fraud Detection Methods.....	33
4.4.4 The time interval to review fraud prevention Methods .....	34
4.4.5 The Main causes of Fraud.....	35
4.5 Descriptive Analysis.....	35
4.6 Econometrics Analysis .....	46
4.6.1 Pearson Correlations .....	46
4.6.2 Multiple Regression Analysis .....	48
CHAPTER FIVE.....	56
SUMMARY, CONCLUSION AND RECOMMENDATIONS .....	56
5.1 Summary of Major Findings .....	56



5.2	Conclusion.....	58
5.3	Recommendations .....	58
	Reference.....	60
	Appendix .....	63

## List of table

Table 3.1 Target respondents.....	24
Table 3.2 Reliability Result.....	28
Table 4.1 Demographic Characteristics of the respondents.....	30
Table 4.2 Types of fraud repeatedly committed in the Bank.....	31
Table 4.3 how fraud detected in your band.....	33.
Table 4.4 Causes of fraud.....	35
Table 4.5 Effectiveness of internal control system in detecting fraud.....	37
Table 4.6 Effectiveness of internal control system in preventing fraud.....	38
Table 4.7 The effectiveness of control environment to detect and prevent fraud.....	40
Table 4.8 Risk Assessment on detecting and preventing fraud.....	41
Table 4.9 Effectiveness of control activities in detecting and preventing fraud.....	42
Table 4.10 Effectiveness of information and communication in detecting and Preventing fraud.....	43
Table 4.11 Monitoring Activities.....	44
Table 4.12 Challenges in Implementing Internal control system.....	45
Table 4.13 Pearson Correlation result.....	47
Table 4.14 collinearity test.....	50
Table 4.15 Model Summary.....	53
Table 4.16 ANOVA result.....	53
Table 4.17 regression coefficients.....	54

## List of Figures

Figure 2.1 Conceptual framework of effectiveness of internal control in detecting and Preventing fraud in Ethiopian Banking sector .....	22
Bar chart 4.1 parties who frequently involved in fraud .....	32
Pie chart 4.2 how often fraud prevention methods get reviewed .....	34
Figure 4.3 Normality Test .....	49
Figure 4.4 Linearity Test .....	51
Figure 4.5 Heteroscedasity Test .....	52

## **List of Acronyms**

ICS	Internal control system
NBE	National bank of Ethiopia
RA	Risk Assessment
ACFE	Association of Certified Fraud Examiners

## **Abstract**

*The main purpose of the study is to examine the effectiveness of internal control system in detecting and preventing fraud in the case of Ethiopian banking industries. This research was used both descriptive and explanatory research design because it enables the study to clearly investigate the characteristics and nature of the study undertaken and the cause and effect relationship with explanatory and dependent variables of the study. The data was gathered from primary sources through the use of structured questionnaires. The total population is 278 employees. The components of the internal control system (Control environment, risk assessment, control activities, information and communication and monitoring activities) are effective in addressing or alleviating and preventing the frequent occurrence of fraud in different private banks of Ethiopia. The Pearson correlation result shows that from five explanatory variables (control environment and information communication) has no association since the p value of each variables are greater than 0.05. But the other variables like risk assessment, control activities and monitoring activities has a positive and statistically significant relationship with fraud detection and prevention. Regression result shows that from the variables which incorporated in the model control activities and Control environment are statistically insignificant or it doesn't have a cause and effect relationship with fraud detection and prevention in the banking sector. The forwarded recommendations was the organizations should implement the right mix of technologies and prevention techniques and put additional controls in place, including rigorous approval procedures and careful separation of duties.*

***Keywords: control system, Fraud detection and prevention***

# CHAPTER ONE

## INTRODUCTION

This chapter presents an introductory issue of the study, such as the background of the study, statement of the problem, objectives of the study, significant of the study, scope of the study, and organization of the study

### **1.1 Background of the study**

According to Smriti (2018) Banks in developing countries play an effective role in the economic development. The majority of people in such countries are poor, unemployed and engaged in traditional agriculture. Banks help in overcoming these obstacles and promoting economic development. The more efficient the financial sector becomes, the more likely a country's scarce resources can be directed to their most productive use. As this occurs, economic growth can reach its full potential (Levine, 1997).

The banking industry can be considered as factors, policies and institutions that lead to effective financial markets and access to capital and financial services (World Economic Forum, 2012).The contribution of banking sector development to economic growth are important tools because they promote economic growth, develop private sectors, increase liquidity to mobilize local savings, enhance bank competitions and develop a greater diversity of financial institutions (Paul, 2004).

Fraud is a major challenge to the entire banking industry; no bank is immune to it and in all facets of life (Olorunsegun, 2010). The banking public expects accountability, fairness, transparency in their day operation for effective intermediation. Though there were known cases of fraud in the sector, some major problems remain unsolved which are what is the significant effects of fraud cases identified, problem of how to curb or minimize the number of staff involved in the fraud cases, and how to drastically reduce the amount involved in the fraud cases to the minimum. It is asserted by Adeyemo (2012) that fraud in the bank is possible with confirmation of an insider.

The goals of financial institutions are to enhance growth, profitability and sustainability, that is, to actually achieves their mission, and minimizes the risk of loss or failure in the process of conducting business. To fulfill their mission, financial institutions risks must be managed

through effective internal controls. This implies that internal control systems play a positive role in the growth, profitability and sustainability of financial institutions (Njagi, 2009; Kiprop, 2010).

According to Markowski & Mannan (2008) explained Internal Controls system is a critical component of bank management and a foundation for the safe and sound operation of banking organizations. A system of strong Internal Controls can help to ensure that the goals and objectives of a banking organization will be met, that the bank will achieve long-term profitability targets, and maintain reliable financial and managerial reporting. Such a system can also help to ensure that the bank will comply with laws and regulations as well as policies, plans, internal rules and procedures, and decrease the risk of unexpected losses or damage to the bank's reputation.

A system of Internal Controls potentially prevents errors and fraud through monitoring and enhancing organizational and financial reporting processes as well as ensuring compliance with pertinent laws and regulations (Rae & Subramanian, 2008). Reasonable assurance is provided when cost effective actions are taken to restrict deviations, such as improper or illegal acts to a tolerable level. The internal audit reviews the effectiveness of the Internal Control System to ascertain whether the system is functioning as intended (Fadzil et al., 2005).

Fraud impacts Ethiopian banking organizations in several areas including financial, operational, and psychological. While the monetary loss owing to fraud is significant, the full impact of fraud on an organization can be staggering. The losses to reputation, goodwill, and customer relations can be devastating. Fraud in general, inflicts untold hardship on bank and customers, as most bank failures are associated with large scale frauds. Therefore the lack of an effective control in Ethiopian banking sector is the major cause of bank frauds. So this research intended to examine the effectiveness of the internal control system in detecting and preventing the occurrence of fraud in the banks. kalkidan (2018)

## **1.2 Statement of the problems**

According to Kigen (2006), internal control is an independent objective assurance and a consulting activity designed to add value and improve an organization's operations. It enables an organization to achieve its objectives by bringing a systematic disciplined approach to evaluate and improve the effectiveness of risk management, control and governance process. Internal auditing plays an important role in fraud management. effective internal control system and good system of fraud prevention will ensure efficient mobilization of savings and its allocation to productive investment, thereby promoting growth and development, as well as achieving their objectives, profitability, solvency and ultimately restores the lost confidence of customers and lenders overtime (Olorunsegun, 2010).

The symptoms of poor internal controls increase the likelihood of frauds in bank branches. Poor Internal control symptoms include a poor control environment, lack of segregation of duties, lack of physical safeguards, lack of independent checks and balances, lack of proper authorizations, lack of proper documents and records, the overriding of existing controls, and an inadequate accounting systems ((Agwu, 2013).

According to Kalkidan (2016) Ethiopian banks also vulnerable to different frauds, Commercial bank of Ethiopia affected by different bank fraud in different period, in December 2012, the CBE lost more than \$314,000 at its headquarter, in March 2016, \$852,000 transferred from customer account to fake account that deliberately created. This frauds committed by using other co-works user name and password by the bank employees and employees collaborate with outsider customers.

Fikru (2018) examines the effectiveness of internal control in Ethiopian banking industry and based on that effectiveness the researcher test the effectiveness of internal control system in preventing and detection of fraud in Ethiopian banking industry. Among the findings were those internal control techniques employed by banks in checking frauds have been effective but put marks. This study was failed to clearly address the transparency in reporting the performance of internal control system in fraud control for different stakeholders.

Kalkidan (2017) did a study on Assessment of fraud control practice. The result indicates that there are fraud cases but the rate is low and internal control in the bank is not effective. There is a deficiency in controlling component mainly the risk assessment and information and



communication component. This research was failed to include many representative banking sectors since this research is narrow in the scope as it only focuses on one selected private banks.

Oguda Ndege, Odhiambo Albert and John Byaruhanga (2015) investigated the Effect of Internal Control on Fraud Detection and Prevention in District Treasuries of Kakamega County. The study result shows there is a significant positive relationship between internal control systems and fraud detection and prevention. This study were not investigate or failed to consider the internal control system effectiveness and not able to show preventive mechanism

occurrence.

Olaoye (2017) this study deals with the role of auditors in detection and prevention of fraud in Nigeria Banks. The results indicated that the level of fraud control in Nigerian banks during the period covered was low; the result revealed that risk assessment management, system audit and verification of financial reports adopted by the banking industry in Southwest Nigeria limit the fraudulent activities. This study was gives more emphasis on auditor's role in fraud detection, since it's a single factor don't cover system related issues in identifying and preventing fraud. Not focus and examine on the system which can ensure the bank to work with laws and regulations as well as policies and plans to control fraud occurrence in the banking Sectors.

Leah (2015) the study was conducted on the effect of internal controls on fraud detection and prevention Among Commercial Banks in Kenya. The results also indicated that there is a negative and significant relationship between financial governance control and level of fraud prevention and detection while the relationship between reporting and budget control and level of fraud prevention and detection was positive and significant. This study was failed to focus on the components of internal control system in fraud detection and prevention.

Therefore this research examines the effectiveness of internal control system in detecting and preventing fraud in Ethiopian banking industries.

### **1.3 Research Questions**

The study was addressed the following basic questions

- Does the Internal Control System effective in detecting and preventing the occurrence of fraud in Ethiopian banking sector?
- Is the preventive measure effective in mitigating fraud challenges in banking sector?
- What are the main causes of fraud in Ethiopian banking industries?
- What are the challenges that can hinder the effective implementation of internal control system in detecting and preventing fraud?

### **1.4 Research Objectives**

#### **1.4.1 General Objectives of the study**

The overall objectives of the study is to examine the effectiveness of internal control system in detecting and preventing fraud in the case of Ethiopian banking industries

#### **1.4.2 Specific Objectives**

The specific objective of the study was:

- ✓ To examine the effectiveness of internal control measures against fraud detection and prevention in Selected commercial banks in Ethiopia
- ✓ To Assess the effectiveness of the preventive measures aimed at mitigating fraud challenges in banks
- ✓ To examine the main causes of Fraud in Ethiopian banking industries.
- ✓ To assess the challenges that hinder the effective implementation of internal control system in fraud detection and prevention.

### **1.5 Significance of the study**

Fraud is a major challenge to the entire business world, no company is immune to it and it is in all facets of life (Olorunsegun, 2010). Therefore this study will have undeniable benefits for both the banking sectors and for the country as whole. The results of the study will have a contribution on building a supportive strategy, police and procedures on managing illegal practice or fraud in the bank sectors. In relation to policy and procedures, the findings of the

study are also expected to be relevant to the management of the commercial banks to maintain an enhanced regulated environment by helping management and employees to develop and maintain an environment which can help the employee to have a positive attitude toward internal control system.

Future researchers and scholars may be able to use this research study as a guiding factor or base for future research. To scholars and researchers, the findings of the study are expected to contribute to the existing literature about the effectiveness of Internal Controls in fraud detection and prevention in banks. The concerned bodies will use the study findings to formulate policies on risk management and Internal Control Systems.

### **1.6 Scope of the study**

This study was conceptually focused mainly on internal control system effectiveness in detecting and preventing fraud. This study gives more emphasis for components of internal control system such as control environment, risk assessment, control activity, information and communication and monitoring. Geographically due to the fact that there are several commercial banks in Ethiopia, the study was limited to only select commercial banks in Ethiopia which can represent the whole banking industries. The methodological scope was used multiple methods to get answer for the research questions. The study was employed both quantitative and qualitative approaches. The core methodologies used in generating the data using descriptive and inferential statistics. Correlation and regression was employed to clearly know the effectiveness of the independent variables on dependent variables (fraud detection and prevention).

### **1.7 Organization of the paper**

The research paper was organized into five chapters. The first chapter deals with the introduction of the topic and the second chapter presents review of related literature which is about internal control system effectiveness in fraud detection and prevention. The third chapter deals with the methodology of the research and the fourth chapter presents data analysis, findings and discussion of the data gathered. The fifth chapter presents the conclusion and recommendations of the research.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

This chapter was clearly discussed about fraud concept, classification of fraud and Internal Control system, components of Internal Controls and Empirical studies that have been done on internal control and fraud detection and prevention in the banking sectors.

#### **2.1 Theoretical Review**

Under this section this study was reviewed different theories regarding fraud control practice and the role of internal control in detecting and preventing fraud in the banking sectors.

##### **2.1.1 Concepts of Fraud**

The terms “fraud” has received attention and different definitions from different scholars, researchers and authors. What is very peculiar to the definitions is that the concept has been associated with embezzlement, financial misstatement and misappropriation, extortion, illegal amassing of wealth through dubious means, act of deception, bribery, false representation, theft, concealment of material fact etc. According to Adeyemo (2012), fraud is defined as “any illegal act characterized by deceit, concealment or violation of trust. These acts are not dependent on the application of threat or violence or of physical force. On the other hand, Mutesi (2011) defined fraud as “any premeditated act of criminal deceit, trickery or falsification by a person or group of persons with the intention of altering facts in order to obtain undue personal monetary advantage. Osisioma (2013) defined fraud as all the multifarious means which human ingenuity can devise and are resorted to by one individual to get any advantage over another. It includes all surprise, trick, cunning, dissembling and unfair ways by which another is deceived.

Fraud has been widely defined in literature by scholars and experts. Hornby (2009) defines fraud as an action or an instance of checking somebody in order to make money or obtain goods illegally. According to the ICAN study Pack (2006a, b) Fraud consists of both the use of deception to obtain an unjust or illegal financial advantage and intentional misrepresentations, affecting the financial statements by the one or more individuals among management, employees, or third parties.

Archibong (2002) describes Fraud as a predetermined and well planned tricky process or device usually undertaken by a person or group of persons, with the sole aim of checking another person or organization, to gain ill-gotten advantages, be it monetary or otherwise, which would not have accrued in the absence of such deceitful procedure.

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 (Albrecht et al., 2009). 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 (Rae & Subramaniam, 2008). 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 (Albrecht et al., 2010).

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 (Mutua, 2011). 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).

### **2.1.2 Classification of Fraud**

Basically, two broad schemes of frauds have been identified, they include:

- Management fraud
- Employee fraud. According to Fakunle (2006).

#### **Management fraud**

This often involves the manipulation of the records and the account, typically by the enterprise's senior officers with a view to benefitting in some way. An example is obtaining finance under false pretences, or concealing a material item, i.e. window dressing. Robertson (1996) defines management fraud as a deliberate fraud, committed by management that injures investors and creditors, through materially misleading financial statements. Management fraud is sometimes called fraudulent financial reporting. It is usually perpetrated by the management staff of an organization, which includes directors, general managers and managing directors. The classes of victims of management frauds are investors and creditors and the instrument of perpetration is financial statement. The essence of management fraud most times is to attract more shareholders to come and invest in the organization (Albrecht et al., 2009).

#### **Employee fraud**

These are frauds that are perpetrated by the employees of the organization. Robertson (1996) defines it as the use of fraudulent means to take money or other property from an employer. It usually involves falsification of some kind, like false documents, lying, exceeding authority, or violating an employer's policy, embezzlement of company's funds. Employee fraud is more likely to be encountered where Internal Controls are weak.

### **2.1.3 The Fraud Management Lifecycle**

Effective management of the fraud management lifecycle starts with a common understanding of the stages in the lifecycle (Wilhelm, 2004). The fraud management lifecycle is a network lifecycle where each stage in the life cycle is an aggregated entity that is made up of interrelated, interdependent and independent actions, functions and operations (Albrecht et al., 2009). The fraud management lifecycle is made up of eight stages; Deterrence stage involves stopping fraud before it happens by increasing the difficulty of committing the fraud as

fraudsters tend to migrate toward the path of most anonymity and least resistance (Wilhelm, 2004). Deterrence is achieved through creating fear of consequences or difficulty of perpetration, to turn aside, discourage or prevent fraudulent activity from being attempted (Kimani, 2011).

Policy must seek to balance deterrent value, loss reduction, sales volume, operational scalability and cost effectiveness (Wright, 2007). Policy development involves constantly reassembling the situations disassembled in the analysis stage, by taking advantage of the knowledge gained by analysis, combining it with internal, external and interactive environmental factors in order to craft policies that address the whole, while leveraging the knowledge of the parts (Wilhelm, 2004). Policy development staffs are most frequently the leaders within the fraud management organization as they must consider all disciplines within the fraud management department as well as the needs of the rest of the business enterprise (Hassink et al., 2010). The investigation stage involves obtaining enough evidence and information to stop fraudulent activity, to obtain recovery of assets or restitution and to provide information and support for the successful prosecution and conviction of the fraudsters (Albrecht, et al., 2009). Fraud investigations are focused upon three primary areas of activity; internal investigations, external investigations and law enforcement coordination. Internal investigations includes investigations of employees, contractors, consultants or vendors while external investigations are conducted on customers, fraudsters and organized groups (Wilhelm, 2004). Law enforcement coordination as further argued by Gottschalk (2010) is the provision of information and resources to, and the maintenance of, a partnership with federal, state, regional and local law enforcement authorities.

Rigorous and routine investigations provide for both an incremental lift in deterrence and the maintenance of an effective relationship with law enforcement. Finally the prosecution stage is focused upon prosecutorial and judicial authorities as well as with law enforcement (Wilhelm, 2004). The three aims of prosecution in the fraud arena is to punish the fraudster in an attempt to prevent further theft, to establish, maintain and enhance the business enterprise's reputation of deterring fraud so that the fraud community becomes aware of it and to obtain recovery or restitution wherever possible (Albrecht et al., 2009).

#### **2.2.4 Causes of bank frauds**

There are many identified causes of fraud in banks. They vary from institutional to economic, social, psychological, legal, and even infrastructural causes. The immediate causes of frauds in general as provided by Ogbunka (2002) include: Availability of opportunities to perpetuate frauds; Poor internal controls that is to say, lack of proper authorization, no separation of duties, lack of clear reporting lines, inadequate documentation etc; management override of Internal Controls; poor or non-existence of ethical standards and business policies; general lust for wealth; Inadequate training for bank personnel, among others.

Of a truth, there are many causes of bank frauds, but weak Internal Control System stands as a major cause of frauds in banks. It is therefore, expedient that adequate, efficient and effective Internal Control System be installed in every bank in order to reduce this disaster called fraud.

#### **2.2.5 Measures of fraud prevention in banks**

Fraud prevention involves good division of responsibilities, supervision of staff, monitoring work performance and also putting measures in place to ensure that even when systems are accessed that there is proper control (Kimani, 2011).

Daily monitoring of transactions should also be carried out in order to spot unusual transactions (Prabowo, 2012). Fraud awareness can also be enhanced through seminars and training events held in collaborations with banks, and other financial institutions, covering areas like fraud prevention measures and investigation techniques (Prabowo, 2012).

Staff training is a key element in risk management as employees who are actively trained in risk management are better able to identify threats to the organization due to weak or non-existent Internal Controls (Rae & Subramaniam, 2008). Know your customer is a key compliance issue, whereby an institution is required to identify all the features of its clients by updating existing files and monitoring the operations and checking at least that originators and beneficiaries are not blacklisted (Hardouin, 2009).

Other fraud prevention measures may include: Surprise audits on specific bank functions or operations, Payroll distribution audits-now required by Accountability Regulations, Job rotation, communicate to employees on views and policies regarding fraud, Annual



Independent Financial Statement Audit, Eliminate excessive authority residing with one individual etc.

### **2.1.6 Internal control system**

COSO in 1992, defined internal controls as a process and rightly so because an internal control system is not an end in itself but a means to an end. Internal control is defined as a “process effected by an entity's board of directors, management and other personnel designed to provide reasonable assurance regarding the achievement of objectives in the following categories:

- Effectiveness and efficiency of operations
- Reliability of financial reporting
- Compliance with applicable laws and regulations” (COSO, Internal Control-Integrated Framework, 1992).

Again the Basel committee on banking supervision defined internal controls “as a process effected by board of directors, senior management and all levels of personnel. It is not solely a procedure or policy that is performed at a certain point in time, but rather it is continually operating at all levels within the bank” (Basel, 1998).

This definition reflects certain fundamental concepts. Internal control is geared to the achievement of objectives in one or more categories: operations, reporting, and compliance. It is also a process consisting of ongoing tasks and activities; a means to an end, not an end in itself. In addition, it can be affected by people not merely about policy and procedure manuals, systems, and forms, but about people and the actions they take at every level of an organization to affect internal control. Internal control used to provide reasonable assurance but not absolute assurance, to an entity’s senior management and board of directors. Adaptable to the entity structure; flexible in application for the entire entity or for a particular subsidiary, division, operating unit, or business process.

### **2.1.7 Objectives and Role of the Internal Control**

Internal control comprises the plans, methods, policies and procedures used to fulfill the mission, strategic plan, goals and objectives of the entity. Internal control serves as the first

line of defense in safeguarding assets. In short, internal control helps managers achieve desired results through effective stewardship of public resources.

Internal control of a bank is the bank system defined and implemented under its responsibility. The system more particularly is design to ensure that certain objectives which are fundamental to the operation of the bank are achieved. These objectives and related risks can be broadly classified into one or more of the following categories:

- ✚ Ensure the effectiveness and efficiency of operations (Performance objectives)
- ✚ Ensure reliability of financial reporting (Information objectives)
- ✚ Ensure compliance with applicable laws and regulations (Compliance objectives)
- ✚ Ensure that the instructions and directional guidelines fixed by the executive management or the management board are applied.

The committee of sponsoring organization (COSO) of the tread way commission (1999) categorizes the above stated objectives of internal control system as a means to provide reasonable assurance that:

1. Assets are safeguard and used for business purposes
2. Business information is accurate
3. Employees comply with laws and regulations

Internal control is therefore neither limited to a set of procedures nor simply to accounting nor financial processes. Nor does it embrace all of the initiatives taken by the executive bodies or by management, such as defining company strategy, fixing objectives, management decisions, and dealing with the risk or monitoring performance.

### **2.1.8 Internal Control System Theory**

A system is a set of interrelated and interdependent components that interact in a way to achieve a set goal. These components or sub-systems are inter-dependent and the failure of one component leads to the failure of the whole system. An organization is a complex system which is divided in various sub-systems (Units, divisions, departments etc) and hence requires a system of controls over units, divisions, departments, etc, for its effectiveness and survival.

An effective internal control system is an integrated system with interrelated components, supporting principles and attributes. Harvey and Brown (1998) identified control

environment, accounting system and control procedures as the major components of internal controls (Harvey & Brown, 1998). According to Grieves, an internal control system available to a firm consists of: management oversight and the control culture, risk recognition and assessment, control of activities and segregation of duties, information and communication and monitoring activities and correcting deficiencies (Grieves, 2000).

The paper adopts COSO's 1992 integrated internal control framework. The Committee of Sponsoring Organizations (COSO), was commissioned in the 1980's by National Commission on Fraudulent Financial Reporting (the Treadway Commission) to identify factors that caused fraudulent corporate financial reports and make recommendations, and has since developed to become a thought leader in enterprise risk management (ERM), internal control, and fraud deterrence (Amudo & Inanga, 2009). In 1992, COSO published a landmark report on internal control: Internal Control - Integrated Framework, referred to as "COSO". The framework classifies an organization's internal control system in to five integrated components which must be built into business processes across the entire entity, in its efforts to achieve objectives.

### **2.1.9 Components of internal control system**

COSO integrated framework provides five integrated components of internal control. The five components of internal control must be effectively designed, implemented, and operating together in an integrated manner, for an internal control system to be effective. The five components of internal control are as follows:

#### **1. Control Environment**

Control environment is the set of standards, processes, and structures that provide the basis for carrying out internal control across the organization. The board of directors and senior management establish the tone at the top regarding the importance of internal control including expected standards of conduct. Management reinforces expectations at the various levels of the organization. The control environment comprises the integrity and ethical values of the organization; the parameters enabling the board of directors to carry out its governance oversight responsibilities; the organizational structure and assignment of authority and responsibility; the process for attracting, developing, and retaining competent individuals; and the rigor around performance measures, incentives, and rewards to drive accountability for

performance. The resulting control environment has a pervasive impact on the overall system of internal control. (COSO, 2009)

It is the foundation for an internal control system. It provides the discipline and structure to help an entity achieve its objectives. The control environment is the foundation for an internal control system. It provides the discipline and structure, which affect the overall quality of internal control. It influences how objectives are defined and how control activities are structured. The oversight body and management establish and maintain an environment throughout the entity that sets a positive attitude toward internal control. (SOX Guidance, 2007) It establishes integrity and ethical values, establish oversight structure, develop expectations of competence, and maintain accountability to all members of the oversight body and key stakeholders.

## **2. Risk Assessment**

Every entity faces a variety of risks from external and internal sources. Risk is defined as the possibility that an event will occur and adversely affect the achievement of objectives. Risk assessment involves a dynamic and iterative process for identifying and assessing risks to the achievement of objectives. Risks to the achievement of these objectives from across the entity are considered relative to established risk tolerances. Thus, risk assessment forms the basis for determining how risks will be managed. A precondition to risk assessment is the establishment of objectives, linked at different levels of the entity. Management specifies objectives within categories relating to operations, reporting, and compliance with sufficient clarity to be able to identify and analyze risks to those objectives. Management also considers the suitability of the objectives for the entity. Risk assessment also requires management to consider the impact of possible changes in the external environment and within its own business model that may render internal control ineffective. (Rokeya Sultana and Muhammad Enamul Haque, 2011)

It also assesses the risks facing the entity as it seeks to achieve its objectives. This assessment provides the basis for developing appropriate risk responses. Oversee management's assessment of risks to the achievement of objectives, including the potential impact of significant changes, fraud, and management override of internal control. (COSO, 2009)

### **3. Control Activities**

Control activities are the actions established through policies and procedures that help ensure that management's directives to mitigate risks to the achievement of objectives are carried out. Control activities are performed at all levels of the entity, at various stages within business processes, and over the technology environment. They may be preventive or detective in nature and may encompass a range of manual and automated activities such as authorizations and approvals, verifications, reconciliations, and business performance reviews. Segregation of duties is typically built into the selection and development of control activities. Where segregation of duties is not practical, management selects and develops alternative control activities. The actions management establishes through policies and procedures to achieve objectives and respond to risks in the internal control system, which includes the entity's information system. Provide oversight to management in the development and performance of control activities. (Basle, 1998)

### **4. Information and Communication**

Information is necessary for the entity to carry out internal control responsibilities to support the achievement of its objectives. Management obtains or generates and uses relevant and quality information from both internal and external sources to support the functioning of other components of internal control. Communication is the continual, iterative process of providing, sharing, and obtaining necessary information. Internal communication is the means by which information is disseminated throughout the organization, flowing up, down, and across the entity. It enables personnel to receive a clear message from senior management that control responsibilities must be taken seriously. External communication is twofold: it enables inbound communication of relevant external information, and it provides information to external parties in response to requirements and expectations. (COSO, 2009).

### **5. Monitoring Activities**

Ongoing evaluations, separate evaluations, or some combination of the two are used to ascertain whether each of the five components of internal control, including controls to affect the principles within each component, is present and functioning. Ongoing evaluations, built into business processes at different levels of the entity, provide timely information. Separate evaluations, conducted periodically, will vary in scope and frequency depending on

assessment of risks, effectiveness of ongoing evaluations, and other management considerations. Findings are evaluated against criteria established by regulators, recognized standard-setting bodies or management and the board of directors, and deficiencies are communicated to management and the board of directors as appropriate.

Activities management establishes and operates to assess the quality of performance over time and promptly resolve the findings of audits and other reviews. Scrutinize the nature and scope of management's monitoring activities as well as management's evaluation and remediation of identified deficiencies. (Dr. Theofanis, Karagiorgos and George Drogalas, Alexandra Dimou, 2001)

Internal control systems need to be monitored a process that assesses the quality of the system's performance over time. This is accomplished through ongoing monitoring activities, separate evaluations or a combination of the two. Ongoing monitoring occurs in the course of operations. It includes regular management and supervisory activities, and other actions personnel take in performing their duties. The scope and frequency of separate evaluations will depend primarily on an assessment of risks and the effectiveness of ongoing monitoring procedures. Internal control deficiencies should be reported upstream, with serious matters reported to top management and the board.

There is synergy and linkage among these components, forming an integrated system that reacts dynamically to changing conditions. The internal control system is intertwined with the entity's operating activities and exists for fundamental business reasons. Internal control is most effective when controls are built into the entity's infrastructure and are a part of the essence of the enterprise. "Built in" controls support quality and empowerment initiatives, avoid unnecessary costs and enable quick response to changing conditions.

## **2.2 Review of Empirical Studies**

Here below this research was clearly discussed and review both international and local empirical studies that has done on the effectiveness of internal control system in detecting and preventing fraud.

### **2.2.1 International Studies**

Leah (2015) the study sought to investigate the effect of internal controls on fraud detection and prevention among commercial banks in Kenya. 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 reconciliation control and level of fraud prevention and detection. The results also indicated that there is a negative and significant relationship between financial governance control and level of fraud prevention and detection while the relationship between reporting and budget control and level of fraud prevention and detection was positive and significant.

Samuel, N and Kariuki (2020) the objective of the study was to assess the effect of risk assessment on fraud prevention in banking industry in Kenya. Correlation analysis was applied to determine the strength and direction of relationship between variables and regression analysis based on structural equation modeling (SEM) was used to test the hypothesis. The descriptive analysis showed that the respondents strongly agreed that the parameters put in place are capable of preventing fraud in banks. The hypothesis testing showed that risk assessment has significant effect on fraud prevention in banking industry in Kenya. From the results of tests, it was concluded that the risk assessment mechanisms put in place to assess the risks have significant effect in fraud prevention and as such they should be enhanced to completely prevent fraud in banking sector.

Olaoye (2017) did his study on The Roles of Auditors in Fraud Detection and Prevention in Nigeria Deposit Money Banks: Evidence from Southwest. This study was examined the impact of auditors captured by risk assessment, system audit and verification of financial report on banking fraud control in Southwest Nigeria. The study employed survey design in which a set of questionnaire was administered on the selected banks in Southwest Nigeria. Multiple regression technique and ANOVA were used for the analysis. The results indicated that the level of fraud control in Nigerian banks during the period covered was low; the result revealed that risk assessment management, system audit and verification of financial reports adopted by the banking industry in Southwest Nigeria limit the fraudulent activities among the Nigerian banks by 35, 13 and 18 percent respectively. Based on the findings, the study

concluded that risk assessment, system audit and financial report verifications are carried out to determine the effectiveness and impact of auditors on fraud control in Nigerian banks which reveals that auditors' roles need to be improved to enhance fraud control in banking industry. The study recommended that auditors should increase the scope of their activities on the efficiency of banks internal control system, risk assessment and system audit as this will enhance the detection of fraudulent activities. Also, management of banks should ensure strict compliance with their respective internal control system.

According to Adewale (2014) this study was conducted on internal control system and financial fraud control case study of Nigerian Customs Service on Internal control systems. The study concluded that internal Control System are not a substitute for good management, they can assist management but do not replace management of provide an excuse for poor management. Based on the outcome of the five hypotheses which was empirically tested and the research finding the researcher concludes that there should be continuous internal check and audit on the part of management and low level of management to ensure adequate internal control system. Adequate internal control system also ensures proper accountability and the study stated that organizations should provide adequate motivation such as bones, incentives to the employees/officers to avoid financial fraud. In addition, effective use of information technology and competent team of experts to work out the logic of standard internal control to enhance the high level of security check would improve the effectiveness of the internal control systems in the organization.

Oguda Ndege, Odhiambo Albert and John Byaruhanga (2015) investigated the Effect of Internal Control on Fraud Detection and Prevention in District Treasuries of Kakamega County. The study propose hypothesis to test the relationship between internal controls systems and Fraud Detection and Prevention. The study sampled 31 key respondents out of 122 populations with the acceptance range of 20% sample determination, the sample include district accountant, district internal auditors and head of department, and used close ended questionnaire. The response analyzed by using Pearson Correlation. The study result shows there is a significant positive relationship between internal control systems and fraud detection and prevention. Accordingly, an improvement in internal control strategies results in improved fraud detection and prevention.

Tsedal Lemi (2015) did here study on role of internal control system for organizational performance. This study 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.

### **2.2.2 Local Studies**

Fikru (2018) the banks and regulatory authorities have proposed and allowed internal control measures to check the practice of bank fraud. But the effectiveness of any internal control system is dependent on how fluid the system interacts with itself and how embedded it is into the organization's business processes. This paper examines the issues of effective internal control vs. fraud Detection and prevention in the Ethiopian banking industry by adopting primary data. Using a survey method, this work examined how the internal control systems in the Ethiopian banks have aided in combating or preventing fraud in the banking industry. To do this the study examines the effectiveness of internal control in Ethiopian banking industry and based on that effectiveness the researcher test 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 is that there is a significant relationship between internal control system (control environment, risk assessment, control activity, information and communication and monitoring) and fraud.

Kalkidan (2017) this study focused on assessment of fraud control practice in the case of Dashen Bank. The research has applied descriptive statistics by using questionnaires and document review. To undertake the research simple random sampling is used to select respondents from branches and purposive type of sampling was used to select 27 branches out of 109 branches found in Addis Ababa. 185 questionnaires were distributed in which 183 of them returned. Data were analyzed using descriptive statistics using SPSS software. The result indicates that there are fraud cases but the rate is low and internal control in the bank is

not effective. There is a deficiency in controlling component mainly the risk assessment and information and communication component. Comparing to risk and information communication control environment, control activities and monitoring practice are good. Employees do not have adequate awareness about anti-fraud policy, and the controlling mechanisms used by the bank are not enough to prevent fraudulent activities.

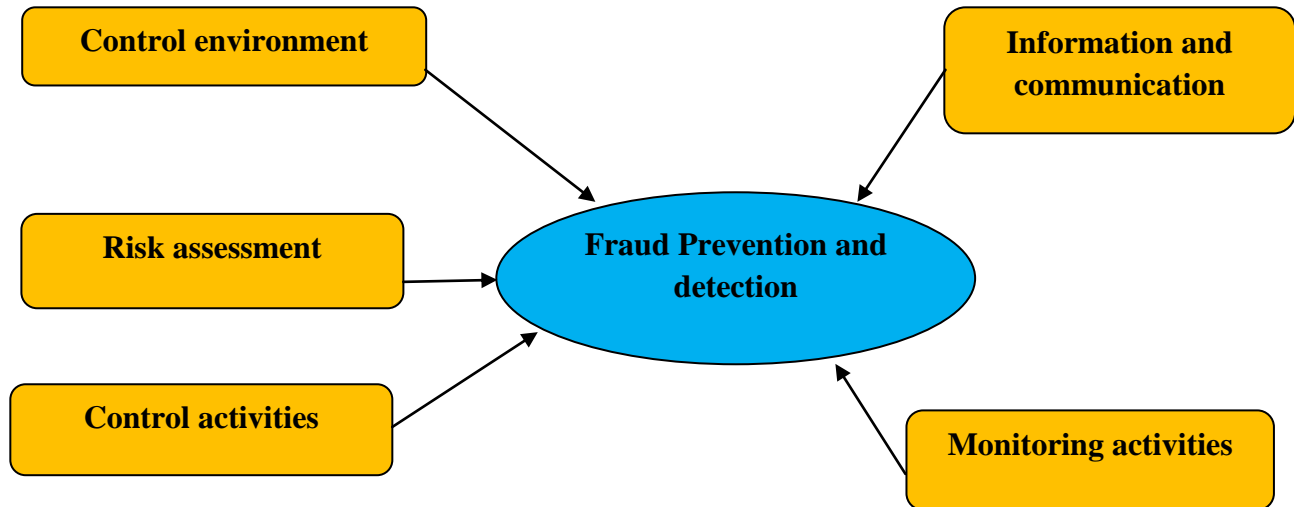
### **2.3 Research Gap Analysis**

The empirical study that has been reviewed in this research reflects internal control has a very important role in detection and prevention of fraud and cannot be undermined especially by banks. Since the lack of an effective internal control system, is the major cause of bank frauds. Managing and monitoring a standard internal control system, strong enough to stand against the wiles of fraud. Many of the studies show the success of the internal control system depends on positive internal control culture to promote continuity of operations and to ensure the liquidity, solvency internal control system play undeniable roles. However, fraudulent practices are increasing and up to date so to control this situation Banks should have in place a comprehensive internal control management process to identify; measure, monitor and control internal control system effectiveness and compliance.

Therefore this study was filled the above mentioned gaps by clearly investigating the effectiveness of comprehensive internal control system which includes control environment, risk assessment, control activities, information and communication etc for every increasing fraud occurrence in different banking sectors. Hence, the purpose of this study is to fill this research gap.

## 2.4 Conceptual framework

This framework shows the relationship between components of internal control system (control environment, risk assessment, control activities, information and communication and monitoring activities) and its effectiveness in detecting and preventing fraud in Ethiopian banking sector.



Source: Adopted from Leah (2015)

**Figure 2.1 Conceptual framework of effectiveness of internal control in detecting and preventing fraud in Ethiopian Banking sector**

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

Under this section this study was discussed about Research design, approach, population, sample size, sampling techniques, data collection tools data analysis, Reliability and validity of the study.

#### **3.1 Research Design**

According to Saunders et al., (2003) the purpose of the research is it is a blueprint that enables researchers to find answers to the questions being studied for any research project. The appropriate method of research design for this study is explanatory which will help to systematically answer to research question and together with the clear research plan it provides, constraints and ethical issues that a study was , inevitably, encounter must be taken into account. Each study follows a unique methodology in order to fulfill the purpose of that study. To describe and examine the effectiveness of internal control system in detecting and preventing fraud, the study was employed explanatory research design. This causal/explanatory research design was adopted to identify and analyze the variables that affect or control fraud.

#### **3.2 Research Approach**

This study was used both quantitative and qualitative approaches. The objective of this study is to investigate the effectiveness of internal control system in detecting and preventing fraud in Ethiopian banking industries. Qualitative data would be gathered mainly to evaluate the use of interviews by certain people who have clear insight into the subject field. Quantitative data was used to obtain from internal control department workers by using standardized questionnaire.

#### **3.3 Target Population of the study**

The target population is “the entire aggregation of respondents that meet the designated set of criteria” (Burns & Grove 1997). The target population of the study is both public and private commercial banking industries who are actively working.

According to Gupta (2002) explained determination of sample size is an important decision that has to be taken while selecting appropriate sampling techniques. There are various factors that affect appropriate sample size determinations like the time aspect, the cost aspect, the degree of accuracy desired, etc. According to Solomon (2014, cited in Kothari, 1990) explained if sample is too small, it might be difficult to achieve the objectives of analysis. But if it is too large, it may result in resource wastage when dealing with the sample. Sample error will arise because of not studying the whole population. Whenever sampling, it is usual to miss some helpful information about the population.

The Government of Ethiopia allowed the establishment of private banks and insurance companies in 1994, but does not yet permit foreign ownership in this sector. Eighteen banks including both private and state owned banks are now operating in Ethiopia (National Bank of Ethiopia, 2018).

The total population of the study consists of eighteen commercial banks. From this banks the target population or respondents were who are those Senior Internal control department Staffs in the respective selected banks. Among the commercial banking sectors nine banks (Commercial Bank of Ethiopia, Awash International Bank, Bank of Abyssinia, Wegagen Bank, Hibret bank, Nib International Bank, Dashen Bank, Corporative Bank Of oromiya, Oromiya International Bank) will be purposely selected based on their year of establishment.

**Table 3.1 Target respondents**

<b>Banks which selected for this study</b>	<b>Population</b>
Commercial Bank of Ethiopia	53
Awash International Bank	35
Bank of Abyssinia	28
Wegagen Bank	32
Hibret bank	26
Nib International Bank	29
Dashen Bank	34
Corporative Bank Of oromiya	18
Oromiya International Bank	23
<b>Total</b>	<b>278</b>

**Source: from human resource department of each bank**

According to Kothari (2005) all items in any field of inquiry constitute a ‘Universe’ or ‘Population.’ A complete enumeration of all items in the ‘population’ is known as a census

inquiry. It can be presumed that in such an inquiry, when all items are covered, no element of chance is left and highest accuracy is obtained. The total population is 278 employees so it is possible and manageable to take the whole population as a participant of the study. So 278 respondents were participated in this study and researcher was employed census techniques.

### **3.4 Data Collection Methods**

To get primary data for the data analysis the researcher was used survey or questionnaire as a data collection method. The questionnaires formed to generate the primary data or firsthand information. Interview data was collected from the top managers (senior internal control staffs and directors). The purpose of this study was to examine the effectiveness of internal control system to detect and prevent fraud, the questioner distributed for senior internal control staffs and department heads or director of the selected commercial banks. For the purpose of this research study self- administered instruments was designed. Pre-testing of the questionnaire was conducted to get accurate and relevant information in advance from the participant of the research.

### **3.5 Data Analysis**

Data that collected from questioner was analyzed by using descriptive and inferential or econometrics analysis.

#### **3.5.1 Descriptive Analysis**

As stated by Duncan Cramer and Dennis Howitt (2004), descriptive data analysis emphasizes on maximizing the gain from the data by making clearer the process of describing and analyzing the data gathered. After proper editing, the data was coded and entered to the software then it was ready to analysis. For the purpose of achieving the objectives of the study, the collected data was processed and analyzed with descriptive statistics using Statistical Package for Social Studies (SPSS) of 20th version. This technique is selected because it helps to summarize the sample, provides and allows describing the characteristics of the data collected and it helps to thoroughly analyze and interpret the questions one by one in order to reach meaningful results. Throughout the analyzing process, percentages, frequency and mean were employed. In doing so tables were used to present and made easily understandable the findings in order to arrive at certain conclusion.

### 3.5.2 Econometrics Analysis

Inferential statistics was employed to focus strictly on regression just to analyze which and how much the hypothesized regressors was related to the effect of internal control system on detecting and preventing fraud. The multiple regression technique was used to analyze the effects. Below is the detailed model for specifying the model which is an important step in this research.

### 3.6 Model Specification

Given economic theory and existing literature, the study used the components of internal controls (as independent variables) and the result which depends on is the other factors are dependent variables (fraud detection and prevention). The functional form of the regression equation is presented as:

**Therefore, the general model:**

$$\text{Regression model: } Y = \alpha + \beta_1 (X1) + \beta_2 (X2) + \beta_3 (X3) + \beta_4 (X4) + \beta_5 (X5) + e$$

X1: Control environment, X2: Risk assessment, X3: Control activities, X4: Monitoring activities

X5: Information and communication

$\beta_0$  = the intercept term- constant which would be equal to the mean if all slope coefficients are 0.

$\beta_1$ ,  $\beta_2$ ,  $\beta_3$ , and  $\beta_4$  are the coefficients associated with each independent (on the First, Second, Third and Fourth predictor) variable which measures the change in the mean value of Y, per unit change in their respective independent variables.  $e$ = error term, for calculation purpose.

F-Test for the overall significance of the model also had undertaken to test if there was a linear relationship between all of the independent variables and the dependent variable. From the STATA , ANOVA output if the p value is less than 0.05, concluded that there is evidence that at least one independent variable affects the dependent variable. This means that the model is adequate and it is possible to make a valid inference. SPSS version 21 software had used to organize, summarize and analyze efficiently and effectively the data in details. The reviewed materials also discussed properly according to the developed objectives. The

findings examined critically to ensure consistency with the research objectives. The information has presented by using tables and in narrative forms (texts). Estimating the sample linear regression function, as the most common method, is to use the OLS regression given that OLS assumptions are satisfied.

### **3.7 Validity**

Validity is the strength of our conclusions, inferences or propositions. It involves the degree to which you are measuring what you are supposed to, more simply, the accuracy of your measurement. Validity is determining whether the findings are accurate from the standpoint of the researcher, the participant, or the readers of an account (John, W.C. 2009).

### **3.8 Reliability**

In statistics, Cronbach's (alpha) is a coefficient of internal consistency. It is commonly used as an estimate of the reliability of a psychometric test for a sample of examinees. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. However, there is actually no lower limit to the coefficient. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale Gliem, (2003). The Cronbach's Alpha will be used to test the reliability of the responses from the respondents. Reliability is the extent to which results are consistent over time and accurately represent the characteristics of the total population under study. A study is reliable if the results of a study can be reproduced under a similar methodology.

An important step in analyzing questionnaire results is to establish the reliability and validity of the survey instruments. Reliability of a research instrument refers to the degree to which the instrument can produce consistent and stable measurements over a number of tests (Mugenda & Mugenda, 2003). Reliability can thus be explained as the extent of accuracy (reliability) or the extent of inaccuracy (unreliability), which can either be internal or external. According to George and Mallery (2003), Cronbach's alpha is the most common reliability coefficient which estimates internal consistency by determining how all items on a test relate to all other items and to the total test - internal coherence of data, where “ $\alpha > .9$  – Excellent,  $\alpha > .8$  – Good,  $\alpha > .7$  – Acceptable,  $\alpha > .6$  – Questionable,  $\alpha > .5$  – Poor, and  $\alpha < .5$  – Unacceptable”. In this study, the Cronbach's alpha reliability coefficient expressed as a coefficient between 0 and 1 was used. The closer Cronbach's alpha coefficient is to 1.0 the



greater the internal consistency of the items in the scale. According to the rules of thumb, the value of alpha of  $> 0.7$  is acceptable.

**Table 3.2 Reliability Result**

	<b>Items</b>	<b>Cronbach's alpha coefficient</b>
Control environment	4	0.765
Risk Assessment	4	0.735
Control activities	4	0.896
Information and communications	4	0.821
Monitoring activities	5	0.748

## **CHAPTER FOUR**

### **RESULT AND DISCUSSION**

#### **4.1 Introduction**

This chapter deals with the presentation of data, analysis and interpretation. To collect the data and extract findings, questionnaire was prepared and distributed to employee of the selected banks found in Addis Ababa.

This chapter presents the findings of the research in accordance to the research objectives and hypothesis. The analyses and interpretation of the data collected from the respondents was presented. It began with a description of the demographic and general characteristics of the participating respondents. The results of Cronbach's coefficient alpha for reliability were examined. The study was discussed the effectiveness of components of internal control system in detecting and preventing fraud by using descriptive statistics. Before running the econometrics analysis it was checked the results of multicollinearity, Heteroscedasity and Normality test. And finally the result of correlation and regression was presented. All tables as well as graphs in the analysis was generated from survey data through the SPSS 20 (statistical package for social studies) after being coded.

#### **4.2 Response Rate**

The total number of questionnaires distributed were 278 out of these 210 questionnaires was returned, yielding 75 percent response rate. This response rate was excellent as it represents and conforms to Mugenda and Mugenda, (2003) explained that a response rate of 50% is adequate for analysis; a response rate of 60% is good and a response rate of 70% and over is excellent.

### 4.3 Demographic Characteristics of the respondents

**Table 4.1 Demographic Characteristics of the respondents**

<b>Variables</b>	<b>Category</b>	<b>Frequency</b>	<b>Percent</b>
<b>Gender</b>	Male	123	58.6
	Female	87	41.4
<b>Educational Level</b>	Diploma	13	6.2
	first degree	147	70.0
	Masters and above	50	30.7
	<b>Total</b>	<b>210</b>	<b>100.0</b>
<b>Age</b>	25 and below	26	12.4
	26-35years	132	62.9
	36-45 years	48	22.9
	46-55 years	4	1.9
	<b>Total</b>	<b>210</b>	<b>100.0</b>
<b>Experience</b>	Below one years	32	15.2
	1-5 years	112	53.3
	6-10 years	58	27.8
	11-15 years	8	3.8
	<b>Total</b>	<b>210</b>	<b>100.0</b>

**Source: own survey, 2021**

According to Table 4.1 presented above, there are 123 (58.6%) Male and 87 (41.4%) Female respondents regarding to employees perspectives were involved in this research survey. From this it seems that the participation of females is good in the bank when we compare with other sectors, which further indicates their significant operational participation in the bank.

As illustrated table 4.1 above In terms of education level majority of the respondents 147(70%) were achieved first degree, following this result 50(30.7%) have achieved Masters and above, lastly 13 respondents (6.2%) have completed their diploma from different field of studies. This indicates majority of the employees were bachelor holders and professionals.

From this we can conclude that employee can understand the nature and every increasing trend of fraud, it also has undeniable role preventing the frequent occurrence of fraud.

The above table also shows that among all the respondents, majority of them fall between the age ranges of 26-35 years old which constitute of 132(62.9%) respondents. Followed by 48 (22.9%) respondents are between age range of 36-45 years old 26 (12.4%) respondents' fall between the age range of 25 and below years old and 4(1.9%) respondents' age fall between age ranges 46-55 years. The result clearly shows that majority of the workers in the bank are young's and adults.

From the demographic result table from the total respondents, majority of them 132(62.9%) are working in the organizations between the range of one year up to five years, 58(27.6%) of the respondents have 6-10 years of experience in the organizations. the remaining 32(15.2%) and 8(3.8%) of the respondents working experience fall between below one years and 11-15 years respectively. Farther more, while the level of experience is increasing, the fitness of qualification become increasing; it may builds confidence.

#### 4.4 Result and Discussion

##### 4.4.1 Types of fraud repeatedly committed in the Bank

<b>Table 4.2 Types of fraud repeatedly committed in the Bank</b>			
	Frequency	Percent	Valid Percent
Loan and letter of credit related fraud	16	7.6	7.6
Identify Theft	69	32.9	32.9
Forged cheque, foreign and local cash	44	21.0	21.0
Money Laundering	55	26.2	26.2
Account Opening fraud	1	.5	.5
ATM and Credit card fraud	25	11.9	11.9
<b>Total</b>	<b>210</b>	<b>100.0</b>	<b>100.0</b>

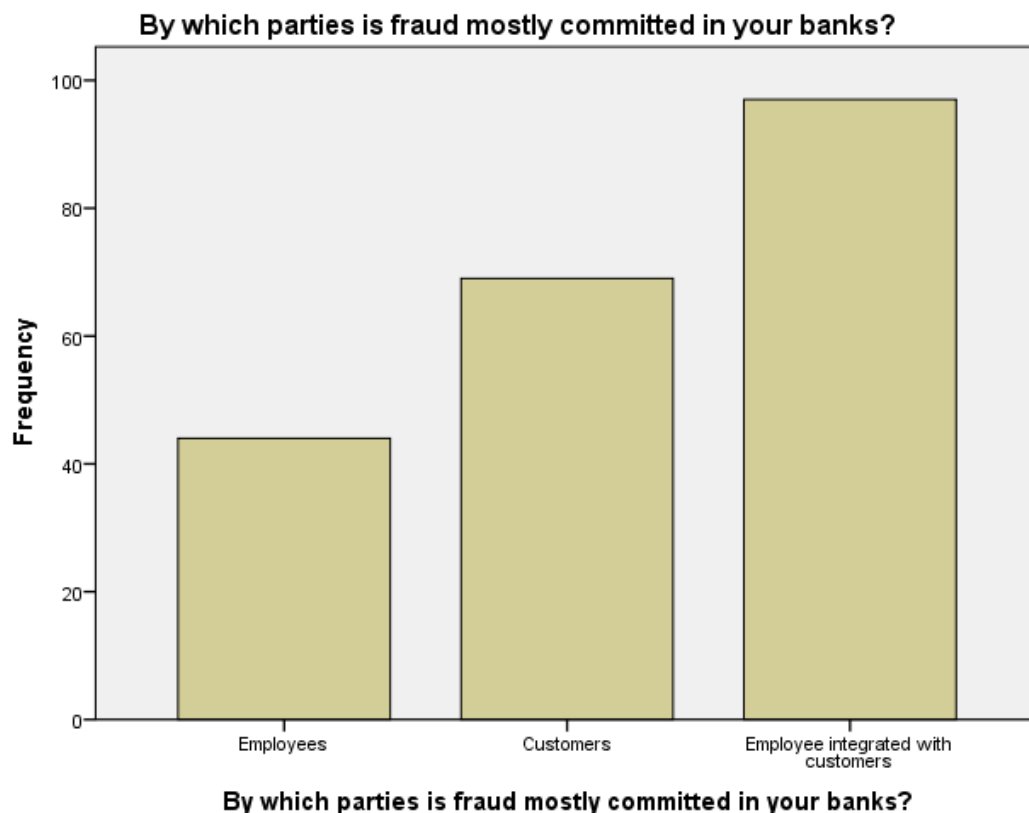
**Source: own survey, 2021**

The above table 4.2 clearly shows the types of fraud that has been committed in the financial sectors. Out of 210 respondents majority of 69(32.9%) of the research participants were responded identify theft one of the type of fraud frequently committed. This implies most of

the theft or illegal activities are categorized as one of the fraud that has been committed. Following that 55(26.2%) of the respondents were answered money laundering was one of the fraud that highly affect the financial sector growth. This is one of the fraud which leads to complex money transferring options which can affect the economic growth of the country. From the respondents 44(21.0%) of the them were answered forged cheque, foreign and local cash as one of the fraud types which frequently occurred in the financial sectors. As the table 4.2 depicted 25(11.9%) of them were responded ATM and Credit card fraud are one of the fraud type which committed in the banking industries. The result table shows 16(7.6) and 1(0, 5) of the respondent were answered Loan and letter of credit related fraud and Account Opening fraud respectively. Overall those fraud types that has been committed (theft, money laundering etc) frequently, this will have a negative and long term effects on the financial sector growth.

#### 4.4.2 Parties or individual who involves in fraud

**Bar chart 4.1 parties who frequently involved in fraud**



As the above bar chart depicted actors or parties who involve or participate in fraud in the financial sectors was discussed below. The result shows out of the total respondents 97(46.2%) of them was responded that fraud frequently committed by collaboration between employee and customers of the banks. Following the above result 69(32.9) of the research participants were answered customers is one of the actors who mostly commit fraud in the financial sectors. Lastly 44(21.0%) of the respondents responded that employee of the organization is one of the person who involved in the fraud in different banking sectors.

Overall the study clearly shows that fraud occurs by the Bank employees who have knowledge of the systems as well as classified and confidential information together with the external bodies mostly the customer of the banks can give them the opportunity to commit frauds.

#### 4.4.3 Fraud Detection Methods

**Table 4.3 how fraud detected in your band**

	Frequency	Percent	Valid Percent
By Accident/chance	11	5.2	5.2
By internal control system	107	51.0	51.0
External audit	72	34.3	34.3
Internal audit	20	9.5	9.5
<b>Total</b>	<b>210</b>	<b>100.0</b>	<b>100.0</b>

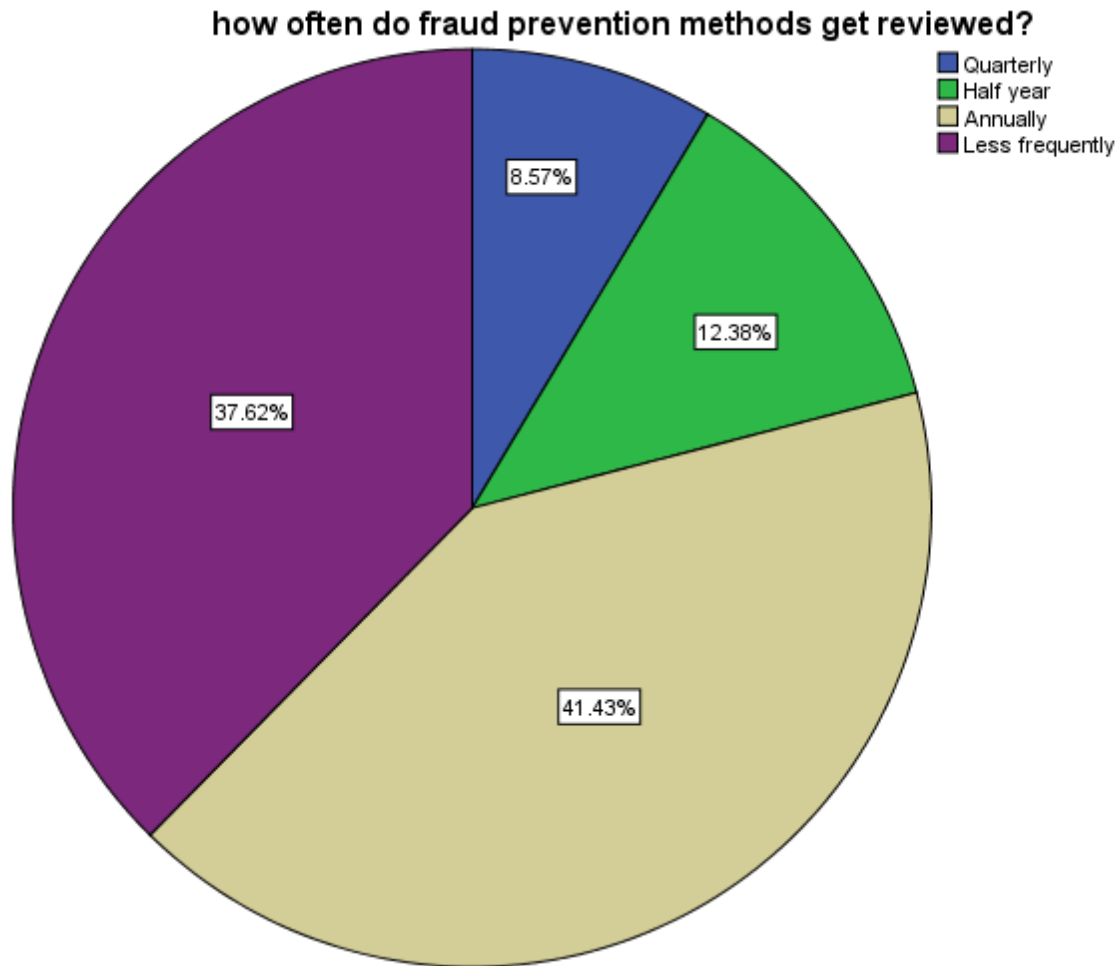
**Source: own survey, 2021**

The result of table 4.3 shows how the fraudulent practices were detected in the banking industries. From the listed research participants majority of the respondents 107(51.0%) of them were answered fraud was detected by using internal control system of the organizations. out of the total respondents 72(34.3%) of the participants responded external audit is one of the fraud detection techniques the banking sectors has used it. Following the above result 20(9.5%) and 11(5.2%) of the respondents were responded internal audit and by accident chance was the method or the way the bank used to detect fraud respectively.

From the result study concluded that the banking sector now they are using internal control system and financial statement auditors to conduct their audits or investigation in such a way so as to obtain reasonable assurance that financial statements are free from fraud.

#### 4.4.4 The time interval to review fraud prevention Methods

**Pie chart 4.2 how often fraud prevention methods get reviewed**



The pie chart result depicted the time interval or to review the fraud prevention methods majority of 87(41.4%) of the respondents answered as the prevention methods get reviewed annually, 79(37.6) of them also responded as the system or procedures reviewed less frequently. The result indicated that 26(12.38) of the respondents were answered as the fraud prevention method get reviewed half year. Lastly the result shows 18(8.57) of the respondents have mentioned as the system or the methods get revised quarterly.

From the result the study concluded that the fraud prevention methods were not updated timely since fraudulent transactions are getting complicated and focused on technology advancement. The bank was failed to revised and analyze the effectiveness of the fraud prevention methods that has been used by the banking sectors.

#### 4.4.5 The Main causes of Fraud

**Table 4.4 Causes of fraud**

	Frequency	Percent	Valid Percent
Inadequate end use monitoring	18	8.6	8.6
Lack of knowledge regarding internal control system	111	52.9	52.9
Overburdened staffs	38	18.1	18.1
Ineffective fraud control policy	43	20.5	20.5
<b>Total</b>	<b>210</b>	<b>100.0</b>	<b>100.0</b>

**Source: own survey, 2021**

From the result table 4.4 the study was identified the main causes of fraud prevalence in the banking sector. From the entire 210 respondents majority of the respondents constituent 111(52.9%) were Lack of knowledge regarding internal control system, following by 43(20.5%) respondents were mentioned Ineffective fraud control policy as one of the causes of fraud and 38(18.1%) respondents said that Overburdened staffs are one of the main causes of fraud and 18(8.6%) the respondents stated that Inadequate end use monitoring respectively.

As per the finding of the study the banking sector was vulnerable to fraud due to different causes like Inexperience employees are helpless in conferring unexpected extortion by falling to the structure of various traps of fraudsters. Employees would engage in fraud when fraud policies are not vividly set, as well as training for guiding employees.

#### 4.5 Descriptive Analysis

According to Pallant, (2005) Explain Descriptive statistics concern the development of certain indices from the raw data. These are mean scores, standard deviations and percentage for each subgroup. Interpreting the result of these values will also give us an



indication of the impact of the independent variable. According to Murry.J. (2013) create equal intervals for a range of five points Likert scale (that ranges from strongly agree to strongly disagree in the survey questionnaire). In the analyzing of the data, standard deviation was preferable to use. Small standard deviations show that data are close to the mean whereas a large standard deviation (compared to the mean) indicates that the data points are distant from the mean. The mean is a poor fit of the data. Standard deviation is a measure of how well the mean represents the data. The variables were measured using a five-point Likert scale where 1 stands for strongly disagree and 5 stands for strongly Agree. Therefore, the interpretation made using the mean of each variable, as a matter of fact the mean falls between the two ranges, hence if the mean approaches to 1 the interpretation would be the respondents disagree on the variable and if it approaches to 5 the reverse would be true.

According to Murry.J.(2013) determine the minimum and the maximum length of the 5-point Likert type scale,

<b>Scale</b>	<b>Interpretation</b>
1 to 1.80	Represents (strongly disagree)
1.81 until 2.60	Represents (Disagree).
2.61 until 3.40	Represents (Neutral).
3:41 until 4:20	Represents (agree)
4:21 until 5:00	Represents (strongly agree)

#### **4.5.1 Effectiveness of internal control system in detecting fraud**

Respondents were asked to show their extent of agreement with the components of Internal Control system in detecting and preventing fraud in selected private banks in Ethiopia. These were controls environment, risk assessment, control activities, information and communication and Monitoring activities.

<b>Table 4.5 Effectiveness of internal control system in detecting fraud</b>		
	Mean	Std. Deviation
The internal control system of the bank can detect fraud and other illegal activities.	4.08	.66512
The internal control system of the bank can reduce fraud and other illegal activities	4.24	.78446
Timely supervision and implementation of strong ICS capable of revealing fraudster's mode of operations	4.21	.86217
Effective supervision and implementation of strong ICS capable of revealing fraudster's mode of operations.	3.98	1.07589
The control system able to assess the risk related fraud	4.45	.95875
The system can identify the errors that leads to misrepresentations in the financial reports	2.26	.91921
The ICS able to detect Computer frauds (improper input system, virus, program manipulations, transaction manipulations and cyber thefts)	4.46	.86469
<b>Grand Mean</b>		<b>3.95</b>

The descriptive analysis result shows the internal control system of the bank can detect fraud and other illegal activities (Mean 4.08 and SD .66512): this result shows respondents were Agreed on the statement since the mean value lays on agree range. Based on the result showed above respondents strongly agreed on internal control system of the bank can reduce fraud and other illegal activities since the mean value are 4.24, Timely supervision and implementation of strong ICS capable of revealing fraudster's mode of operations (Mean 4.21 and SD .86217): this result shows that employee or research participants were strongly agreed on the capability of the system in detecting fraudulent transactions.

Effective supervision and implementation of strong ICS capable of revealing fraudster's mode of operations (Mean 3.98 SD 1.07589): the mean value shows respondents were agreed on supervision and execution of the system can easily help the financial sector to control or minimize the occurrence of fraud, The control system able to assess the risk related fraud

(Mean 4.45 and SD .95875); the mean value shows employee or respondents of the study were strongly agreed on capability of the ICS in discovering the risk related factors. The descriptive statistics result shows respondents were strongly agree on The ICS able to detect Computer frauds (improper input system, virus, program manipulations, transaction manipulations and cyber thefts) as the mean value is 4.46. From the result table respondents were disagreed on The system can identify the errors that leads to misrepresentations in the financial reports since the mean value is 2.26.

Based on the result indicated above and the grand mean result (3.95) the internal control system that has been practiced in different bank of Ethiopia is quite effective in detecting fraudulent transactions and error. But the banking industries were not capable of addressing all and timely increasing fraud.

The result of the study was similar with Adewale (2014) the finding of the study shows internal Control System are not a substitute for good management, they can assist management. Based on the outcome of the five hypotheses which was empirically tested and the research finding the researcher concludes that internal control system and continuous internal check and help the organizations to detect fraud.

#### 4.5.2 Effectiveness of internal control system in preventing fraud

<b>Table 4.6 Effectiveness of internal control system in preventing fraud</b>		
	Mean	Std. Deviation
The bank able to establish fraud prevention policies	4.19	.91504
both on job and off job training intensively given to the employees on fraud detection and prevention	2.37	1.00067
The bank is using automated fraud prevention methods like use of surveillance	4.32	.84810
The possibility of fraud concealment is reduced by means of the integrity and the accuracy of information.	4.42	.84514
<b>Grand Mean</b>	<b>3.82</b>	

**Source: own survey, 2021**

The descriptive statistics in Table 4.6 gives the mean, standard deviation, value of the study variables. The mean the bank able to establish fraud prevention policies as shown by the number the standard deviation was .91504 and the mean value 4.19 which indicated respondents were agreed, both on job and off job training intensively given to the employees on fraud detection and prevention (Mean 2.37 and SD 1.00067): Which implies

respondents were strongly disagreed since the mean value is less than 2.61.

As the result clearly shows respondents agreed on the bank is using automated fraud prevention methods like use of surveillance since the mean value is 4.32 and SD .84810: This result implies banks are trying to use modern technologies to detect and prevent the occurrence of fraud in the banking industries.

The possibility of fraud concealment is reduced by means of the integrity and the accuracy of information (Mean 4.42 and SD .84514): This result shows employees or respondents of the study strongly agreed since the mean value is greater than 3.40.

Based on the grand mean value (3.82) internal control systems of the bank were capable of preventing the frequent occurrence of fraud. The system Ensure that a clear policy exists to separate responsibilities and helps the staff to check and examining the occurrence of fraud. But the organizations were failed to give training both on the job and off the job to increase the awareness and skill of the employees.

The finding of the study was similar with Kosmas Njanike (2011)effective internal controls contribute to better performance by financial institutions. Control system able to prevent the frequent occurrence of fraud. Banks should have in place a comprehensive internal control management process to identify; measure, monitor and control internal control system effectiveness and compliance. The finding of the study also supported by Atwine (2016) A number of fraud prevention measures were found to be in place and the study concluded that a significant and positive relationship exists between Internal Controls and fraud prevention in banks.

### 4.5.3 Effectiveness of internal control system (control environment) to detect and prevent fraud

<b>Table 4.7 The effectiveness of control environment to detect and prevent fraud</b>		
	Mean	Std. Deviation
There is clear separation of roles and responsibilities in the bank	4.42	.80454
All employees in charge of the bank's operations are aware of the guidelines of the operation	4.23	.54507
All staff in charge perform their responsibilities as per the regulations and guidelines	3.87	1.03879
The control environment in your bank is enough to attain the bank's objectives	2.11	.47551
<b>Grand Mean</b>	<b>3.65</b>	

**Source: own survey, 2021**

The above result table 4.7 indicated that from control environment items respondents are strongly agreed on there is clear separation of roles and responsibilities in the bank since the mean value is 4.42 this result shows there is a observable demarcation of job or responsibilities in the organizations. Based on the mean value (3.87 and 4.23) of the control dimensions employees or respondents were agreed on all staff in charge perform their responsibilities as per the regulations and guidelines, All employees in charge of the bank's operations are aware of the guidelines of the operation respectively.

Based on the table 4.7 shows respondents disagreed on the control environment in your bank is enough to attain the bank's objectives since the mean value of the item is 2.11 which lay on disagreed. This result shows the control environment is not capable of addressing the overall problems.

General the overall effectiveness of control environment on ICs of Ethiopian banking sector is effective through mean value of 3.65. But the control environment was not perfectly function still it needs more to achieve the objectives of the organizations. The finding of the study was similar with Kiprop (2010) carried out a study on responses to fraud related challenges by Barclays bank of Kenya and concluded that the bank had put in place fraud detection systems.

The control environment is working properly to assess the effectiveness of the fraud detection systems that had been put in place.

#### 4.5.3 Effectiveness of internal control system (Risk Assessment) to detect and prevent fraud

<b>Table 4.8 Risk Assessment on detecting and preventing fraud</b>		
	Mean	Std. Deviation
The bank has designed an appropriate strategy of identifying risks.	4.36	.51063
The bank designed a system to offer appropriate response to risks	4.21	.69145
Involvement of the internal control staff during implementation reduces the occurrence of risk.	4.17	1.04557
Promote the consistency of the company's actions with its values	2.21	.98778
<b>Grand Mean</b>	<b>3.73</b>	

**Source: own survey, 2021**

The result table 4.8 the mean value 4.36, 4.21 and 4.17 shows that respondents were agreed on bank has designed an appropriate strategy of identifying risks, bank designed a system to offer appropriate response to risks, Involvement of the internal control staff during implementation reduces the occurrence of risk respectively.

The descriptive statistics result indicated that promote the consistency of the company's actions with its values (Mean 2.21 and SD .98778): This result shows respondents were disagreed since the mean value is less than 2.61. Overall the components of internal control system (risk assessment) are effective in controlling and preventing fraud in Ethiopian banking industries. But it needs re arrangement or correction to make the organizations actions internally related with its value. The result of the study was supported by Fikiru (2018) Risk assessments become an integral part of internal control system. The management is responsible to identify and assess control risk caused by failure of internal control. The study found that The overall risk assessment can be approximated to a mean of 3.5 which

show there is effective risk assessment on ICs of Ethiopians banks. The finding was supported by Wanyama (2012) found that risk assessment effective on fraud occurrence on co-operative bank of Kenya limited and concluded that that it is quite effective strategies adequately control fraud.

#### 4.5.4 Effectiveness of internal control system (control activities) to detect and prevent fraud

<b>Table 4.9 Effectiveness of control activities in detecting and preventing fraud</b>		
	Mean	Std. Deviation
Authorization, processing, cheque signing and accounting functions are clearly segregated.	4.38	.78723
The bank invoices or requests for disbursements are backed by appropriate supporting documents	4.53	.78948
There is an up-to-date asset register	4.40	.76647
The procurement and disposal of assets procedure is strictly followed under the bank operation systems.	4.66	.60566
<b>Grand Mean</b>	<b>4.49</b>	

**Source: own survey, 2021**

From the components of internal control system: Authorization, processing, cheque signing and accounting functions are clearly segregated (Mean 4.38 and SD .78723) It implies that respondents were agreed since the mean value is higher than 3.41. The survey result shows that respondents were agreed on the bank invoices or requests for disbursements are backed by appropriate supporting documents the mean value is 4.53. As it indicated the result table there is an up-to-date asset register the mean value is 4.40 which lay on agree rang.

From the descriptive statistics result the highest mean value (4.66) given for the procurement and disposal of assets procedure is strictly followed under the bank operation systems: this result shows respondents were agreed that the organization has using the control activities in a good manner. The Overall mean of the control activities for the four questions can be estimated to 4.49 which is the respondent are in agreement about their effective control activity in their respective banking sector.

The finding of the study was similar with Parker (2014) the study found that Sarbanes-Oxley many companies this control activities to a corrective role; since the control operates after the financial reports are issued, it is effective only in identifying misstatements for

importance of accelerating balance sheet account reconciliations in order to make them detective controls and to complete them in time to identify and correct errors before the company files SEC reports.

#### **4.5.5 Effectiveness of internal control system (information and communication) to detect and prevent fraud**

<b>Table 4.10 Effectiveness of information and communication in detecting and preventing fraud</b>		
	Mean	Std. Deviation
Control information's are communicated to all stakeholders	4.42	.74910
Transactions are promptly recorded and classified to provide reliable information	4.25	.81292
The officer's responsibility and the right to access are clearly communicated	3.00	1.29038
The consequences of illegal activities are clearly understood by the stakeholders	2.50	.92927
<b>Grand Mean</b>	<b>3.54</b>	

**Source: own survey, 2021**

The above table 4.10 shows that respondents have agreed Control information's are communicated to all stakeholders that indicates a mean of 4.42 and Transactions are promptly recorded and classified to provide reliable information (Mean 4.25 and SD .81292). The officer's responsibility and the right to access are clearly communicated (Mean 3.00 and SD 1.29038): The result shows that respondents were answered neutral or indifference about the items.

The result shows that respondents were disagreed on consequences of illegal activities are clearly understood by the stakeholders (Mean 2.50 and SD .92927). This implies that there is a gap in communicating the effects of fraudulent in the banking industries to concerned bodies. Overall the result shows that information and communication are effective in fraud detection and prevention in Ethiopian banking sectors. The study findings similar with Omondi (2013) indicated that carried out that information and communication banks led to increased fraud prevention in the commercial banks and the highest application was on enhancing quality of



financial reporting. The most prevalent type of fraud in the banking sector was fraudulent expense claims.

#### 4.5.6 Effectiveness of internal control system (Monitoring activities) to detect and prevent fraud

<b>Table 4.11 Monitoring Activities</b>		
	Mean	Std. Deviation
The bank has monitoring activities in relation to operational activities.	4.32	.78967
Monitoring the internal control system of the bank is important to achieve the bank objectives.	4.58	.54079
Monitoring helps to determine whether controls under the bank are effective.	4.39	.61944
Internal control monitoring activities of the bank could reduce the occurrence of fraud and illegal activities.	4.62	.62265
Appropriate actions are applied based on control findings and recommendations.	2.21	1.04886
<b>Grand Mean</b>	<b>4.02</b>	

**Source: own survey, 2021**

The descriptive statistics in Table 4.11 gives the mean, standard deviation value of the study variables. The bank has monitoring activities in relation to operational activities, Monitoring the internal control system of the bank is important to achieve the bank objectives, Monitoring helps to determine whether controls under the bank are effective and Internal control monitoring activities of the bank could reduce the occurrence of fraud and illegal activities the mean value was 4.32, 4.58, 4.39 and 4.62 Respectively.

From the result table appropriate actions are applied based on control findings and recommendations (Mean 2.21 and SD 1.04886): This shows that respondents were disagreed that remedial action was not made based on the finding of control system. The overall grand mean value 4.02 shows that all items of the monitoring activities are effective in detecting and preventing fraud in the banking sectors. The finding of were similar with (SOX Guidance, 2007)

the study found that All components are relevant to each objectives category. When looking at any monitoring activities are effective in making operations is effective and efficient.

#### 4.5.7 Challenges in Implementing Internal control system

<b>Table 4.12 Challenges in Implementing Internal control system</b>		
	Mean	Std. Deviation
Separation of duties (Assigning different people the responsibilities for effective internal controls)	4.39	.48902
Policies and procedures related factors (provide transparency and consistency and allow for specific roles to be easily be assigned to specific individuals)	2.13	.97398
User access rights for information systems (employees granted to information systems to perform their job responsibilities)	1.70	.68511
Transparency in reporting the performance of internal control system in fraud control for different stakeholders.	1.95	.92445
<b>Grand Mean</b>	<b>2.54</b>	

**Source: own survey, 2021**

As the result table shows that respondents were agreed that Separation of duties (Assigning different people the responsibilities for effective internal controls) as it indicates the mean value of 4.39; which implies that separation of duties and responsibilities were not a challenging factors in implementing internal control system in the banking sectors. The remaining factors (Policies and procedures related factors, User access rights for information systems (employees granted to information systems to perform their job responsibilities and Transparency in reporting the performance of internal control system in fraud control for different stakeholders) are a most a challenging or determining factors for implementing internal control system since the mean value is 2.13, 1.70 and 1.95 respectively. overall the study indicated that the above mentioned items are the factors which can affect effective implementation of internal control system.

## **4.6 Econometrics Analysis**

In this sub sections the study was discussed both Pearson correlation and multiple regression analysis to identify the effects of independent variables (components of internal control system) on the dependent variables (fraud detection and prevention).

### **4.6.1 Pearson Correlations**

Correlation will measure the linear relationship between two variables. The level of association as measured by Pearson's co- efficient falls between -1.0 and +1.0, which indicates the strength and direction of association between the two variables.

The interpretation of the result a correlation result between 0 to 1 implies positive relationship, 0 (zero) for no relationship, 1 for perfect positive relationship, -1 for perfect negative relationship and between -1 to 0 indicate the existence of negative relationship Berndt (2005). Though it indicates the existence of a positive or negative relationship, the strength of such a relationship is not high when the results fall below  $\pm 0.61$  (Oogarah-Hanuman, 2011).

		Depen	control	risk	activities	informa tion	Monitori ng
Dependent	Pearson Correlation	1	.004	.843**	.457**	.009	.801**
	Sig. (2-tailed)		.959	.000	.000	.901	.000
	N	210	210	210	210	210	210
control	Pearson Correlation	.004	1	-.028	-.030	.036	.208**
	Sig. (2-tailed)	.959		.683	.670	.601	.002
	N	210	210	210	210	210	210
risk	Pearson Correlation	.843**	-.028	1	.471**	-.048	.255**
	Sig. (2-tailed)	.000	.683		.000	.492	.000
	N	210	210	210	210	210	210
activities	Pearson Correlation	.457**	-.030	.471**	1	.027	.137*
	Sig. (2-tailed)	.000	.670	.000		.702	.048
	N	210	210	210	210	210	210
informatio n	Pearson Correlation	.009	.036	-.048	.027	1	.216**
	Sig. (2-tailed)	.901	.601	.492	.702		.002
	N	210	210	210	210	210	210
Monitoring	Pearson Correlation	.207**	.208**	.255**	.137*	.216**	1
	Sig. (2-tailed)	.003	.002	.000	.048	.002	
	N	210	210	210	210	210	210
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

**Source: own computation, 2021**

The correlation matrix between different factors was shown in the above Table. By looking at the correlation matrix between the factors it can be understood that risk assessment was, the most correlated element with fraud detection and prevention but it cannot be said fraud detection and prevention was highly influenced with this variable. In other words, this matrix does not show the causation of the variables rather showing the magnitude of their association.

From the Pearson correlation result fraud detection and prevention and risk Assessment ( $r = .5843$  and  $p = 0.00$ ). This result shows detection and prevention of fraud and risk assessment has a positive and statistically significant relationship since the  $p$  value is less than 0.05. The risk clearly shows that when internal control system (risk assessment) related activities is increased in the organizations fraud can be easily detected and prevented.

Based on the correlation result the dependent variable (fraud detection and prevention) and the explanatory variable (control activities) have statistically significant relationship with each other since the  $p$  value is less than 0.05. The result implies that whenever the bank is capable to control the overall activities of the banking service like Authorization, cheque signing and accounting etc, this will help the organizations to detect fraud attempts and in the long run it will enable the sector to prevent the occurrence since both variables have an association.

The next predicting factor was monitoring activities. This also shows a positive and significant correlation with fraud detection and prevention in the banking sector. The correlation between monitoring and fraud detection and prevention was ( $r = .801$  and  $P = 0.00$ ) which shows that when there is a strong monitoring activities in the banking sector the bank will be able to control the occurrence of fraud. The result depicted that Internal control monitoring activities of the bank could reduce the occurrence of fraud and illegal activities.

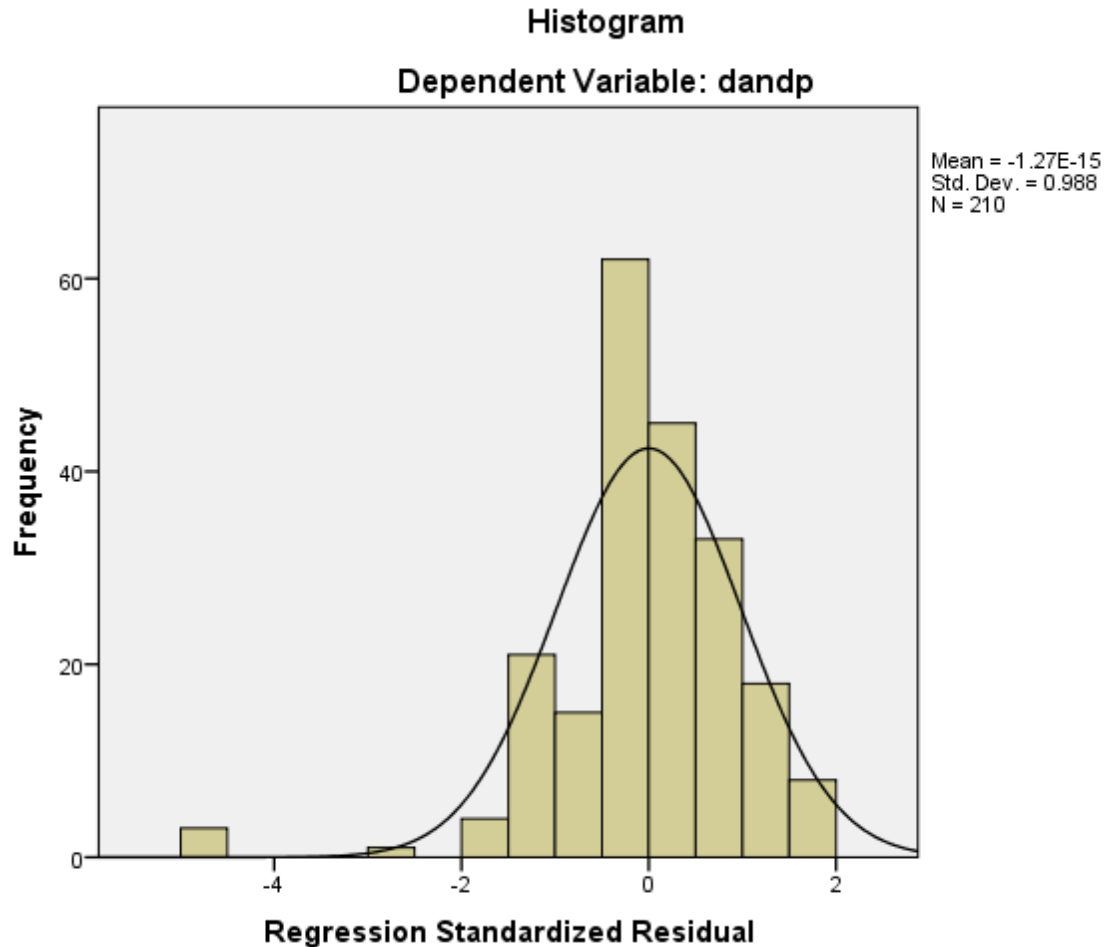
The other factors or variables (control environment and information communication) have no association since the  $p$  value of each variable is greater than 0.05.

#### **4.6.2 Multiple Regression Analysis**

This study was used multiple regression analysis to examine the cause and effect relationship among explanatory variables and fraud detection and prevention. In order to analyze the clear effect of the components of internal control system on fraud detection and prevention the study was organized by including the explanatory variables (control environment, risk assessment, control activities, information and communication and monitoring activities). Here below the study was discussed regression assumptions.

## Normality Test

Figure 4.3 Normality Test



According to Smith and Wells (2006) kurtosis is defined as —a property of a distribution that describes the thickness of the tails. The thickness of the tail comes from the amount of scores falling at the extremes relative to the Gaussian distribution. skewness is a measure of symmetry, or more precisely, the lack of symmetry. A distribution, or data set, is symmetric if it looks the same to the left and right of the center point. Multiple regressions require the independent variables to be normally distributed. The normal distribution of the data can be described by the skewness and kurtosis statistics.

In order to test the first assumptions of normality of distribution, skewness and kurtosis statistics was computed from the data obtained on the survey, in the above figure. All the skewness and kurtosis statistics needed to be within the acceptable ranges of  $\pm 1.0$ . In the present study since all the values of skewness and kurtosis for each variable are within an acceptable range, the data is said to be normally distributed

### Multicollinearity Test

**Table 4.14 collinearity test**

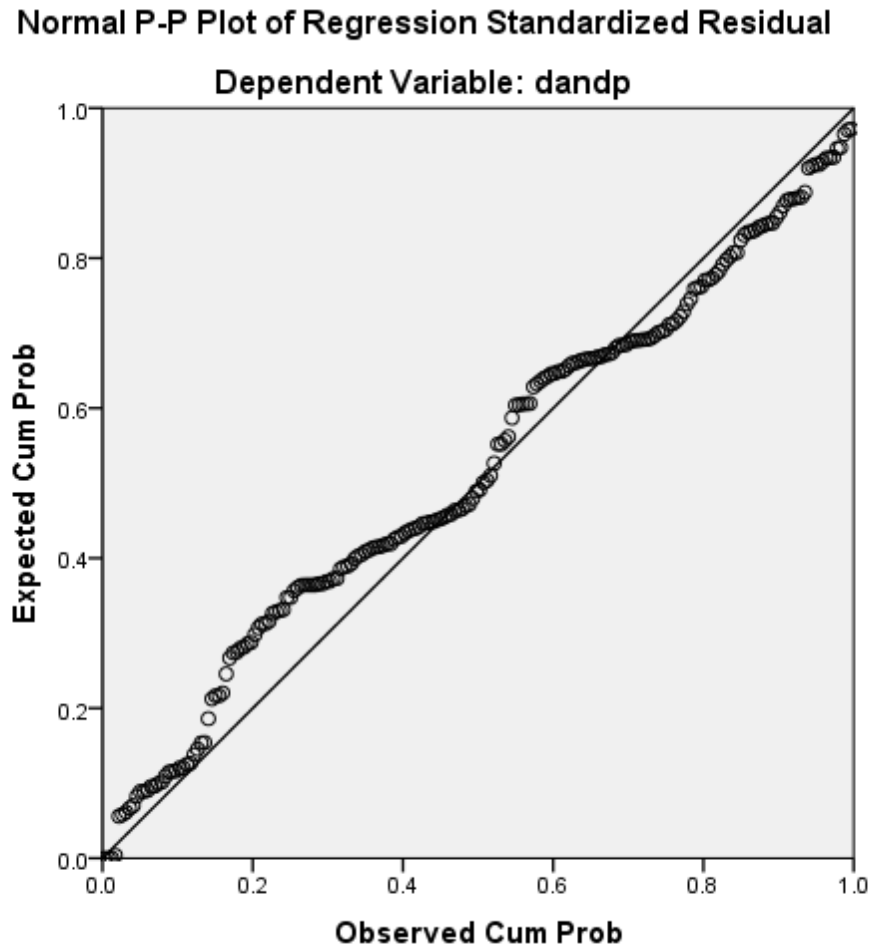
Coefficients <sup>a</sup>			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Control Environment	.949	1.054
	Risk assessment	.727	1.375
	Control activities	.775	1.290
	Information and communication	.939	1.065
	Monitoring activities	.840	1.191
<b>a. Dependent Variable: fraud detection and prevention</b>			

The multi-co linearity problem will build interpretation of variables difficult or perhaps not possible, because it is tough to verify the clear relationships between dependent and predictor variables. As a result, in multi-co linearity, the assessments of the relative strength of the explanatory variables and their joint result are unreliable (*Garson 2008*). In keeping with Drazin and Rao (1999), the rule of thumb is that tolerance values bigger than 0.2 do not have multi-co linearity. While the VIP result should be not greater than 10.

The VIF values of all the explanatory variables of internal control system components were less than the cut-off (rule of thumb) i.e. Thus, the VIF values of the independent variables were Control Environment (1.054), Risk assessment (1.375), Control activities (1.290), Information and communication (1.065) and Monitoring activities (1.191) all having values below the cut-off. Hence, the researcher can interpret it, as there were no serious multi-co linearity problems but some less degree of collinearly from natural relationships of the variables may be happened.

## Linearity Relationship

Figure 4.4 Linearity Test

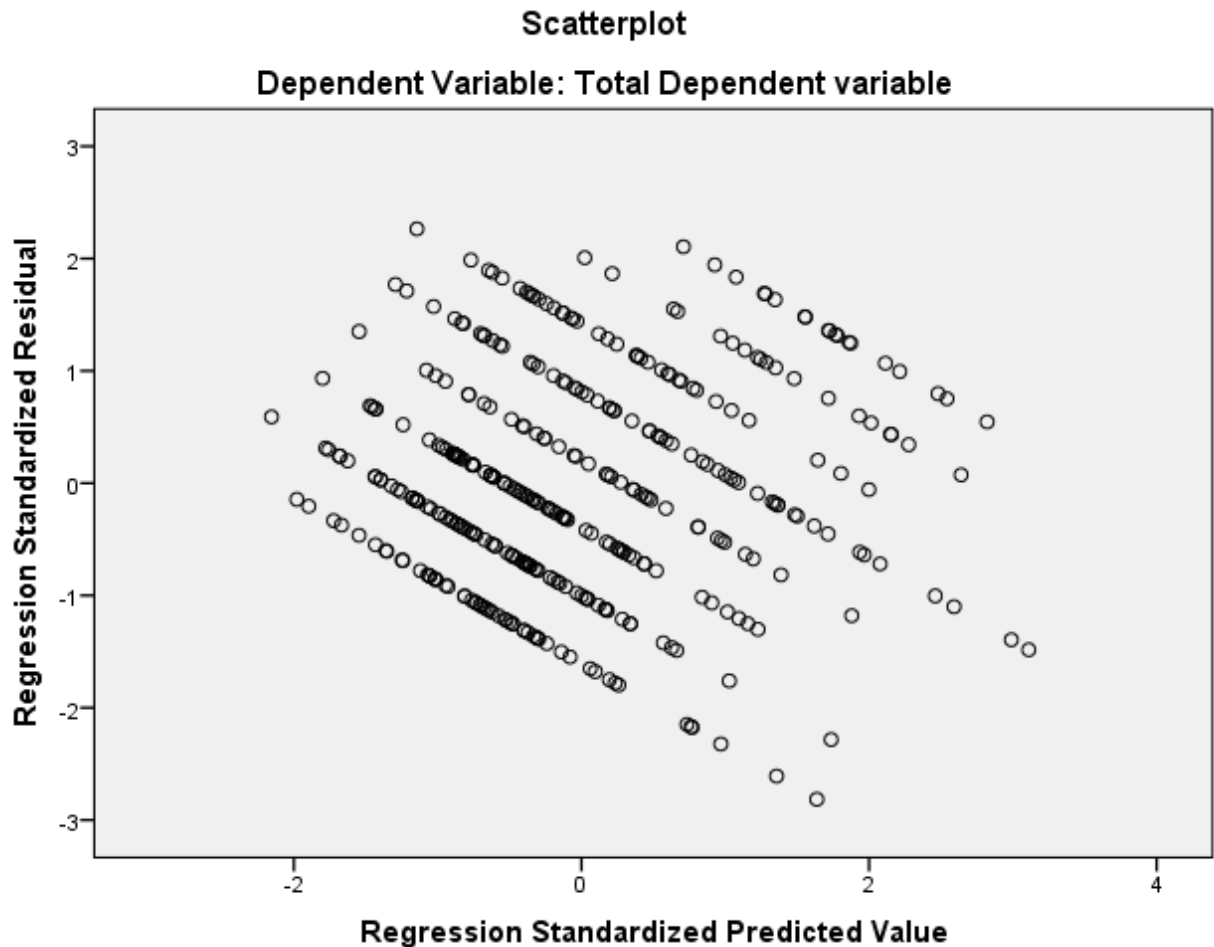


This assumption of regression shows that the linear relationships between dependent and the independent variables. As depicted in the above scatter plot, figure, the visual inspections of the scatter plot shows there exists a linear relationship between the predictors (components of internal control system) and the predicted variable (fraud detection and prevention). This means that, a unit increase of the one or all predictors causes respective increments for the market share.



## Heteroscedasity Test

Figure 4.5 Heteroscedasity Test



This condition for performing multiple regressions is homogeneity of variance (equal variance), in which the model errors are expected to have an unknown but finite variance that is constant across all levels of the predictor variables. This assumption can be verified visually by looking at a plot of the regressions' standardized residuals (errors).

## Model Summary

**Table 4.15 Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.900 <sup>a</sup>	.810	.805	.39038

a. Predictors: (Constant), control environment, risk assessment, control activities, information and communication, monitoring activities

This statistics indicates the percentage of the variance in the dependent variables that the independent variables explain collectively. R-squared measures the strength of the relationship between your model and the dependent variable on a convenient 0 – 100% scale. From the model summary result the explanatory variables 81 % explain the dependent variables. This result shows the model is overall good to predict the dependent variables (fraud detection and prevention). From the result components of internal control system 81% explains fraud detection and prevention status in the study organizations.

**Table 4.16 ANOVA result**

### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	132.653	5	26.531	174.092	.000 <sup>b</sup>
	Residual	31.088	204	.152		
	Total	163.741	209			

a. Dependent Variable: fraud

b. Predictors: (Constant), control environment, risk assessment, control activities, information and communication, monitoring activities

The F-test was used to test the significance of the regression model as a whole. The computed F values were then tested for statistical significance and demanding value P=0.05 is mostly taken as marking an appropriate boundary of significance. P has to be lesser than 0.05(5%) for

the F ratio to be vital (Saunders, Lewis, and Thorn hill, 2007). If F ratio is significant at  $p < 0.05$ , reject the thought of no variations and settle for that these are very different from zero (Cardinal and Aitken, 2006).

From the ANOVA model the result reveals that a p- value were 0.00 which means the regression model is overall significant since the P value is less than 0.05 ( $P < 0.05$ ). From the table the overall components of internal control system (factors) have an impact on the in detecting and preventing fraud in Ethiopian banking sector.

**Table 4.17 regression coefficients**

Coefficients <sup>a</sup>					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.668	.617		-1.084	.280
Control environment	.135	.211	.020	.642	.522
risk assessment	.510	.039	.561	13.116	.000
control activities	-.248	.348	-.026	-.713	.476
information and communication	.391	.185	.065	2.114	.036
monitoring activities	.620	.062	.435	9.980	.000

a. Dependent Variable: dandp

By recalling the model specifications of the variables from the chapter three of methodology part, it was said that, the unstandardized coefficients ( $\beta_1$  up to  $\beta_5$ ) are the coefficients of the estimated regression model. The model variable's specifications were written in line with each model, as it is now rewritten in the above table 4.17. Hence, the model of fraud detection and prevention can be written by including error term ( $\epsilon$ ), in the below form. From the variable that has been incorporated in the regression models control activities and Control environment are statistically insignificant or it doesn't have a cause and effect relationship with fraud detection and prevention in the banking sector.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n + \epsilon$$

From the regression result risk assessment has statistically significant relationship with fraud detection and prevention since the p value is 0.000 which is less than the cut point. By keeping other variables constant a unit increase in risk assessment practice fraud detection and prevention will also increased by 51 percents. This result shows when the bank focused in designing and implementing a system that offer appropriate response to risk fraud can be easily detected. This finding was similar with fikru (2018) he found that risk assessment related factors has an impact on controlling the prevalence of fraud in Ethiopian banking industries.

As the result shows that information and communication has a positive and statistically significant impacts on fraud detection and prevention. By keeping other variables constant a unit increase in information and communication service in the banking sector it will increase fraud detection and prevention by 39 percents. This implies that whenever the bank works hard to improve information and communication flow to address the problems at the right time, this will enable the organizations to control and prevent the frequent occurrence of fraud. The finding was supported by Wanyama (2012) investigated the effectiveness of fraud response strategies adopted by co-operative bank of Kenya limited and concluded that that information and communication has a positive and strong impacts on strategies and adequately control fraud.

The regression result shows that monitoring activities has statistically significant relationship with fraud detection and prevention since the p value is 0.000 which is less than the 0.05. By keeping other variables constant a unit increase in monitoring activities practice fraud detection and prevention will also increase by 62 percents. This result implies that if the bank has work to improve the monitoring activities in control system the bank can capable of controlling fraud. The result that has been discussed is similar with IFAC (2012) and Fikru (2018) found that there is significant relationship between monitoring and fraud prevention & detection in Ethiopian Banking industry. The monitoring practiced by commercial Banks are able to prevention & detection fraud and by the IFAC (2012) which indicates that monitoring is a vital component of ICS and if applied properly it is able detect any form of error or malpractices early enough before they cause major harm to the organization.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

The chapter presents the general findings of the research in the context of the central ideas underpinning the objectives of this research. The key components of the chapter include the summary of findings, recommendations and conclusion.

#### 5.1 Summary of Major Findings

The purpose of the study was to examine the effectiveness of internal control system in detecting and preventing fraud in the case of Ethiopian banking industries. To make the analysis the study was used descriptive statistic like mean, standard deviation, correlation, and regression were used. In this research the study has used five explanatory variables or components of internal control system to measure their effectiveness in detecting and preventing fraud in Ethiopian Banking sector. The study revealed that from different types of fraud that has been committed in different financial sectors theft and money laundering frequently, this will have a negative and long term effects on the financial sector growth. The finding of the study clearly shows that fraud occurs by the Bank employees who have knowledge of the systems as well as classified and confidential information together with the external bodies mostly the customer of the banks can give them the opportunity to commit frauds.

From the result study found that the banking sector now they are using internal control system and financial statement auditors to conduct their audits or investigation in such a way so as to obtain reasonable assurance that financial statements are free from fraud. As it discussed the study shows that fraud prevention methods were not updated timely since fraudulent transactions are getting complicated and focused on technology advancement. The bank was failed to revised and analyze the effectiveness of the fraud prevention methods that has been used by the banking sectors.

As per the finding of the study the banking sector was vulnerable to fraud due to different causes like Inexperience employees are helpless in conferring unexpected extortion by falling to the structure of various traps of fraudsters. Employees would engage in fraud when fraud policies are not vividly set, as well as training for guiding employees. Based on the grand

mean value (3.82) internal control systems of the bank were capable of preventing the frequent occurrence of fraud. The system Ensure that a clear policy exists to separate responsibilities and helps the staff to check and examining the occurrence of fraud. But the organizations were failed to give training both on the job and off the job to increase the awareness and skill of the employees.

The effectiveness of control environment on ICs of Ethiopian banking sector is effective through mean value of 3.65. But the control environment was not perfectly function still it needs more to achieve the objectives of the organizations. The components of internal control system (risk assessment) are effective in controlling and preventing fraud in Ethiopian banking industries. But it needs re arrangement or correction to make the organizations actions internally related with its value.

The control activities for the four questions can be estimated to 4.49 which is the respondent are in agreement about their effective control activity in their respective banking sector. The fourth components of internal control system shows that information and communication are effective in fraud detection and prevention in Ethiopian banking sectors. The overall grand mean value 4.02 shows that all items of the monitoring activities are effective in detecting and preventing fraud in the banking sectors.

The Pearson correlation result shows that from five explanatory variables (control environment and information communication) has no association since the p value of each variables are greater than 0.05. But the other variables like risk assessment, control activities and monitoring activities has a positive and statistically significant relationship with fraud detection and prevention.

Regression result shows that from the variables which incorporated in the model control activities and Control environment are statistically insignificant or it doesn't have a cause and effect relationship with fraud detection and prevention in the banking sector. The other variable has statistically significant relationship with fraud detection and prevention since the p value less than the 0.05.

## **5.2 Conclusion**

Based on the finding of the research the study was concluded that fraud has been committed by integration of employee with customer of the banks. This makes the internal control system weak or ineffective to control the prevalence or occurrence of fraud. Depending on the finding of the study fraud protection systems were not updated on a timely basis, in different private banking sector despite the fact that fraudulent transactions are becoming more complex and focused on technological innovation.

Over all the components of the internal control system (Control environment, risk assessment, control activities, information and communication and monitoring activities) are effective in addressing or alleviating and preventing the frequent occurrence of fraud in different private banks of Ethiopia. But still in some aspects of the control system it needs re arrangement and implementing a clear polices to minimize the effects of fraud on financial growth of the private banking sectors.

Based on the finding of the study it is possible to conclude that risk assessment, information and communication and monitoring activities had a positive and statistically significant impact on fraud detection and prevention. By keeping other variables constant a unit increase in those variables it will increase fraud detection and prevention by the coefficient amount. So working to on the aspects of internal control system can enable the Ethiopian private banking sector to detect the fraud before causing an effect on the financial growth and also helps to prevent the system of the bank from the occurrence of illegal activities.

## **5.3 Recommendations**

Based on the findings of the research, the following recommendations are proposed:

- ✓ To eliminate the negative effects of employee fraud Bank employees should be rotated on a regular basis, the technologies used should be updated on a regular basis, and large-value transactions should be handled by more than one person. Internal auditors can, of course, continue to win the war against fraud and scams by sticking to the basics, such as education, technological proficiency, and the support of good management.

- ✓ There is no simple way to squash fraud, but by implementing the right mix of technologies and prevention techniques and put additional controls in place, including rigorous approval procedures and careful separation of duties.
- ✓ To keep the Ethiopian private bank safe from ever-increasing fraud, employees should be provided on-the-job and off-the-job training to help them understand how detrimental fraud can be to the company. They must be able to spot the indications of fraud and know how to report it. Furthermore, treasury workers will need to be educated on how to properly use the company's cash.
- ✓ The private bank should work together to detect and prevent fraud by developing a centralized fraud controlling mechanisms. This system will help the Bank build a fraud control system and boost its investigation capabilities.
- ✓ Last, but not the least, effective customer education and communications programs—helping customers recognize how to prevent fraud, but also helping them understand their own responsibilities—should go hand-in hand with sophisticated cyber security measures and also the Ethiopian private banks should give more emphasis to update their technology and policies to minimize the ever increasing fraud.



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**ST. MARY'S UNIVERSITY COLLEGE**

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## **Appendix**

### **Department of MBA in Accounting and Finance**

Dear participants,

I am conducting a study on **“the effectiveness of internal control system for detecting and preventing fraud”**. This research is conducted in partial fulfillment of the masters of Degree in Business and Administration (**MBA**) at St, Mary’s university school of graduate. The survey is intended to explore the effectiveness of internal control measures against fraud detection and prevention in Selected commercial banks in Ethiopia, To Assess the effectiveness of the preventive measures aimed at mitigating fraud challenges in banks, To examine the main causes of Fraud in Ethiopian banking industries and To assess the challenges that hinder the effective implementation of internal control system in fraud detection and prevention.

The questionnaire will not take more than 15 minutes of your time. I do not foresee that you will experience any negative consequences by completing this questionnaire. The researcher will keep any individual information provided herein confidential, not to let it out of his possession, and to analyze the feedback received only at a group level. It will be a great contribution if you may complete all the items covered in the questionnaire since your opinion is of utmost importance for this study.

I thank you in advance for sharing your valuable experience and time in completing the questionnaire.

## Part I: Background Information

1. Sex            1) Female                2) Male   

### 2. Educational level:

1) Diploma        2) Degree        3) Masters and above   

### 3. In which age group are you?

1) 25 and below        2) 26-35        3) 36-45                4) 46-55      
5) Above 56   

### 4. How long have you been working for your current organization?

1) Below 1 years        2) 1-5 years        3) 6-10 years        4) 11-15 years      
5) Above 15 years   

## Part II: Questions related with specific objectives

### The Effectiveness of Internal Control system in fraud Prevention and detection

#### 1. What type of fraud repeatedly committed in your Bank?

- A. Loan and Letter of credit related fraud
- B. Money Transfer
- C. Identity Theft
- D. Forged cheque, foreign and local cash
- E. Accessing Dormant account
- F. Money Laundering
- G. Account opening fraud
- H. ATM and Credit card fraud

- I. Other
- 2. **By which parties is Fraud mostly committed in your banks?**
  - A. Employees
  - B. Customer
  - C. Employees Integrated with customer
- 3. **How fraud detected in your bank?**
  - A. By accident/chance
  - B. Internal control system
  - C. External audit
  - D. Internal audit
- 4. **How often do fraud prevention methods get reviewed?**
  - A. Quarterly
  - B. Half yearly
  - C. Annually
  - D. less frequently
  - E. Continually
- 5. **What are the main causes of fraud in the banking sectors?**
  - A. Inadequate end use monitoring
  - B. Lack of knowledge regarding internal control system
  - C. Overburdened staffs
  - D. Ineffective fraud control policy

**Effectiveness of ICS in Fraud prevention and Detection**

Instruction: Please indicate the extent to which you either agree or disagree with the following statements by marking a tick mark  $\surd$  or  $\times$  in the appropriate column to the right side where

**1= strongly disagree    2=Disagree    3=Neutral    4=Agree    5=strongly agree**

<b>No</b>	<b>ICS Effectiveness in Detecting Fraud</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	The internal control system of the bank can detect fraud and other illegal activities.					
2	The internal control system of the bank can reduce fraud and other illegal activities					
3	Timely supervision and implementation of strong ICS capable of revealing fraudster's mode of operations.					
4	Effective supervision and implementation of strong ICS capable of revealing fraudster's mode of operations.					
5	The control system able to assess the risk related fraud					
6	The system can identify the errors that leads to misrepresentations in the financial reports					
7	The ICS able to detect Computer frauds (improper input system, virus, program manipulations, transaction manipulations and cyber thefts)					
<b>No</b>	<b>ICS Effectiveness in preventing Fraud</b>					
1	The bank able to establish fraud prevention policies					
2	both on job and off job training intensively given to the employees on fraud detection and prevention					
3	The bank is using automated fraud prevention methods like use of surveillance					
4	The possibility of fraud concealment is reduced by means of the integrity and the accuracy of information.					

### 2.3 Questions on Explanatory variables of the study

No	Control Environment	1	2	3	4	5
1	There is clear separation of roles and responsibilities in the bank					
2	All employees in charge of the bank's operations are aware of the guidelines of the operation					
3	All staff in charge perform their responsibilities as per the regulations and guidelines					
4	The control environment in your bank is enough to attain the bank's objectives					
	<b>Risk assessment of IC's</b>					
1	The bank has designed an appropriate strategy of identifying risks.					
2	The bank designed a system to offer appropriate response to risks					
3	Involvement of the internal control staff during implementation reduces the occurrence of risk.					
4	Promote the consistency of the company's actions with its values					
No	Control activities of IC's	1	2	3	4	5
1	Authorization, processing, cheque signing and accounting functions are clearly segregated.					
2	The bank invoices or requests for disbursements are backed by appropriate supporting documents					
3	There is an up-to-date asset register					
4	The procurement and disposal of assets procedure is strictly followed under the bank operation systems.					



<b>No</b>	<b>Information &amp; communication of IC's</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	Control information's are communicated to all stakeholders					
2	Transactions are promptly recorded and classified to provide reliable information					
3	The officer's responsibility and the right to access are clearly communicated					
4	The consequences of illegal activities are clearly understood by the stakeholders					
<b>No</b>	<b>Monitoring activities of IC's</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	The bank has monitoring activities in relation to operational activities.					
2	Monitoring the internal control system of the bank is important to achieve the bank objectives.					
3	Monitoring helps to determine whether controls under the bank are effective.					
4	Internal control monitoring activities of the bank could reduce the occurrence of fraud and illegal activities.					
5	Appropriate actions are applied based on control findings and recommendations.					
<b>No</b>	<b>Challenges in implementing ICS</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	Separation of duties (Assigning different people the responsibilities for effective internal controls)					
2	Policies and procedures related factors (provide transparency and consistency and allow for specific roles to be easily be assigned to specific individuals)					
3	User access rights for information systems (employees granted to information systems to perform their job responsibilities)					
	transparency in reporting the performance of internal control system in fraud control for different stakeholders.					

**If you have any additional comment or suggestion, please add in the given space below.**

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