

**MODERATING EFFECT OF AUDIT QUALITY ON THE RELATIONSHIP
BETWEEN BOARD CHARACTERISTICS AND THE LIKELIHOOD OF
FINANCIAL STATEMENT FRAUD AMONG MANUFACTURING
FIRMS LISTED IN EAST AFRICA**

**BY
LUCAS EKIRU KAITUKO**

**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS
AND ECONOMICS IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE AWARD OF MASTER OF BUSINESS ADMINISTRATION
(AUDITING AND FORENSIC ACCOUNTING)**

MOI UNIVERSITY

2022

DECLARATION

Declaration by Candidate

This project is my original work and has not been presented for a degree in any other university. No part of this project is to be reproduced without the consent of the owner and/or Moi University.

Signature **Date**

Lucas Ekiru Kaituko
SBE/PGM/20/17

Approval by the Supervisors

This project has been submitted with our approval as university supervisors.

Signature **Date**

Dr. Stephen Chelogoi

Department of Accounting & Finance
School of Business & Economics,
Moi University, Kenya

Signature **Date**

Dr. Githaiga Nderitu

Department of Accounting & Finance
School of Business & Economics,
Moi University, Kenya

DEDICATION

I vehemently dedicate my dissertation work to my family and many friends who have never failed to give financial and moral support, inspiration, strength and push for tenacity when I thought of giving up and continually provided their spiritual and emotional encouragement support throughout the study period.

ACKNOWLEDGEMENT

First and foremost, praises and thanks to God, the Almighty, for His showers of blessings throughout my research work to complete this study successfully.

Many people have remarkably contributed to this study, a few of which I need to mention and express my gratitude. I most sincerely wish to thank my family for their encouragement moral support they extended to me that made this work a success. I am grateful to my supervisors, Dr Githaiga Nderitu and Dr Stephen Chelogoi for their tireless guidance throughout the program. I have benefitted greatly from your wealth of knowledge and meticulous guidance I am also grateful to Moi university panelists who so generously took time out of their busy schedules to participate in the defenses and make this project possible.

Finally, Special thanks goes to my cousin and brother William Loito for the keen interest shown to complete this research work successfully.

ABSTRACT

Incidents of financial statement fraud and the ensuing collapse of large corporate entities have eroded public confidence in financial markets, financial information, and the accounting profession. Over the last decade, East African capital markets regulators enacted corporate governance guidelines and financial reporting standards to mitigate agency problems associated with financial statements fraud. Though studies have demonstrated that board qualities reduce the risk of financial statement fraud, the findings are conflicting and inconclusive. Moreover, research indicates that the board's ability to oversee managers is strengthened by audit quality. However, the literature on the relationship between board qualities, audit quality, and financial statement fraud is limited. This study aimed to investigate the moderating effect of audit quality on the relationship between board characteristics and the likelihood of financial statement fraud among listed manufacturing firms on securities exchanges in East Africa. Specifically, the study sought to examine the extent to which board independence, frequency of board meetings, board gender diversity and board expertise influences the likelihood of financial statement fraud among listed manufacturing firms on the securities exchanges in East Africa. The study further assessed the moderating role of audit quality on the relationship between board independence; frequency of board meetings; board gender diversity, board expertise and the likelihood of financial statement fraud. The study was grounded on the agency, resource dependence, and fraud diamond theories. An explanatory and longitudinal design was used in the study. Annual financial statements were employed as the study's source of data, covering the years 2007 through 2021. The sample consisted of 15 manufacturing companies listed on East African securities exchanges. Utilizing STATA version 13, descriptive and inferential statistics were used to analyze the data. The results of the probit regression model were used to test the hypotheses. The study established that board independence ($\beta = -2.064$, ρ -value <0.05), frequency of board meetings ($\beta = -9.046$, ρ -value <0.05), board gender diversity ($\beta = -2.035$, $\rho < 0.05$) and board expertise ($\beta = -3.668$, $\rho < 0.05$) had a negative and significant effect on the likelihood of financial statement fraud. Further, the study found that audit quality moderated the relationship between board independence ($\beta = -2.065$, $\rho < 0.05$), frequency of board meetings ($\beta = -2.512$, $\rho < 0.05$), board gender diversity ($\beta = -2.267$, $\rho < 0.05$) and board expertise ($\beta = 3.342$, $\rho < 0.05$). The agency theory proposition supports this study's findings that board attributes are vital in mitigating unethical managerial behaviors such as financial statement fraud. Based on the results, the study concluded that audit quality moderated the relationship between board characteristics and the likelihood of financial statement fraud. The findings have several implications. First, listed manufacturing firms should have a higher proportion of outside directors and more board members should be knowledgeable in accounting and finance. Secondly, the findings highlight the importance of board gender diversity among East African manufacturing listed firms to constrain the likelihood of financial statement fraud, which calls for policy interventions. Shareholders should consider board characteristics that enhance board effectiveness in mitigating the likelihood of financial statement fraud. To achieve this, boards must be independent, hold frequent meetings, have a high percentage of members with financial expertise, and more women should be included on boards. The firm should also consider providing board members with training in subjects like finance and accounting to equip them with the knowledge and skills necessary to spot financial fraud. This study was limited to listed East African manufacturing firms and four board characteristics. Future research may also consider additional board characteristics, unlisted companies, and other institutional settings to shed more light on the connection between board characteristics, audit quality and the possibility of financial statement fraud.

TABLE OF CONTENT

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT.....	v
TABLE OF CONTENT	vi
LIST OF TABLES	x
LIST OF FIGURES	xi
ACRONYMS AND ABBREVIATIONS	xii
OPERATIONAL DEFINITION OF TERMS	xiii
CHAPTER ONE	1
INTRODUCTION.....	1
1.0 Introduction.....	1
1.1 Background of the Study	1
1.1.1 East African Securities Exchanges Association	9
1.2 Statement of the Problem.....	12
1.3 Objectives	14
1.3.1 General Objectives.....	14
1.3.2 Specific Objectives	14
1.4 Research Hypothesis.....	15
1.5 Significance of the Study	16
1.6 Scope of the Study	17
CHAPTER TWO	18
LITERATURE REVIEW	18
2.1 Introduction.....	18
2.2 Concepts.....	18
2.2.1 Financial Statement Fraud	18
2.2.2 Board Characteristics	20
2.2.2.1 Board Independence	21
2.2.2.2 Frequency of Board Meetings	22
2.2.2.3 Board Gender Diversity.....	23
2.2.2.4 Board Expertise	25
2.2.3 Audit Quality	27

2.3 Theoretical Perspective	31
2.3.1 Agency Theory.....	31
2.3.2 Fraud Diamond Theory	33
2.3.3 Resource Dependency Theory	35
2.4 Empirical Review.....	36
2.4.1 Board Independence and Likelihood of Financial Statement Fraud.....	36
2.4.2 Frequency of Board Meetings and Likelihood of Financial Statement Fraud.....	38
2.4.3 Board gender Diversity and Likelihood of Financial Statement Fraud	40
2.4.4 Board Expertise and Likelihood of Financial Statement Fraud.....	43
2.4.5 Moderating Effect of Audit Quality on the Relationship between Board Characteristics and the Likelihood of Financial Statement Fraud	44
2.5 Control Variables	47
2.5.1 Firm Size and Likelihood of Financial of Financial Statement Fraud.....	47
2.5.2 Firm Age and Likelihood of Financial of Financial Statement Fraud	47
2.5.3 Firm Performance and Likelihood of Financial of Financial Statement Fraud.....	48
2.6 Research Gap	48
2.7 Conceptual Framework.....	50
CHAPTER THREE	51
RESEARCH METHODOLOGY	51
3.1 Introduction.....	51
3.2 Research Design.....	51
3.3 Target Population.....	51
3.3.1 Inclusion and Exclusion Criterion	52
3.4 Data Collection	52
3.5 Measurement of Variables	52
3.5.1 Dependent Variable	52
3.5.1.1 Likelihood of Financial Statement Fraud	52
3.5.2 Independent Variable	58
3.5.2.1 Board Independence	58
3.5.2.2 Frequency of Board Meetings Frequency	58
3.5.2.3 Board Gender Diversity.....	58
3.5.2.4 Board Expertise	59
3.5.3 Moderating Variable	59
3.5.3.1 Audit Quality	59

3.5.4 Control Variables	60
3.5.4.1 Firm Size.....	60
3.5.4.2 Firm Age.....	60
3.5.4.3 Firm Performance	60
3.6 Data Analysis	60
3.6.1 Descriptive Statistics.....	60
3.6.2 Inferential Statistics	61
3.7 Model Specification	61
3.8 Diagnostic Tests and Assumption of Multiple Linear Regression	63
3.8.1 Normality Test	63
3.8.2 Multicollinearity	64
3.8.3 Unit Root Test.....	64
3.9 Probit Regression Technique	65
CHAPTER FOUR.....	67
DATA ANALYSIS, PRESENTATION AND INTERPRETATION	67
4.1 Introduction.....	67
4.2 Descriptive Statistics.....	67
4.3 Correlation Analysis	68
4.4 Diagnostic Statistics.....	70
4.4.1 Normality test.....	70
4.4.2 Test for stationary / Unit Root Test	70
4.4.3 Multicollinearity	72
4.4.4 Model specification.....	73
4.4.5 Hosmer-Lemeshow of fit test.....	73
4.5 Results of the Probit Regression Analysis	74
4.5.1 Testing the Effect of the Control Variables	74
4.5.2 Testing the Direct Effect.....	75
4.5.3 Test for Moderation	79
4.4. Moderating Effect of Audit Quality on the Relationship between Board Characteristics and the Likelihood of Financial Statement Fraud.	80
CHAPTER FIVE	87
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS ..	87
5.1 Introduction.....	87
5.2 Summary of the Findings.....	87

5.2.1 Summary of the Descriptive Statistics	87
5.2.2 Summary of the Correlation Analysis.....	88
5.2.3 Summary of the Regression Results	89
5.2.4 Effect of Board Independence on the Likelihood of Financial Statement Fraud	90
5.2.5 Effect of Frequency of Board Meetings on the Likelihood of Financial Statement Fraud	90
5.2.6 Effect of Board Gender Diversity on the Likelihood of Financial Statement Fraud	91
5.2.7 Effect of Board Expertise on the Likelihood of Financial Statement Fraud....	91
5.2.8. Moderating Effect of Audit Quality.....	92
5.3 Conclusion	93
5.4 Recommendations.....	96
5.4.1 Policy Recommendations.....	96
5.4.2 Managerial implication	96
5.4.3 Theoretical implication	97
5.5 Limitations of the Study.....	98
5.6 Recommendations for Future Research	99
REFERENCES	100
APPENDICES	116
Appendix I: Data Collection Schedule	116
Appendix II: Manufacturing Firms Listed in East Africa.....	117
Appendix III: Probit Regression Results	118
Appendix IV: University Introductory Letter	120
Appendix V: NACOSTI Research Permit License.....	121

LIST OF TABLES

Table 4.1: Descriptive Statistics	68
Table 4.2: Correlation Analysis	69
Table 4.3: Shapiro Wilk Normality Test.....	70
Table 4.4: Results of Unit Root Test	71
Table 4.5: Test for Multicollinearity.....	73
Table 4.6: Ramsey RESET	73
Table 4.7: Hosmer- Lemeshow of Fit Test	74
Table 4.8: Testing for Control Variables	74
Table 4.9: Test for Direct Effect	79
Table 4.10: Test for Moderation	80
Table 4.11: Moderating effect of audit quality on the relationship between board characteristics and likelihood of financial statements fraud	85
Table 4.12: Summary moderation table.....	86

LIST OF FIGURES

Figure 2.1: Conceptual Framework Diagram	50
Figure 4.1: Moderating effect of audit quality on the relationship between board independence and the likelihood of financial statements fraud	81
Figure 4.2: Moderating effect of audit quality on the relationship between frequency of board meetings and the likelihood of financial statements fraud.	82
Figure 4.3: Moderating effect of audit quality on the relationship between board gender diversity and the likelihood of financial statements fraud	83
Figure 4.4: Moderating effect of audit quality on the relationship between board expertise and the likelihood of financial statements fraud.....	84

ACRONYMS AND ABBREVIATIONS

ACFE	Association of Certified Fraud Examiners
BFID	Banking Fraud Investigations Department
BOD	Board of Directors
BRC	Blue-Ribbon Committee
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CMA	Capital Market Authority
CRSP	Corporate Social Responsibility Practices
DSE	Dares Salaam stock Exchange
EAC	East African Community
EASEA	East African Securities Exchanges Association
IAASB	International Auditing and Assurance Standards Board
IFAC	International Federation of Accountants
IFRS	International Financial Reporting Standards
IPO	Initial Public Offering
KCB	Kenya Commercial Bank
NACOSTI	National Commission for Science, Technology, and Innovation
NSE	Nairobi Securities Exchange
ROA	Return on Asset
RSE	Rwanda Stock Exchange
SOX	Sarbanes-Oxley
UK	United Kingdom
USE	Uganda Securities Exchange
VIF	Variance Inflation Factor

OPERATIONAL DEFINITION OF TERMS

Audit quality : is the probability that the auditor will both discover and report a breach in the client's accounting system (DeAngelo 1981)

Board characteristics: means the features or attributes of the board (Thakoliwiroj & Sithipolvanichgul, 2021).

Board Expertise : is the financial qualification and competencies of the board members (Al-Dhamari & Ismail, 2017). It is the proportion of members in the audit committee with financial expertise.

Board gender Diversity :the quality of a board of directors that includes a range of gender, age, nationality, race/ethnic background, education, experience, expertise and professional perspectives (Milliken & Martins, 1996; Mishra & Jhunjhunwala, 2013)

Board Independence: refers to a corporate board with a majority of independent nonexecutive directors (Akpan & Amran, 2014).Independent directors are internal corporate governance mechanism aimed at reducing agency problems

Financial Statement Fraud: a deliberate misrepresentation of the financial condition of an enterprise through intentional misstatement or omission of amounts or disclosures (ACFE 2011)

Frequency of Board Meetings the number of meetings held by the board within a year (Qadorah & Fadzil, 2018)

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter encompasses the background of the study, problem statement, objectives, hypotheses, significance of the study and the scope.

1.1 Background of the Study

Incidences of financial fraud have become rampant in the global arena. Most of the accounting fraud cited in the literature involve publicly listed corporations where managers deliberately misstate and misrepresent elements in the financial statements to give a misleading picture of the firm's financial position. Enron, WorldCom, Adelphia, Tyco, Xerox, and Ahold are a few of the companies that are frequently highlighted in accounting and corporate governance studies (Arjan, 2016). Studies undertaken reveal that fraudulent accounting techniques are usually used to cover up the embezzlement of corporate funds by firms' top management. In the case of the Parmalat scandal, for example, \$17.4 billion in assets had mysteriously vanished from the company's balance sheet. The fraud was revealed after a \$3.9 billion account with Bank of America proved fictitious (Napoleoni, 2011). In Asia, China's banking sector has around 20 billion Yuan (\$3.2bn, £1.8bn, €2.4bn) of exposure to the companies at the Centre, a massive fraud probe in the eastern port city of Qingdao. In Africa, Nigeria, the Central Bank of Nigeria (CBN) reported that cases of attempted fraud and forgery as of half-year 2012 exceeded what was recorded in the whole of 2011 (Yego, 2016). Murdock (2018) defined financial statement fraud as a deliberate misrepresentation of the financial condition of an enterprise through intentional misstatement or omission of amounts or disclosures. According to the definitions above, financial statement fraud entails the deliberate misstatement or

misclassification of financial statement items to influence users' decision-making. It is committed by persons in positions of senior management, such as Chief Executive Officers (CEOs) and Chief Financial Officers (CFOs), who have access to and control over a firm's financial records (Bishop, Dezoort & Hermanson, 2017). Companies manipulate their financial statements by managing earnings through arbitrary buying or selling or fraud.

According to Gupta and Gill (2012) and Omoye and Eragbhe (2014), financial statement fraud is an intentional misstatement of material facts in books of accounts by management to deceive investors and creditors. This misstatement occurs through deliberate manipulation of any elements in a financial statement, including income, expenses, assets, and liabilities.

Data from the Banking Fraud Investigations Department (BFID), a division of the Central Bank of Kenya, shows that 525 cases led to a loss of \$8.5 million by various financial institutions in the first quarter of 2014. Research shows that no financial organization is immune to fraud, and the typical organization loses 5-7% of its annual revenues to fraud (Yego, 2016). Managers deliberately misstate and misrepresent elements in the financial statement to give a misleading picture of their firm's financial health. Most firm managers have found financial statement fraud an enticing strategy to ensure the continued existence of their firms (Bierstaker *et al.*, 2006). The aftermath of this practice has led to the collapse of significant firms worldwide and the loss of investors' wealth. This has heightened stakeholders' concerns about shareholder value and led to the erosion of investors and public confidence in the financial market and accounting reports (Bhavani & Amponsah, 2017; Tangod & Kulkarni, 2015). Several studies have been undertaken on financial statement fraud.

According to Dechow *et al.*, (1996), financial statement fraud firms have higher abnormal accruals in the three years preceding a conviction for fraud. This demonstrates that businesses are distorting their income to produce fraudulent financial statements. Financial statement fraud appears to be committed to concealing financial performance slowdowns (Dechow *et al.*, 2011) and concealing bad investments before the fraud (Ozbas, 2008). Kinney Jr and McDaniel (1989) demonstrate that firms that falsify their financial statements are less profitable. Eventually, these corporations engage in a much greater number of stock-financed mergers and acquisitions and seasoned equity issues.

The literature claims that the conflict of interest between managers and shareholders culminates in poor firm management and control, resulting in financial statement fraud (Ali, 2020). The board of directors' responsibility is to monitor and control the management team to ensure compliance with laws and regulations, achieve financial information reliability, and promote firm sustainability to increase shareholders' value. Despite the board of directors' role in reducing managers' opportunistic tendencies, managers' discretion in financial reporting has continually threatened shareholders' interest by manipulating financial statements, thus causing financial statement fraud.

Board characteristics such as board independence, frequency of board meetings, board gender diversity and board expertise are vital in determining the board's effectiveness because it reduces managers' discretion and opportunistic tendencies such as manipulating financial reports (Githaiga, Kabete & Bonareri, 2022). The proportion of executive and non-executive directors to the board's total number is germane in enhancing board independence. The non-executive directors bring their knowledge, expertise, and independent judgment on strategy and performance issues to the board.

They are not involved in the company's day-to-day operations, which should be the primary responsibility of the MD/CEO and management team. There is evidence from previous studies that organizational performance may be associated with top management characteristics (Pucheta-Martínez & Gallego-Álvarez, 2020; Nepal & Deb, 2022). For example, when the CEO makes a decision, it depends on the behaviour of the top management, whether they are risk-tolerant or averse (Johnson & Powell, 1994). High firm performance is paramount in ensuring investors are confident in continuing their investment (Harrison & Wicks, 2013).

Empirical evidence shows that independent directors on the corporate board help strengthen the internal control system that promotes quality financial reporting, reducing corporate fraud. Board diligence reflects the frequency of board meetings in monitoring roles (Baba & Abdul-Manaf, 2017). Vafeas (1999) asserted that the frequency of board meetings is a significant proxy for measuring board monitoring and discipline effectiveness and intensity. Frequent board meetings enable board members to carry out their board functions effectively and efficiently, leading to disclosing more information to the stakeholders (Lipton & Lorsch, 1992), leading to improved financial reporting and also reduce the likelihood of financial statement fraud as board members will have the opportunity to discuss and resolve any financial reporting issue that may arise. Thus, making the board more diligent reduces the likelihood of financial statement fraud.

Board gender diversity is gaining tremendous attention among policymakers, regulators, investors, corporations, scholars and the public because of the role of female directors on corporate boards' effectiveness and organizational outcomes (Abdullah & Ismail, 2016; Pathan & Faff, 2013; Wahid, 2018). Several studies have explained how board gender diversity might improve the accuracy and transparency

of financial information. For example, Fan *et al.*, (2019), Triki Damak (2018) and Zalata *et al.*, (2018) argue that the appointment of female directors improves the board's independence, functioning, efficiency and monitoring activities. This brings substantial benefits to the board, including new ideas and preferred interaction styles that hinder financial statement fraud.

Literature suggests that the expertise of the board members (educational and professional experience in finance, accounting and auditing) positively affects the quality of financial reports (Aifuwa & Embele, 2019; Githaiga *et al.*, 2022). Onourah and Imene (2016) asserted that when a board is comprised of experts, there is a high level of confidence in the financial statement; thus they have the likelihood of significantly reducing the likelihood of financial statement fraud.

The board, the highest governing body, is saddled with the responsibilities of exercising leadership, enterprise, integrity and judgments of its oversight and control. Hence, as achieve the company's continued survival and prosperity. Boards of directors form an integral part of the firms' structure (Taktak & Mbarki, 2014). The board provides a link that bridges the shareholders with the investors and plays a supervisory role of monitoring the quality of the information contained in the financial reports (Niu, 2006; Maria *et al.*, 2011). In addition, the board has a duty as provided by law, to guard against potential private gains of managers to manage earnings to mislead shareholders (Jensen & Meckling, 1976).

The relation between board independence and the occurrence of financial statement fraud is of particular importance. The need for independent board of directors was heightened after the high-profile collapse of some hitherto too big to fail business organizations. The correlation between the twin concept of independence and

financial statement fraud has enjoyed robust empirical consideration (Ilaboya, 2017; Liu *et al.*, 2015; Matoussi & Gharbi, 2011). It refers to the proportion of independent non-executive directors on corporate boards. There is a widespread belief that boards controlled by independent outside directors do a better job of monitoring than boards controlled by inside directors. Board independence or independent directors are internal governance mechanisms premeditated to reduce the agency cost arising from the conflict of interest between the principal and the agent (Ilaboya, 2017).

In several studies, frequencies of board meetings has been taken as a proxy for audit quality effectiveness. The Blue-Ribbon Committee (BRC) found that more frequent audit team meetings were associated with better-governed firms (DeFond & Francis, 2005). Vafeas (2005), in his study of 252 US firms, found a positive relationship between the frequency of board meetings, the quality of financial reporting, and the reduction of financial statement fraud. Board gender diversity is a key to enhancing corporate governance practices in an organization (Cong *et al.*, 2015), as diversity in the boardroom fosters better decision-making and brings about innovation in an organization. A diversified board's features include gender, age, educational and functional background, industry experience or exposure and nationality (Cong *et al.*, 2015). Aifuwa and Embele (2019) opined that the best board is a mix of individuals with different skills, knowledge, information power and readily available to contribute his/her time professionally. Studies have explored the relation between board gender diversity and financial reporting quality (Friday, 2014; Kemebradikemor Embele, 2019; Pulungan & Sadat, 2014), they all found a positive and significant relation between board diversity and decrease of financial fraud.

Gender diversity at the top of the corporate hierarchy that is, in the boardroom and top management positions, constitutes a "trendy topic" that has increasingly drawn

scholarly and policymaking attention (Kılıç & Kuzey, 2016; Moreno-Gómez *et al.*, 2018). Notwithstanding the increased relevance of gender diversity in the boardroom and top management position for managers and policymakers in developed settings, the performance effects of gender diversity in developing economies remains largely unaddressed (Kılıç & Kuzey, 2016). Additionally, research conducted in developed countries shows inconclusive results on the relationship between gender diversity and business performance (Post & Byron, 2015), while existing work in developing countries tend to support the notion that gender diversity is conducive to performance (Sekkat *et al.*, 2015). The reasoning for this contrast in the impact of gender diversification between firms of developing and developed economies has been suggested as being the result of the strong cognitive and human capital variety that separates male and female members of the upper corporate echelons in developing countries, which is not present in many developed economies

Audit quality refers to matters that contribute to the likelihood that the auditor will achieve the fundamental objective of obtaining reasonable assurance that the financial report as a whole is free of material misstatement; and ensure material deficiencies detected are addressed or communicated through the audit report (Dang, 2004; Achyarsyah, 2014). The objective of an audit of financial statements is for the auditor to form an opinion on the financial statements based on having obtained sufficient appropriate audit evidence about whether the financial statements are free from material misstatement and to report in accordance with the auditor's findings (AL-Qatamin & Salleh, 2020). Financial report should be on time, transparent and present financial information objectively and impartially. It is a primary tool offering insight into the workings of a company and is crucial for investment decisions. It serves as a

guide to those interested in investing by detailing how a company performs and manages its resources.

External audits are necessary for financial statements to be trusted by users. However, for external audit engagement teams to produce audit opinions that are reliable and trustworthy, they are required by both IFAC and IAASB to comply with a stringent audit quality framework. This framework requires the external audit team to be experienced, skilled, and sufficiently knowledgeable and have enough time dedicated to the audit work's performance (Shitandi, 2020). They apply thorough and continuous quality control procedures and audit processes and comply with applicable standards, regulations, and the law (Institute of Internal Auditors, 2017). They further provide timely, frequent, and useful reports and exercise an appropriate interaction level with the relevant stakeholders.

One of the most hotly debated subjects among academics who study auditing-related issues and regulators tasked with maintaining the accuracy of financial reporting is audit quality (Knechel, 2009). The financial reporting and audit quality issue are as crucial as ever in light of the scandals and economic events of the last two decades. The need for an external audit may be seen as a response to the agency problem and the audit functions as a mechanism to attest to the accountability and stewardship of company management to reduce the possibility of innocent mistakes and deliberate misstatements such as fraud and management manipulation (Alves, 2013; Nawaiseh, 2016). This implies that, external auditor plays crucial role in providing reasonable assurance to the quality of financial information presented to stockholders and other users of financial statements. It is believed that the quality of financial statements is more credible when audit service is performed with high quality (Bogale, 2016).

External auditors appointed by principals as an agent based on contract are independent of the managers of their company. They act on behalf of shareholders and enable them to monitor managers' actions closely. The external auditor's role is to reduce agency costs by avoiding information asymmetry in financial reporting and decreasing opportunities for managers' manipulation (Bogale, 2016). External auditors mainly provide financial statement audit services, and the primary objective of financial statement audits is to ensure these.

The current study is motivated by various factors, the most notable of which is that the moderating effect of audit quality on the relationship between the dependent and independent variables has yet to be extensively studied in the existing literature. Secondly, there has been mixed and inconclusive findings on board characteristics and financial statement fraud in the previous studies, particularly the developing countries due to weak corporate governance. However, due to inconsistent conclusions, this contradiction opens the door to additional inquiry. Thirdly, the focus of the investigation has been largely limited to developing countries, and there appears to be a need for more empirical literature furthering a developing country's perspective on this timely topic. Therefore, this study sought to assess whether audit quality moderates the relationship between board characteristics and the likelihood of financial statement fraud which has not been examined in the previous studies, particularly in a developing economy such as Kenya.

1.1.1 East African Securities Exchanges Association

The East African Securities Exchanges Association (EASEA) came into being in 2004, following the signing of a Memorandum of Understanding between the DSE, the USE and the NSE (African Securities Exchanges Association (ASEA), 2009). The key objective of EASEA is to oversee the creation of a single or integrated and

efficient market infrastructure from the current disenfranchised markets, compatible with other needs globally. This will facilitate the mobilization of the much-needed capital to unlock the massive EAC development programs ranging from oil and gas exploration transport and communication infrastructure, among others. The expansion of market capitalization will also make the EAC market competitive on the global scene and possibly attract more foreign investors.

The EASE has different histories and trading volumes, but the common denominator for all is their existence to mobilize capital to support productive investment programs by firms, diversifying investors' risks, improving the allocation of funds and the management of firms through corporate governance standards (Irving, 2005). Securities markets in East Africa (EA) have yet to attract a significant proportion of the global capital inflows due to challenges like political instability exposure and weak capital base (Irving, 2005).

According to Nairobi Securities Exchange (NSE) (2015), trading in securities was informal, manual, and purely on a gentleman's agreement until the 1950s. In 1954 the Nairobi Stock Exchange, now called NSE, was a voluntary association of stockbrokers registered under the Societies Act. From the first privatization of a 20% government stake in Kenya Commercial Bank (KCB) in 1988, NSE has grown in trading volumes, boosted by the efficient settlement of deals through an automated trading system introduced in September 2006.

A brief from the Uganda Securities Exchange (USE) (2015) notes that trading started in January 1998 following the listing of the East African Development Bank (EADB) Ush 10 Billion bond. In the year 2000, the first equity issue was done by Uganda clays Ltd. USE has now grown to 17 listed firms and also trading in fixed-income

securities. The Dare Salaam Stock Exchange (DSE) was incorporated in September 1996 and trading started in April 1998 with issue of equity (DSE, 2015). In 1999, the first bond was issued. There are 21 listed companies, 5 corporate bonds and 8 government bonds. The market capitalization on 31/12/2014 was Tsh 22, 090.39 billion, again signifying the massive capital mobilization at DSE.

The Rwanda Stock Exchange (RSE) started in January 2011, replacing Over the Counter Exchange from 2008, with only Bralirwa stock, a brewery manufacturing firm trading. As of 31/12/2014, 6 firms are listed at RSE with three government and one corporate (Investment & Mortgages (I&M) bank) fixed-income securities (RSE, 2015). Burundi, the other EAC member, is currently constituting its market (NSE, 2015).

Manufacturing industries play a critical role in economic growth and development. Manufacturing provides a significant source of demand for goods and services in other sectors of the economy, and these sales to other industries are not captured in the manufacturing sector GDP. Still, they are counted in the broader measure of its gross output. Based on recent statistics, manufacturing contributes £ 6.7 trillion to the global economy (Suleiman, 2016). Currently, there are 15 manufacturing firms listed at the East African Securities Exchanges Association, with a total of 8 firms in Kenya, 4 in Tanzania, 2 in Uganda and 1 in Rwanda.

East African securities exchanges have founded rules and guidelines that listed companies must adhere to.

Investors in the capital market are diverse from local to foreign, individual to institutional, young and old, all with different objectives and expectations. The market managers (EASE management) and the regulator are mandated to promote and protect

investors' interests in the market. Further, as contained in capital market authority operating rules. Publicly quoted companies must publish financial reports at the end of every financial year. The premise behind such disclosure is to help the investing public make an informed decision on the firm whose securities they are about to trade in. However, this requirement has not prevented companies from presenting inaccurate financial statements to the detriment of the investing public. Detecting and highlighting financial fraud is paramount since most of the listed companies have employed a very aggressive growth strategy which involves acquiring assets with high growth potential or initiating greenfield projects, some using subsidiaries as investment vehicles with the promise of high returns that instead end up tying capital thus suppressing returns.

1.2 Statement of the Problem

Financial statement fraud is frequently preceded by a misstatement or earnings manipulation from quarterly financial statements that are initially deemed insignificant but eventually escalate to massive corporate fraud (Özari & Ocak, 2013; Irwandi, Ghozali & Pamungkas, 2019). According to Murdock (2018), financial statement fraud is a deliberate misrepresentation of the financial condition of an enterprise through intentional misstatement or omission of amounts or disclosures. According to the definitions above, financial statement fraud entails the deliberate misstatement or misclassification of financial statement items to influence users' decision-making. Financial statement fraud is deliberate over or understatement of financial statement balances that, in many cases, make a firm appear to be in a better financial position which deceives the financial statement users.

Corporate failures involving listed firms at the Nairobi securities exchange in Kenya, such as Sameer Africa, Mumias sugar, Athi River Mining, East Africa Portland

Cement, and East Africa Cables, have ignited debates on the functionality of boards. In Uganda, seven listed firms have been closed by the central bank of Uganda; they include Teefe Bank (1993), International Credit Bank Ltd (1998), Greenland Bank (1999), The Co-operative Bank (1999), National Bank of Commerce (2012), Global Trust Bank (2014) and the sale of Crane Bank Ltd (CBL) to DFCU (2016).

Though studies show that board characteristics (such as independence, frequency of board meetings, board gender and board expertise) determine board effectiveness in mitigating financial statement fraud, the findings are mixed and inconclusive (Githaiga *et al.*, 2022; Shan *et al.*, 2013; Zhou *et al.*, 2018; Maulidi, 2022; Xianga & Zhu, 2013; Persons, 2005; Chen *et al.*, 2006; Beasley, 1996; Petra, 2007; Ho & Wong, 2001; Outa & Waweru, 2016; Cong *et al.*, 2015). Given the mixed results from past empirical research, there is a need for additional investigations to support and explain the association among the study variables, and more testing interaction effects are called for.

Low audit quality and the corporate board's poor supervisory and monitoring role have led to financial statement fraud in many organizations (Noor *et al.*, 2015; Lisic *et al.*, 2015). Many jurisdictions require listed firms to have an outside auditor review their financial statements. The statutory auditor is required to assure the company's numerous stakeholders regarding the accuracy and reliability of the financial statements, the absence of financial statement fraud, and the viability of the business. The importance of audit quality as a vital component of financial reporting quality has previously been stressed since it symbolizes the legitimacy and confidence of financial disclosure (Bushman, Piotroski, & Smith, 2004; DeFond & Zhang, 2014). Even though various audit quality factors have been researched in the literature, there

is little evidence of the influence of audit quality on the relationship between board characteristics and financial statement fraud.

This study seeks to fill this gap by investigating the moderating role of audit quality on the relationship between board characteristics and the likelihood of financial statement fraud among manufacturing firms listed on securities exchanges in East Africa.

1.3 Objectives

1.3.1 General Objectives

This study aimed to investigate the moderating effect of audit quality on the relationship between board characteristics and the likelihood of financial statement fraud among manufacturing firms listed on securities exchanges in East Africa.

1.3.2 Specific Objectives

The study was guided by the following specific objectives:

1. To examine the effect to which board independence influences likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa.
2. To evaluate the effect of frequency of board meetings on likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa.
3. To determine the effect of board gender diversity on likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa.

4. To establish the effect of board expertise on likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa.
5. To determine the moderating effect of audit quality on the relationship between;
 - a. board independence and the likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa
 - b. frequency of board meetings and the likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa
 - c. board gender diversity and the likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa
 - d. board expertise and the likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa

1.4 Research Hypothesis

- H₀₁.** Board independence has no significant effect on the likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa
- H₀₂.** Frequency has no significant effect on the likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa.
- H₀₃.** Board gender diversity has no significant effect on the likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa.

H₀₄. Board expertise has no significant effect on the likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa

H₀₅. Audit quality does not moderate n the relationship between;

- a. board independence and the likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa
- b. frequency of board meetings and the likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa
- c. board gender diversity and the likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa
- d. board expertise and the likelihood of financial statement fraud among listed manufacturing firms listed on the securities exchanges in East Africa

1.5 Significance of the Study

This research's significant findings have managerial, theoretical and policy implications. First, the study findings add to the current body of knowledge on board characteristics, audit quality and the likelihood of financial statement fraud. Secondly, the results provide valuable insights to corporate executives on board attributes governance attributes that have a bearing on the quality of financial reporting for their implementation. The study's findings may inform investors of board characteristics contributing to quality financial reporting. This information benefits investors when choosing which listed companies to invest their money in. Finally, the study's findings

inform the regulators in the East African securities exchanges of the extent of compliance with corporate governance practices and the state of financial reporting quality in East Africa. This information forms a base on policy formulation in search of measures to protect and improve the quality of financial reporting and mitigate the magnitude of financial statement fraud.

1.6 Scope of the Study

The study was carried out among manufacturing firms listed on the securities exchanges in East Africa. Based on the availability of data the study focused on 15 manufacturing firms listed in the East Africa. The study period was 2007 - 2021, and it was suitable since it was during this period that the East Africa securities exchanges experienced huge regulatory and policy enactment, which required listed firms to adhere to the continuous listing obligations, among them the publication of financial statements and miscellaneous provision. However, it was also this period when major local and global financial crisis took place that were attributed to the bad corporate governances such as excessive risk taking by banking entities. In addition, most of the East Africa countries initiated the Economic Recovery Strategies and meet the nation's aspiration by enhancing their manufacturing sector.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature review of study variables and theories that support the study, followed by an empirical review of the literature on the relationships between variables of the study. The chapter also gives a knowledge gaps summary from empirical studies reviewed and the conceptual framework depicting the study's objectives.

2.2 Concepts

2.2.1 Financial Statement Fraud

ACFE (2011) defined financial statement fraud as a deliberate misrepresentation of the financial condition of an enterprise through intentional misstatement or omission of amounts or disclosures. Albrecht *et al.*, (2015) see financial statement fraud as fraud committed by executives on behalf of an organization, usually to make a reported financial statement look better than they are. From the above definitions, it can be deduced that financial statement fraud involves an intentional misstatement or misclassification of items in the financial statement to influence users' decision-making. It is perpetrated by those in top management positions, such as the Chief Executive Officers (CEOs) and Chief Financial Officers (CFOs), who have access to and control over the financial records of a firm (Bishop *et al.*, 2017).

Financial statement fraud usually starts with little adjustments to accounts, but the need to maintain the deception often leads to escalated fraudulent practices. Brennan and McGrath (2007) and Eragbhe and Omoye (2014) submitted that financial statement fraud generally begins with a violation of Generally Accepted Accounting Principles, especially in jurisdictions with a lack of rigid accounting standards and

ambiguities which allow accountants to choose between accounting policies. The ACFE (2011) identified five ways financial statement fraud is commonly perpetrated: improper recognition of revenue, improper treatment of expenses and cost; improper valuation of assets; improper recording of liabilities; and inadequate disclosures.

Practically, financial statement fraud is achieved by falsifying or overstating assets, sales and profit or understating liabilities, expenses or losses (Dalnial *et al.*, 2014) to show a favourable picture of the firm's health. Items such as sales, account receivables, and inventories have been observed to be more susceptible to fraud (Albrecht *et al.*, 2015; Tangod & Kulkarni, 2015).

A financial statement's classification as fraudulent depends on the motive behind the act (Brennan & McGrath, 2007). Whereas most misstatements may occur due to an error or lack of expertise and negligence (Albrecht *et al.*, 2015), several other factors have been attributed to the motive behind financial statement fraud. Hogan *et al.*, (2008) noted that the pressure to meet analyst forecasts, incentive structure, the need for external financing, and poor performance are motivating factors for financial statement fraud. The opportunity to engage in fraud also increases as the firm control structure becomes weak, coupled with an ineffective corporate governance system and a deteriorated audit function (Aris *et al.*, 2013; Gupta & Gill, 2012).

Omoye and Eragbhe (2014) attributed financial statement fraud to the need to secure investor's interest, financing needs, bonus salaries, and shareholders expectations. A firm's manager who is unable to achieve a similar growth as recorded in the past or the desire to grow may be prone to financial statement fraud (Tangod & Kulkarni, 2015). These motives are surmised in the fraud triangle and fraud diamond theory, where several authors have empirically tested their effect on financial statement fraud

(Mahdi *et al.*, 2019). Notwithstanding, Aramvash *et al.*, (2017) opined that these factors might not necessarily mean fraud exists but a drive to incite an auditor's sensitivity towards the possibility of fraud.

According to Pinkasovitch (2019), financial statement fraud red flags usually come up when a firm experiences accounting anomalies where sales and cash inflow do not move in tandem as revenues increase without a corresponding growth in cash flows. For instance, when sales grow consistently while reputable competitors are experiencing poor sales, the company experiences immense pressure to meet analysts' expectations, and there is a significant rise in the company's performance within the financial reporting year (Ren, Zhong & Wan, 2021). Also, when there is a weak internal control system and corporate governance and management compensation is based on bonuses generated from short-term targets, the incentive to commit fraud increases (Joseph, Albert & Byaruhanga, 2015). Instruments such as the Beneish model can detect financial statement fraud.

The primary responsibility for preventing and detecting irregularities and errors rests with management because it has a contractual duty of care (Abu Amuna & Abu Mouamer, 2020). In this respect, the management puts up an internal control system. Such a system ensures that management policies are adhered to, assets are safeguarded, and the company's activities' assets are complete and accurate. An internal control system comprises many individual internal controls.

2.2.2 Board Characteristics

Board characteristics can be defined as internal corporate governance mechanisms, which expatiate on the features of the board (Aifuwa & Embele, 2019). The characteristics of the board include size, independence, diligence, diversity (age,

gender, nationality, expertise, educational and functional background), and committee structure (Anderson *et al.*, 2004). The board's administrative activities involve overseeing and monitoring the organization's financial reporting process (Anderson *et al.*, 2004). They meet at a scheduled time with the organization's accountant and external auditors to review financial statements, audit procedures, and the internal control system (Klein, 2002) targeted at improving the organization's performance. Adams *et al.*, (2010) see the board as a market solution that helps mitigate agency problems in most organizations. According to Jenfa (2000), the board is responsible for a company's internal control systems and has the ultimate responsibility for the operation of the company. Boards define the rules for the chief executive officer regarding hiring and firing, compensation plan, and provide high-level advice. Vafeas (2005) see the board's duty as mainly responsible for monitoring the quality of information contained in financial reports because managers often have their interest and incentives concerning managing earnings and potentially misleading stockholders. Akeju and Babatunde (2017) opined that a board characteristic which is an internal corporate governance mechanism, improves financial reporting quality in an organization. To this end, this study critically examined three board characteristics such as independence, diversity (Gender diversity), and expertise.

2.2.2.1 Board Independence

Independent directors are elected by shareholders, not members of the company management (Stein & Plaza, 2011). The clear separation of independent directors from any direct or indirect association with the firm's management is the key to a reliable governing tool in their judgments and providing equal standing for the different levels of shareholders (Beasley, 1996). Fama and Jensen (1983) suggested that an effective board should contain an adequate number of independent directors

for monitoring managers and ensuring that they are running their firms effectively to achieve the highest possible performance and to protect the interests of shareholders, predominantly the minority of shareholders (Dalton *et al.*, 1998).

The term independent directors are used interchangeably with non-executive directors and outside directors. However, not all non-executive directors are independent. The study on board independence and firm performance showed mixed results, either positive, negative, or no relationship with firm performance (Fuji *et al.*, 2016). The consensus in the popular press and the academic literature is that an independent board of directors results in more effective corporate governance. Researchers and practitioners suggest that inside board members, large boards, CEOs who also chair the board, and entrenched CEOs result in less independent and less effective boards of directors. Although such characteristics constitute barriers to effective governance, contracting theory suggests that they could be counteracted by the incentive compensation contracts that directors receive.

2.2.2.2 Frequency of Board Meetings

Board meeting frequency refers to the number of meetings held by the board within a year (Saleh *et al.*, 2020). The directors of companies with frequent meetings become more involved in management processes, which could make the CEO feel controlled by the board. Therefore, directors shall only request an appointment to be held if a significant issue is discussed or resolved (Vafeas, 1999). Studies suggest that board meetings may only increase when there are problems in the firm's control. On the other hand, some commentators believe that increasing the number of meetings can be a means to enhance performance. An empirical study conducted by Qadorah and Fadzil (2018) found that having more meetings significantly increased company performance and thus influenced return on equity (ROE). Board diligence reflects the

frequency of board meetings in monitoring roles (Subair *et al.*, 2020). Vafeas (1999) asserted that the frequency of board meetings is a significant proxy for measuring board monitoring and discipline effectiveness and intensity. Regular board meetings could help reduce agency problems, improve financial quality reporting, and hinder fraud in financial statements.

Rodríguez-Ariza *et al.*, (2012) noted that two opposing positions exist regardless of the frequency of board meetings on corporate transparency. The first argument advanced by scholars was that frequent board meetings might be a sign of weakness on the board, as it limits their performance (Vafeas, 1999). The second argument supports regular board meetings as they enable board members to carry out their board functions effectively and efficiently, leading to disclosing more information to the stakeholders (Lipton & Lorsch, 1992). Leaning on the second argument, it is right to say that frequent board meetings lead to improved financial reporting and reduce the likelihood of financial statement fraud as board members can discuss and resolve any financial reporting issue that may arise. Thus, making the board more diligent in reducing the likelihood of financial statement fraud. However, empirical findings on the nexus between the frequency of meetings on the board and the likelihood of financial statement fraud seem to be few.

2.2.2.3 Board Gender Diversity

The concept of board gender diversity suggests that boards should reflect the structure of society and appropriately represent gender, ethnicity, and professional backgrounds (Van der Walt & Ingley, 2003). Boards are concerned with having a suitable composition to provide diverse perspectives. Board diversity is supported on the ground of moral obligation to shareholders, stakeholders, and corporate philanthropy (Coffey & Wang, 1998) and for commercial reasons. Robinson and Dechant (1997)

postulate that diversity promotes a better understanding of market place, increases creativity, produces more effective problem-solving and leadership, and promotes effective global relationships.

Lately, gender diversity has drawn the attention of various scholars. Some of the main issues discussed in extant literature focus on the reasons for fewer women on corporate boards, the predictors of both organizational and outside forces for women on boards, and women directors and managers' experiences and perceptions of their role (Singh & Vinnicombe, 2004; Ahmed *et al.*, 2018; Mathisen, Ogaard & Marnburg, 2013). Previous studies have empirically examined the effect of female directors on firm performance (Bonn *et al.*, 2004; Carter *et al.*, 2003; Fields & Keys, 2003; Şener & Karaye, 2014). Carter *et al.*, (2003) found a positive relationship between gender diversity and firm performance. Bonn *et al.*, (2004) found a positive relationship between the ratio of women directors and firm performance. Some studies have examined the effect of women on board committees and found a positive impact on firm performance (Bilimoria & Piderit, 1994). However, recent studies by Ding and Charoenwong (2004) and Farrell and Hersch (2005) did not find a significant relationship between women directors and shareholder returns.

Conversely, Farrell and Hersch (2005) found that gender diversity occurs more in response to internal and external calls for diversity. Recognizing the value of women directors, Norway passed legislation in 2005 requiring every publicly listed company to have 40 percent of board members be women by January 1, 2008, or face the risk of closure (Guardian Unlimited, 2006). In light of such regulations and the increasing importance of women in the corporate world, it is essential to further explore the impact of boards' gender diversity on firm performance

2.2.2.4 Board Expertise

Board experts are crucial to sound corporate governance. Financial experts on the board mitigate potential conflicts while enabling the firm to benefit from experience-based advice and suggestions, which convey positive signals to the market. As independent and resourceful experts, these external board members monitor corporate activities closely and support the strategic decision-making of the corporation (Masud *et al.*, 2019). As an integral element of a firm's corporate governance system, the board of directors performs the dual role of monitoring and advising top management.

Whereas all directors can contribute to the advisory function, the monitoring duty mainly falls to independent directors. Not surprisingly, improving board independence was a significant emphasis of the corporate governance reforms and regulations following high-profile corporate scandals in the early 2000s. Much of the academic literature on corporate boards also focuses on director independence and its effects on firm performance and decision-making. Although independence determines directors' monitoring incentive and is a necessary condition for boards' effective oversight of management, what also matters is whether independent directors can perform their monitoring duty (Guner *et al.*, 2008).

For this study, board expertise has been defined as board members considered financial experts (understanding generally accepted accounting principles and financial statements). Board members are expected to possess expertise beyond those who do not have specific industry knowledge. Directors familiar with the industry provide better monitoring of the obstacles and governance weaknesses the organization might encounter. Agrawal and Chadha (2005) found that the probability of financial accounting restatement is lower in companies that have independent

directors with financial expertise, while DeFond *et al.*, (2005) found a positive market reaction to the appointment of accounting financial experts on the audit committee, but no reaction to non-accounting financial experts. Guner *et al.*, (2008) studied how a director's financial expertise affects corporate decisions. They found that directors with financial expertise exert significant influence over corporate decision-making, though conflicts of interest may arise.

The role of financial experts on the board is to oversee the accounting systems, ensure transparency regarding financial reporting and the accountability of financial statements and prevent internal control by the firm (Kassinis & Vafeas, 2002). As an expert on accounting and auditing, an accountant on the board helps to monitor the management's capacity and capability regarding financial decisions while also providing experience-based opinions regarding the firm's financial statements (Klein, 2002). Moreover, accounting experts play the role of an arbitrator between internal and external auditors, reducing the number of agency conflicts within the firm (Klein, 2002). The presence of accounting experts on the board has also received regulatory and institutional attention worldwide. For example, the US Securities and Exchange Commission requires accounting and financial expertise in corporate governance.

Furthermore, the US Sarbanes Oxley Act of 2002 mandates having at least one financial expert on the board, while the UK corporate governance code of conduct, the Australian corporate governance principles, the Singapore code of corporate governance and the updated corporate governance rules of India also require the inclusion of financial and technical experts on the board. In this context, the Bangladesh Securities and Exchange Commission also requires the presence of financial and technical experts on the board. Kusnadi *et al.*, (2016) have shown that having accounting experts on the board positively and significantly promotes the

quality of financial reporting by Singaporean firms; they further verified these results by considering both accounting and financial experts and reported the same results, remarking that accounting experts function as a watchdog over the financial reporting system of the company.

2.2.3 Audit Quality

According to Chouhan *et al.*, (2021), auditing is the thorough examination of financial records and statements and provides reports to stakeholders to ensure that the company has clean financial records and abides by the accounting norms. At the same time, the quality audit is the systematic examination of the work carried out by the auditors and their team (Chouhan *et al.*, 2021). It assures that the work performed by the auditor is fully competent and follows ethical standards. The legislative result of audit emphasizes self-confidence since auditors are anticipated to deliver an external, objective-based view for the preparation and the exhibition of annual financial accounts/statements. The auditors must present their independent opinion expressed. However, the audit work is vastly reliant on and embedded in the real domain and may be converted predominantly to country-specific environments (Chouhan *et al.*, 2021). The present research uses detected material misstatements as a measure of audit quality, which distinguishes this research from previous studies in the literature. Since only in this case can audit quality mediate the relationship between board characteristics and the likelihood of financial statement fraud. When auditors detect material misstatements, they either communicate with the management of the client to adjust the detected misstatement or reflect the unadjusted material misstatements in the form of a modified audit opinion.

Audit quality is defined as "more complete, neutral and free from error "and providing more useful predictive information about the firm's financial performance (Shuraki,

Pourheidari & Azizkhani, 2020). Audit quality is not directly observable but is a crucial factor in capital markets. The increasing demand of users of financial information for transparency and reliable information has made it a more relevant and critical topic in forensic audit and accounting research.

There have been several attempts to define "audit quality." However, there has yet to be a definition that has achieved universal recognition and acceptance. Audit quality is, in essence, a complex and multi-faceted concept. Audit quality is subject to many direct and indirect influences. While some may emphasize the direct results of audit quality, more than this perspective is needed to address whether audit quality has been achieved in the broader context. Perceptions of audit quality vary amongst stakeholders depending on their level of direct involvement in audits and the lens through which they assess audit quality. Audit quality is viewed as one of the most critical issues in audit activities (Tran *et al.*, 2019) and is defined as the probability that financial statements are fairly presented when an unqualified opinion is given (Aronmwan *et al.*, 2013). Audit quality retains a positive and strong relationship with the degree of confidence of various stakeholders. Various stakeholders are directly or indirectly related to or affected by the audit quality of financial statements. If a company receives multiple audit quality notes where auditors have raised some questions on various controls and audit procedures, this would severely affect the audit quality and compel many stakeholders to determine their future relationship with that company (Carlin *et al.*, 2015). Audit quality significantly inhibits earnings management and increases the quality of audited financial statements. Audit quality plays a unique role in meeting users' information needs and helping them make the right decisions. It also reduces the agency costs of stakeholders by elevating the position of the financial accounting system.

The issue of audit quality is also essential for regulators. Different business and company laws are developed and implemented to protect the public interest when commercial activities and transactions occur. Some regulations cannot be ignored and must be followed by commercial entities. On the other hand, certain rules and regulations are voluntary. However, regulators are still interested in how directors use compulsory and voluntary rules and regulations to serve their business interests, not at the cost of public goods. Here, it is necessary to point out that consumers, investors, shareholders, institutional investors, and other groups' collective interests are mainly looked after by regulators. In this context, if a firm's audit quality does not receive a reasonable audit report but numerous qualifications are attached, this situation compels the regulator to take all legal and necessary actions to investigate whether the mentioned qualifications affect the public interest (Deng *et al.*, 2014). As a result, it is the prime regulatory duty of regulators to see whether the audit report implies some serious violations of rules and regulations. Therefore, audit quality is an essential aspect for regulators as well. Auditing financial statements are one of the most important ways of ensuring the transparency of corporate information. However, the rise of financial crises and scandals worldwide has highlighted the critical role of reliable quality audits. Conflicts of interest between management and owners reinforce the idea that honesty and integrity may not be observed in preparing a firm's financial reports since managers tend to disclose positive information and withhold bad news. Audits inconsistencies in previous studies on quality audit have been partially due to different methods of measuring this variable. Therefore, in the present study, audit quality is measured regarding the auditor's success in detecting material misstatements.

As organizations grow in size and complexity, internal controls are required to manage and monitor progress toward achieving their strategic objectives. In addition, organizations have statutory obligations to meet, and internal controls are necessary to identify, meet and monitor compliance with these obligations. The external audit is an essential element in public money's accountability process and contributes significantly to the stewardship of public resources and the corporate governance of public services.

External auditors are appointed independently from the organization being audited, and the scope of their work includes reporting on the financial statements and covering value-for-money audits and the effectiveness of public service (Karikari Appiah *et al.*, 2022; Saidin, 2011). Financial statement audits to determine whether an entity's financial statements are presented fairly. The auditing process should be conducted where the established standards are adopted to ensure audit quality and the auditor's opinion or other judgment relating to the degree of correspondence with selected criteria. The ultimate goal of auditing is to ensure accountability of public funds.

Prior studies have evaluated the role and effectiveness of the external audit on the firm's performance (Al-ahdal & Hashim, 2021; Al Ani & Mohammed, 2015). It has been observed that the presence of a strong, experienced and proficient external auditor significantly improves and enhances the company's financial performance. This is because the auditor performs their duties appropriately and professionally. For instance, (Enekwe *et al.*, 2020) researchers looked at the impact of audit quality on the financial performance of Nigerian-listed industrial companies from 2006 to 2016. The authors looked into the effect of auditor independence, audit committee membership, and audit fee on return on assets among publicly traded manufacturing

companies. Auditor independence has a positive and considerable impact on the financial performance of publicly traded manufacturing companies, according to their results. The authors also concluded that the audit quality elements affect the financial performance of Nigerian manufacturing companies.

2.3 Theoretical Perspective

2.3.1 Agency Theory

Stephen Ross and Barry Mitnick first developed agency theory in 1973, independently and concurrently (Mitnick, 2019; 1975). Whereas Ross introduced the study of agency in compensation contracting, Mitnick introduced the study of agency theory by arguing that institutions form around agency and evolve to deal with the agency in response to the essential imperfection of agency relationships (Jensen & Meckling, 1976).

Agency theory describes the relationship between the principal and the agent, where the principal gives a mandate to the agent to perform some service on behalf of the principal that involves some decision-making authority to the agent (Budiyono & Arum, 2020). The logical consequence of this employment contract is to improve efficiency by reducing the role of information loss caused by the moral hazard problem. According to the agency theory, when individuals are motivated more by their own interests than by others, society as a whole will benefit the most (Budiyono & Arum, 2020). The difference is that this interest can lead to agency problems that affect reported earnings quality (Jensen & Meckling, 1976). Agency theory provides that corporate boards have the fiduciary responsibility to protect investors' interests by monitoring the management. Yet, there is a generally held concern that the board might lack the ability to ensure that executive actions are in the interest of investors. This concern stems from the notion that managers of listed firms often dominate their

boards and play a passive role in their monitoring function. As abnormal discretionary accruals portend earnings management fraud that mislead investors with false information, boards must constrain such unethical practices (Eisenhardt, 1989).

From the preceding, agency theory explains the need for credible financial reporting to render an account of financial performance and position by agent (directors) to the principal (shareholders) at the end of a defined period. To achieve credible financial reporting, corporate governance mechanisms such as the inclusion of independent board directors, board audit committee, board diversity, and board expertise are all considered necessary means to alleviate instances of conflict of interest and ensure that the agent is deterred from engaging in opportunistic behavior that is detrimental to the principal (Panda & Leepsa, 2017).

From the perspective of agency theory, directors and managers have a responsibility to ensure that true and fair view financial statements are issued to the existing shareholders to provide information on the quality of their stewardship of the company. The directors' role in overseeing financial accounting processes and the risk of unethical behavior in this function creates an agency cost for the shareholders. In the context of the agency relationship between shareholders and directors, financial statement fraud may be used to conceal the failure of company directors in their duties towards the company's shareholders (Mohamed & Handley-Schachler, 2015). In this case, the financial figures are altered, and the company's activities are not reported to shareholders. Consequently, they are concealed from principals in other agency relationships, such as grant-awarding bodies, from other stakeholders, including bondholders and regulators. Financial statement fraud may be a retrospective step in frauds committed by agents, where deliberate misstatements are used to conceal poor, negligent, or dishonest performance that has already occurred. However, it can also

constitute a preparatory step towards intentional fraud, where it is used deliberately to conceal assets that the perpetrator has earmarked for future theft (Mohamed & Handley-Schachler, 2015). The nature of the misstatement in financial accounts will depend on the pressure or motive behind it. If the reason is misappropriation of assets, the misstatement required will involve the understatement of income and assets and the overstatement of expenses and liabilities to conceal the extent of equity that ought to be available to owners or the amount of unused grants repayable to funding bodies (Mohamed & Handley-Schachler, 2015).

The literature further reveals that audit quality is another mechanism stakeholders use to monitor the agent Saghafi (*et al.*, 2022). This is because high audit quality enhances a company's financial reporting over time by lowering the risk of fraud and earnings manipulation, improving the reliability of accounting information, and enabling users of financial data to analyze the firm's performance with greater assurance. Auditors have a big role in detecting significant misstatements and accounting fraud. Therefore, this study used this theory to hypothesize that board characteristic and audit quality affects the likelihood of financial statement fraud.

2.3.2 Fraud Diamond Theory

One of the most popular theories in explaining financial statements fraud is the fraud triangle developed by Cressy (1953), cited by (Schuchter & Levi, 2016). . According to the Fraud Diamond, four factors lead to fraud: pressure/motivation, opportunity, rationalization, and capability (Schneider *et al.*, 2009; Ozcelik, 2020). This theory has served as a red flag to the auditors, shareholders and regulatory bodies of possible financial statement fraud and how to prevent this corporate fraud in the organization. The reason behind the addition of the element of capacity is that even in the presence of the other three elements, the commission of fraud is impossible if the potential

perpetrator does not have the ability and skills to commit fraud. Perceived motivation relates to elements that result in fraudulent behavior. Anyone who perpetrates fraud may be driven by a desire to commit fraud (Mansor & Abdullahi, 2015). These drives could occur because of financial stressors or non-financial stressors. If employees believe that the desire to act fraudulently is uncontrollable, this could result in fraudulent behavior. Indeed, over 95% of fraudulent cases could result from greed to acquire more than someone's earnings (Kiragu *et al.*, 2013). Assumed chance is another element that triggers fraud in the organization. When the system of control appears weak, people could create an opportunity to commit fraud because they may not be detected (Kelly & Hartley, 2010). Several factors can create opportunities for fraud, including contravention of organization policies, lack of fraud management tools, and failure to conduct disciplinary action in case employees engage in fraud (Sauser, 2007).

According to Wolfe and Hermanson (2004), an individual's capacity to commit fraud involves their ability to recognize an opportunity to commit fraud and exploit the opportunity, especially in the case of long-term and large-scale frauds. According to this theory, the capacity to commit fraud depends on intelligence, stress, deceit, coercion, ego, and position. Justification of fraud means a person could behave ethically and acceptably but still perpetrate fraud. This is because they could rationalize fraudulent behavior by pretending that fraud is acceptable in the organizations. If someone fails to rationalize fraudulent acts, they could shun fraudulent behavior. According to Hooper and Pornelli (2010), fraudsters have strange mindsets that enable them to rationalize fraud by assuming it is a norm in the public sector. Therefore, those who perpetrate fraud have a particular mindset that allows them to justify their dishonest acts.

However, the fraud triangle theory has some drawbacks, as identified by (Mackevičius & Giriūnas, 2013a). The theory does not reveal when there is the most significant risk of fraud; it does not take into account the role of the internal control system in assessing and detecting fraud. Therefore, we should have an improved version of the fraud square. Hall (2015) defined fraud as anything intentional, leading to material misrepresentation by one party to another party to deceive. Auditors may experience either employee or management fraud. The identified factors serve as signals or warnings to the auditors, business organizations and investors, and legal and regulatory bodies in the future of the possibility of financial fraud.

2.3.3 Resource Dependency Theory

Pfeffer and Salancik (1978) devised the resource dependence theory to explain how organizations' behavior is affected by the external resources they possess. They propose that firms change and negotiate with their external environment to secure access to the resources they need to survive.

This theory is based on the fact that companies rely on their environment for resources and, as a result, must build excellent relationships to ensure a continuous flow of these resources and information. Resource dependency theory assumes that enterprises have influence over their environment by bringing on board the resources they require to survive (Pfeffer & Salancik 1978). This theory shows that a board with diverse skills is a valuable asset to the company (Hillman & Dalziel, 2003). Competent directors bring in social capital resources and provide strategic guidance to management (Poppo & Zenger, 2002).

According to Al-Rassas & Kamardin (2015), large audit committees have experience and skills that contribute to the audit committee's efficacy in monitoring management,

resulting in high earnings quality. In the resource-dependence tradition, empirical research has established a link between board directors and corporate performance (Boyd, 1990; Dalton *et al.*, 1999; Pfeffer, 1972). According to this view, directors' skills and knowledge are resources that help to develop the corporate governance system. Resource dependency theory posits that having multiple experienced professionals on the board improves financial reporting quality through knowledge sharing (Pfeffer, 1972) thus reducing the likelihood of financial statement fraud.

2.4 Empirical Review

2.4.1 Board Independence and Likelihood of Financial Statement Fraud

Board independence or independent directors are internal governance mechanisms premeditated to reduce the agency cost arising from the conflict of interest between the principal and the agent. Board independence refers to a corporate board with a majority of independent non-executive directors (Akpan & Amran, 2014). An Independent board is vital in determining the board's effectiveness because it reduces managers' discretion and opportunistic tendencies. The proportion of executive and non-executive directors to the board's total number is germane in enhancing board independence. In support of the above suggestion, scholars have submitted that there exists a significant and negative nexus between board independence and the likelihood of financial statement fraud. As the proportion of non-executive directors increases, the likelihood of financial statement fraud decreases (Ilaboya, 2017). This empirical evidence supports the assertion (Fama & Jensen, 1983) that independent directors on the board help strengthen the board's internal control mechanism. In partial support of the above empirical findings, Mahama (2015), Eneh (2018), Kweki (2019), and Park and Shin (2004) reported a positive relationship between board independence and the likelihood of financial statement fraud, that is, as the proportion

of non-executive directors increases, so also the likelihood of financial statement fraud. This position, however, negates the assertion of (Fama & Jensen, 1983). At the same time, Yang and Buckland (2010) and Agrawal and Chadha (2005) found no evidence of the nexus between board independence and the likelihood of financial statement fraud.

An independent board must be unbiased in its responsibilities (Hashim, 2012). Lack of independence in the board may lead to agency problems as board members may not act in the best interest of shareholders (Fama & Jensen, 1983). A study conducted by Abdullah (2006) found that board independence has a significant positive relationship with earnings management. However, board independence is insufficient to explain the pattern of financial statement fraud. Independent directors are not involved in the day-to-day operation; it is therefore believed that the independent director will not be subjected to any pressure by the internal organization of the company. So, they are likely to act independently and act in the shareholders' interest. Consequently, an organization should have a majority of independent non-executive directors on its board for effective scrutiny of management activities (Siladi, 2006).

Busirin *et al.*, (2015) investigate the relationship between board independence and earnings manipulation. The study used three hundred and seventy-two (372) firms listed on the Malaysia Stock exchange floor from 2010 to 2013. They also applied the Beneish M-score to proxy earnings manipulation. The findings revealed that board independence exhibits a significant inverse relationship with earnings manipulation. Their results suggest that independent directors' presence plays a crucial role in monitoring and disciplining management who demonstrate divergent interests from shareholders. Salleh and Othman (2016) examined board size, board meetings, and corporate financial fraud considering board size, board duality, and board meeting as

possible determinants in preventing financial statements fraud among 99 listed companies for eleven (11) years from 2000 to 2010. The panel data revealed the cause-and-effect association among the observed variables. The study employed binary logistic regression analysis and found a significant relationship between the regularity of board meetings and corporate financial statements fraud. The study concluded that regular board meetings could be employed to prevent corporate financial statement fraud in Malaysia.

2.4.2 Frequency of Board Meetings and Likelihood of Financial Statement Fraud

The board meeting plays a significant role in preventing and detecting financial statement fraud as they are responsible for examining the integrity of the financial statements prepared by the management and audited by the internal and external auditors. Hoitash *et al.*, (2009) posit that adherence to corporate governance requirements on audit committee composition, performance, experience, and independence will increase external auditors' independence and improve audit quality as it is unlikely that auditors will be dismissed if an unfavorable opinion is issued.

The frequency of board meetings is a measure of the demand for monitoring a firm's financial reporting process (Goodwin-Stewart & Kent, 2006) and is believed to be translated into higher financial reporting transparency. The creditors, in their relationship, view board meetings as an essential element with the firms (Anderson *et al.*, 2004). The 1999 Blue Ribbon Committee (BRC) report, likewise, advocates that audit committees can best assure the quality of the financial statements by having at least four meetings a year (Anderson *et al.*, 2004). Zhang *et al.*, (2007) state that firms need additional meetings to solve problems such as internal control weaknesses. Abbott *et al.*, (2004) and Anderson *et al.*, (2004) state that meeting frequency may indirectly provide information on how active and valuable audit committee

monitoring is and the committee's diligence in carrying out their responsibilities. Abbott *et al.*, (2004) find that firms are more likely to appoint industry-specialist auditors if independent audit committees meet at least twice a year. Beasley (1996) finds that fraudulent firms' audit committees meet less often than non-fraud firms. Anderson *et al.*, (2004) find that the number of audit meetings is negatively associated with the frequency of accounting restatements. Further, they showed that meeting frequency is associated with lower costs of debt financing, lower yield spreads, and the types of auditor change made by the company.

The FRC has guidance on audit committees that recommends they meet no fewer than 3 times per financial year (Sulaiman, 2017). The frequency of meetings by the board committee is a measure of diligence from the members as it should be accompanied by crucial prior research, so the meetings generate the necessary discussions and raise any important questions to go to the board. The meeting quality is mainly dependent on the chair as they are charged with providing pre-meeting material, setting the agenda, controlling the discussions, and helping develop member relationships; they are the nexus of the committee (Abernathy *et al.*, 2014). Kantudu and Samaila (2015) examine the relationship between corporate governance and the financial reporting quality of Oil firms listed on the NSE. Financial reporting quality is a proxy for the qualitative characteristics of financial statements. The data was a secondary source obtained from the audited annual report of the sampled firms. The study period was twelve years (2000 to 2011). The study applies multiple regression as its regression technique to analyze the data. Findings from the study suggest that board meetings have an insignificant inverse relationship with financial reporting quality. This implies that the higher the frequency of meetings, the more the increase in earnings manipulation, decreasing the quality of financial reporting. Shan *et al.*, (2013)

investigate the relationship between Malaysia's corporate governance practices and the increasing incidence of fraud in Malaysian listed companies from 2007 to 2009. The findings indicate that the number of board meetings exhibits a positive relationship with fraud, suggesting that the higher the frequency of board meetings, the more ineffective the board is in detecting fraud in the firm. Similarly, Gulzar (2011), Monsif Azzoz and Khamees (2016), and Mersni and Othman (2016) reported that the number of board meetings exhibits a positive relationship with earnings management.

Using all published CSRC enforcement actions from 1999 to 2003, Chen *et al.*, (2006) assessed the relationship between ownership structure, corporate governance, and fraud in China. They found a positive between the frequency of board meetings and corporate fraud.

2.4.3 Board gender Diversity and Likelihood of Financial Statement Fraud

Mishra and Jhunjunwala (2013) have categorized board diversity into two broad categories; surface-level and deep-level. The surface level diversity consists of observable features or readily detectable attributes (Milliken & Martins, 1996), whereby under observable characteristics, board diversity observes gender, age, nationality, race/ethnic background, while under less observable features, board diversity observes board education, board experience, board expertise. Deep-level diversity is more towards personality diversity, including cognitive features, perceptions, values, and personal characteristics. According to (Milliken & Martins, 1996), the reason for categorizing the board diversity is that “when differences between people are visible, they are particularly likely to evoke responses that are due directly to biases, prejudices, or stereotypes.” Generally, the vital observable attributes studied include gender, age, education, and experience (Erhardt *et*

al., 2003). The need for board diversity is as crucial as other contributing factors toward an effective board of directors, whereby board diversity brings substantial benefits to the board, including new ideas and preferred interaction styles (Milliken & Martins, 1996) in hindering corporate fraud. Board diversity with differing opinions and approaches would encourage critical thinking and creative problem-solving in the boardroom for better strategic decision-making and strategic direction for corporate success ((Mishra & Jhunjhunwala, 2013). Should the senior management possess the power in the corporation, the board of directors is considered incapacitated in carrying out their fiduciary duties; therefore, the board diversity value is meaningless (Dhir, 2015).

Among the various board diversity characteristics, gender is one of the most significant issues faced by modern corporations (Jones *et al.*, 2007). Board Diversity is heterogeneity or difference among members of a particular board and has many aspects for categorization ranging from task skills to relational skills, age to nationality, functional background to religious background, and from political preference to gender preference (Chakrabarti *et al.*, 2015). Within board diversity, the male-to-female ratio composition is a significant aspect of the board's decisions. Female directors tend to bring different perspectives to the board and can influence the various board-level outcomes, including decision-making. Supporting the presence of female board members (Lipton & Lorsch, 1992) suggest that sound decision-making requires equilibrium between skills and attributes among the board members and that female director are more likely to be objective and independent.

Mishra and Jhunjhunwala (2013) refer to gender diversity as the proportion of women and men directors on corporate boards, whereby when there is less difference or gap between the number of women and men directors, the greater the diversity. In general,

the board of directors is dominated by men. Many questions have arisen in tandem with gender diversity on corporate boards; whether there is a scarcity of qualified women to be in the same boardroom with men directors, whether women themselves are afraid to take the challenge and responsibilities of being directors, or whether women are lacking human capital quality. Jubilee *et al.*, (2018) suggested that a corporation or an organization with gender diversity on its corporate board has more significant potential for; (1) a better understanding of markets and external linkages, (2) an increase in corporate creativity and innovation, and (3) improved decision-makings that promote more alternative courses of action. According to Dhir (2015), global statistics have shown that women are perceptible to be underrepresented on corporate boards. However, Norway, Sweden, and Finland exhibit the highest percentages of women directors on corporate boards, at 40.9%, 27%, and 26.8%, respectively. In Malaysia, on average, women occupy only 7% - 7.8% of the boardroom seats (Qadorah & Fadzil, 2018). Thus, women are underrepresented on corporate boards, albeit with a high contribution to the workforce (Amran *et al.*, 2014).

Kamarudin *et al.*,(2018) investigated whether board member diversity: gender, ethnicity, and role diversity, is associated with the likelihood of financial statement fraud. The sample of their study included all fraud firms disclosed by the Securities Commission Malaysia and matched with an equal number of non-fraud firms. A total of 124 firms were included in the study, comprising 62 firms that engaged in financial statement fraud and 62 non-fraud firms. The logistic regression analysis showed that financial statement fraud is positively associated with less gender diversity and role diversity. In addition, there was a significant relationship between governance characteristics (board size, board meeting, and chairperson dual role) and financial

statement fraud. This study concluded that firms engaging with fraud had more frequent board meetings, were dominated by Chinese ethnicity, and had a high proportion of independent directors. The chairman and Chief Executives Officer (CEO) or Managing Director were the same person/ director.

2.4.4 Board Expertise and Likelihood of Financial Statement Fraud

The presence of board members with certain types of expertise affects the level of disclosure due to their awareness of the importance of transparent reporting (El-Chaarani, 2017). Specialized knowledge allows expert directors to provide valuable advice while simultaneously monitoring managers. When the board comprises experts, there is always a level of confidence in the financial statement reported (Aifuwa & Embele, 2019). To become an expert on a board, a director must possess adequate educational and professional experience in finance, accounting, and auditing.

Generally, companies prefer to have more financial experts on the corporate board, but this demand for financial experts increased after the Sarbanes-Oxley Act (SOX) of 2002. Expertise can be defined as "skillfulness by virtue of processing special knowledge." It is evaluated based on standards discussing the aptitude to perform a task (Das *et al.*, 2020). The corporate governance reports of CalPERS in 1997, Blue Ribbon Commission report in 1998, SOX in 2002, and NYSE in 2004 also suggest some guidelines regarding the expertise of board members. These reports were issued in response to various accounting scandals since the 1990s, such as Enron, HealthSouth, Tyco, WorldCom, and different financial crises (Singhvi *et al.*, 2020). Reports further include the significance of the financial expertise of directors in performing their central function of monitoring the firm's financial performance. According to the SOX (Section 407), a financial expert is a person with experience in

accounting or finance or supervisory expertise. Kusumastati (2021) and Widyasari and Ayunda (2020) use SOX of 2002 to explain financial expertise.

Research on Singaporean enterprises highlighted the critical significance of onboard accounting and financial professionals in promoting the quality of financial disclosure. The study of UK businesses also discovered that financial specialists could help promote corporate social responsibility (CSR) disclosures with their reputation, background, and experience). Additionally, previous research indicates that board financial experts contribute to the board's proficiency, firm practices (Klein, 2002), and implementation (Kusnadi *et al.*, 2016), resulting in high-quality governance. Abdiolu (2016) asserts that good governance is associated with lower cash holdings.

Xianga and Wenyan Zhu (2020) examined the effect of independent academic directors on the likelihood of corporate fraud. The authors used a sample of listed Chinese companies from 2007 to 2017 and found that expert directors mitigate fraudulent activities.

2.4.5 Moderating Effect of Audit Quality on the Relationship between Board Characteristics and the Likelihood of Financial Statement Fraud

Audit quality encompasses the key elements that create an environment that maximizes the likelihood that quality audits are performed consistently. Differences in audit quality lead to conflicts in the credibility of auditors and the reliability of corporate earnings reports. Corporate financial scandals pose a significant challenge to the credibility and utility of the audit. The audit quality refers to the extent of the external auditor's ability to discover fundamental errors and irregularities in the financial statements, in addition to reducing the asymmetry of information between

management and shareholders, thus protecting the interests of shareholders (Shubita, 2021).

Auditing is a financial service given by an auditor in checking and evaluating the financial report for a client's firm. The evaluation is not purposed to find any mistake or fraud, though it is likely that any of them could be found in its process. The evaluation of a financial report is intended to assess the fairness of the financial report according to the accounting principle. DeAngelo (1981) in Puspaningsih and Syarifa (2021) defined audit quality as the probability that the auditor can find and report the existence of a violation in the client accounting system.

An essential role of external auditors is to reveal whether a company's income statement and balance sheet are presented fairly. Thus, it improves the quality of an audit service and provides users of financial statements with reasonable assurance that reported accruals are accurate and then certifies the quality of the reported earnings (Al-Thuneibat *et al.*, 2011). Ahmed *et al.*, (2021) investigated the moderating effect of audit quality on the relationship between board characteristics and audit report lag of listed non-financial companies in Nigeria. Their study revealed a negative and significant effect of board size on audit report lag, and board independence has a positive but non-significant effect on audit report lag; however, board meeting has a positive and significant impact on audit report lag. Besides, audit quality has a negative and significant moderating effect on the relationship between board characteristics and audit report lag of listed non-financial companies in Nigeria. The study concludes that audit quality moderates the relationship between board characteristics and audit report lag of listed non-financial companies in Nigeria and recommends strict adherence to regulatory guidelines to avoid regulatory fines.

Abdullahi (2020) examined the moderating effect of audit quality on corporate attributes and the financial performance of listed manufacturing firms. Corporate attributes as an independent variable were proxied by leverage, liquidity, and tangibility, and audit quality was used as a moderating variable. Their study established that leverage has a significant positive impact on financial performance, and liquidity and tangibility have an insignificant negative effect on the financial performance of the firms. In contrast, the joined interaction of leverage and audit quality as moderating variables of the study has a significant adverse effect on the financial performance of the firms. The rise of the financial crisis and scandals worldwide has highlighted the external auditor's important role in providing transparent, reliable, quality audits. External auditor enhances the board's effectiveness in solving conflicts of interest between management and the firm's owners to promote honesty and integrity in preparing financial statements. The external auditor's role is to enhance the independent board by upholding high audit quality, which inhibits earnings management and increases the quality of audited financial statements. Apart from external audits, internal audit is also one of the most vital mechanisms in monitoring and promoting the corporate governance system in an organization.

The in-house internal department is more effective in detecting and reporting fraud, instead having an internal audit function be fully outsourced. Besides, a study by Hassan (2005) and Archabeault (2002) found that in-house internal audits would give extra advantages because they already know the firm. The internal audit department's responsibility is regularly reviewing the internal control system and ensuring effective and efficient operations are performed.

2.5 Control Variables

Other than board independence, frequency of board meetings, board gender diversity, and board expertise, other factors may influence the likelihood of financial statement fraud, and thus the need to control for the variables. This study controlled for firm size, firm age, and firm performance.

2.5.1 Firm Size and Likelihood of Financial of Financial Statement Fraud

Larger enterprises have better internal control systems and are subject to greater market scrutiny (Bedard & Johnstone, 2004). The company's size and the likelihood of financial statement fraud are linked in previous research (Sharma & Kuang, 2014). Larger companies have stronger monitoring demands and incentives (Klein, 1998). Firms with larger budgets want more audit board independence. Each year's firm size is a natural logarithm of total assets. Unlike small businesses, shareholders of medium and large enterprises put a lot of pressure on the company to perform well. Using a sample of listed firms in China, Liao, Chen & Zheng (2019) found that firm size had a negative and insignificant effect on financial statement fraud. Therefore, management must match these expectations—the larger the company, the more invested capital, and thus the more attention from shareholders.

2.5.2 Firm Age and Likelihood of Financial of Financial Statement Fraud

The length of a company's existence affects its financial reporting quality. Various management and firm-level objectives drive this. Gemma and Masulis (2011) claim that older firms have less incentive to exaggerate financial reports, establishing a link between age and fraud. As a result, young companies become more prone to falsifying financial statements (Belitski & Desai, 2019). Scholars have defined firm age as the number of years since incorporation (Ghafoor *et al.*, 2019; Perols & Lougee, 2011; Wang & Hsu, 2013; Waswa *et al.*, 2018). Harjoto (2017), who

considered a sample of firms listed in criminal corporate fraud cases in the USA, found that firm age positively affected fraud.

2.5.3 Firm Performance and Likelihood of Financial of Financial Statement Fraud

In various business areas, financial performance has received significant attention from academics. This is because financial performance affects an organization's sustainability and, eventually, its eventual survival (Nassar, 2016). High performance mirrors organizational productivity and efficacy in utilizing the organization's resources, which even leads to the significant economic success of the nation. A study in China that used a sample of 2,742 firm-year observations over the entire period from 2009 to 2014 reported a negative and significant association between firm performance and fraud. Harjoto (2017) employed a sample of 152 criminal corporate fraud cases in the USA from the US Department of Justice (DOJ) between 2000 and 2010 and found no association between firm performance and financial statement fraud.

2.6 Research Gap

The empirical literature shows a growing body of research investigating financial statement fraud (Dechow *et al.*, 1996; Eneh, 2018; Hambrick *et al.*, 1996; Hasnan & Hussain, 2015), and the volume of related studies continues to grow. A majority of these studies, however, have focused on the developed world of Asia, America, the United Kingdom, India, and selected countries in Africa (Ahmed *et al.*, 2021; Akeju & Babatunde, 2017; Akpan & Amran, 2014; Eneh, 2018; Omoye & Eragbhe, 2014). The extant studies have produced mixed and inconclusive findings because of the diverse contexts in which they were conducted, resulting in conceptual and contextual gaps. Most of these studies have investigated the direct effect between the study

variables. Generalizing these findings in developing nations in East Africa may lead to erroneous conclusions. There is a shortage of studies that have examined the moderating effect of audit quality on the relationship between board characteristics and the likelihood of financial statement fraud.

In the context of Kenya, several studies have been done. Most of these investigations have focused on banking and insurance corporations previously listed on the NSE. Throughout the study period, the number of listed institutions at the EASE has expanded, while others have been delisted, placed in receivership, or declared bankrupt because of financial statement fraud.

Moreover, previous empirical research has not placed a premium on the moderating variable explored in this study. Additionally, existing empirical research exhibit methodological discrepancies. While most empirical studies examined employed a descriptive research design and a panel approach, others employed a mixed-methods or cross-sectional approach. Additionally, some used secondary data sources, while others used primary or a combination of the two. As such, this work addresses the theoretical, conceptual, contextual, and methodological shortcomings outlined herein.

2.7 Conceptual Framework

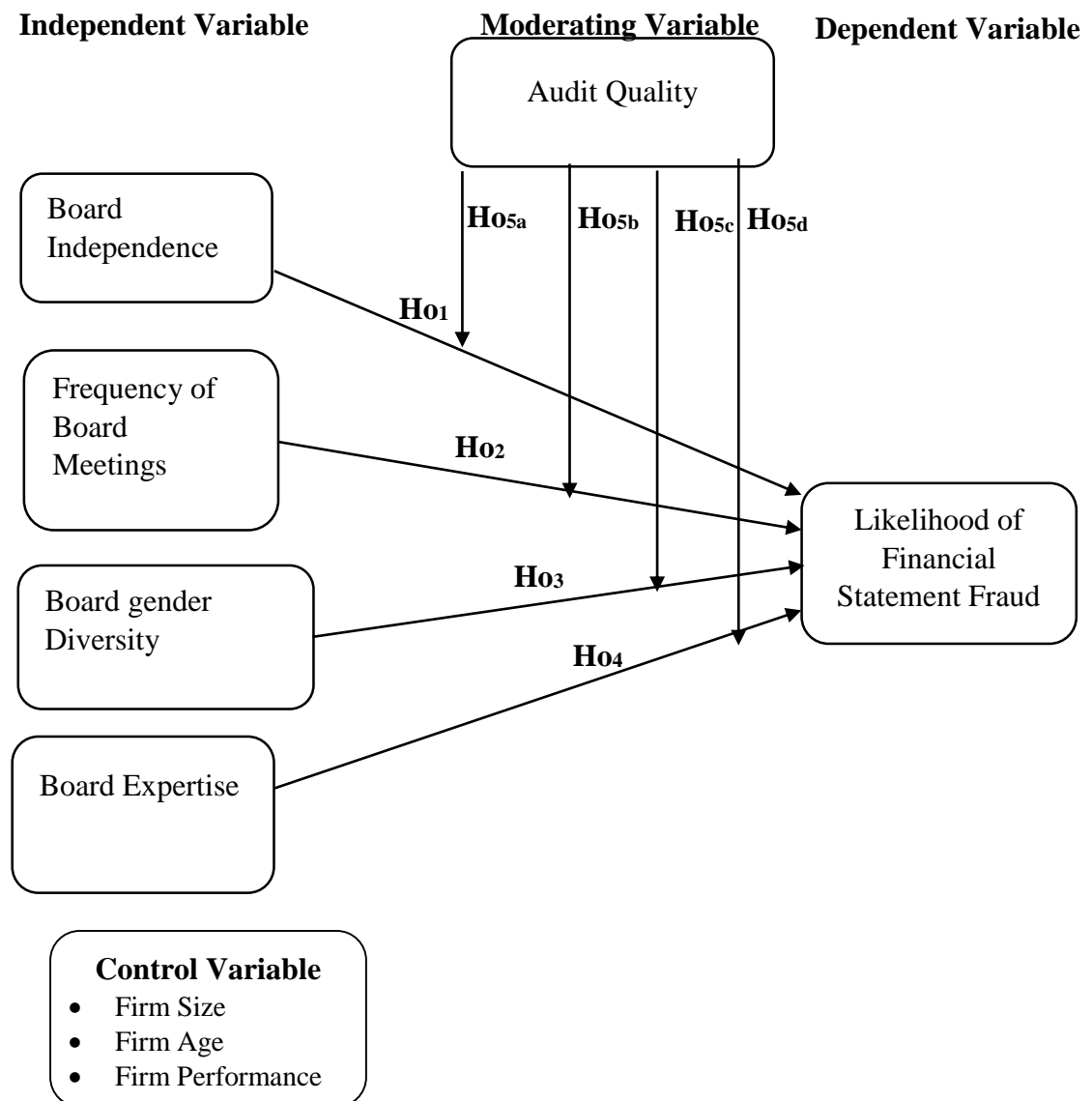


Figure 2.1: Conceptual Framework Diagram

Source: Researcher, 2022

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the research design, target population, data collection, measurement of the study's variables, research model, data analysis, and diagnostic tests.

3.2 Research Design

A research design is a conceptual structure within which research is conducted; it constitutes the blueprint for data collection, measurement, and analysis (Kothari, 2004). The components of research design are sample procedures, research strategies, instruments, and techniques for gathering evidence, interpreting data, and reporting conclusions. This study employed a longitudinal and explanatory research design. A longitudinal research design involves collecting numerical data on the same variable over a lengthy period. Therefore, this design is ideal for this study because it considers panel data set for fifteen years from 2007 to 2021. An explanatory research design is often used to deduce the cause-and-effect relationship between variables (Kassa, 2021). An explanatory research design was ideal because this study sought to examine whether audit quality moderated the association between board characteristics and the likelihood of financial statement fraud among listed manufacturing firms in East Africa.

3.3 Target Population

According to Ngechu (2017), a population is a defined set of people, services, elements, events and groups or households being investigated. The study's population was all the manufacturing firms listed on the securities exchanges in East Africa.

Fifteen (15) manufacturing firms are listed on securities exchanges in East Africa. For a smaller population of less than 100 ($N < 100$), the entire population should be taken (Gray, 1996).

3.3.1 Inclusion and Exclusion Criterion

The inclusion and exclusion criterion was based on whether the firm was operating from 2007 to 2021. Manufacturing firms delisted or cross-listed were also excluded from the final sample. The final sample was 225 firm-year observations.

3.4 Data Collection

The study used a data collection schedule to extract secondary data from audited annual reports of the respective firms. Secondary data are beneficial for enhancing comprehension, describing the study's problem, and offering more information to help solve a problem (Ghauri & Gronhaug, 2005). Secondary data is also more reliable and objective than primary data (Sekaran & Bougie, 2019; Vartanian, 2010). The financial reports were downloaded from the individual company's website and the African financials website

3.5 Measurement of Variables

The purpose of this study was to investigate the moderating effect of audit quality on the relationship between board characteristics and the likelihood of financial statement fraud among manufacturing firms listed in East Africa. The variables were measured as follows;

3.5.1 Dependent Variable

3.5.1.1 Likelihood of Financial Statement Fraud

The dependent variable in this study was the likelihood of financial statement fraud. This variable was measured using the Beneish M-Score model developed by Beneish

(1999). Though the model is comparable to the Altman Z score, it is optimized to estimate the probability of manipulation rather than bankruptcy.

According to Rezaee and Kedia (2012), a fraudulent financial statement is frequently preceded by a misstatement or earnings management from quarterly financial statements that are initially deemed insignificant but eventually escalate to massive fraud and produce materially misleading annual financial reports. As a result, Beneish *et al.*, (2012) created a methodology to divide businesses into two categories: those who commit fraud and those that do not. M-Score is a statistical model that analyzes eight financial ratios to determine whether a company's financial statements have been manipulated.

The eight financial ratios from company accounting data and weighted by a coefficient to calculate the high probability of whether the company's reported earnings have been manipulated. When applying the M-score model, if the predictive score is more than -2.22, it gives way to a red flag, indicating that there is a possibility of manipulation occurring in the organization, or it could also indicate a strong likelihood of the firm being a manipulator. Therefore, this model could determine the likelihood of financial statement fraud in an organization. Based on the model, a value equal to or less than -2.22 is scored as "0," and a value greater than -2.22 is scored as "1". The Beneish M-Score Model is computed from eight different ratios. The eight variables are then weighted together according to the following formulae

$$\begin{aligned} \text{M - Score} = & -4.84 + 0.92 * \text{DSRI} + 0.528 * \text{GMI} + 0.404 * \text{AQI} + 0.892 * \text{SGI} \\ & + 0.115 * \text{DEPI} - 0.172 * \text{SGAI} + 4.679 * \text{TATA} - 0.327 * \text{LEVI}. \end{aligned}$$

Where DSIR = Days Sales in Receivables Index GMI= Gross Margin Index (GMI), AQI= Asset Quality Index, SGI= Sales Growth Index, DEPI = Depreciation Index,

SGAI= Sales General and Administrative Expenses Index, TATA = Total Accruals to Total Assets, LEVI= Leverage Index

DSRI (Day's Sales in Receivable Index)

It measures the ratio of receivables to sales rate in the current period compared to the preceding period. If DSRI is greater than 1, the percentage of receivables to sales in the current period is greater than that of the previous period ($t - 1$). It is an indication that the financial report regarding DSRI has been manipulated, or it is a signal that the entity has varied its credit policy and is currently offering more credit than it did previously. Suppose this effect does not depict a uniform trend. In that case, it indicates that more revenues are either produced on credit terms rather than in cash or that the business has difficulty collecting cash from its trade debtors. A growing DSRI index could be an entity's precise lawful action to ensure that it extends more credit to its customers, which results in revenue overstatement. Hence, a rapid increase in the DSRI index gives a hint to forensic examiners to prove that financial reports are manipulated or credit terms are modified (Maccarthy, 2017). An unusual increase in the day's sales in receivables can arise because of revenue inflation. Thus, an increase in receivables that is not proportionate to sales may be a sign of revenue hiking. There is a higher likelihood that overstating revenues/profits would be associated with a large growth in DSRI (Beneish, 1999).

$$DSRI_1 = \frac{\text{Accounts receivable}_t}{\text{Sales}_t} / \frac{\text{Accounts receivable}_{t-1}}{\text{Sales}_{t-1}}$$

GMI (Gross Margin Index)

It is a measure of the ratio of the gross margin in the previous period ($t - 1$) to the gross margin in the current period (t). When the GMI of a firm is greater than 1, its gross margin declines, and it represents an undesirable signal about its financial performance (Beneish, 1999). Alfian and Triani (2019) and Lev and Thiagarajan (1993) argue that declining gross profit is an unwanted signal for the entity's future. According to Warshavsky (2012), when evaluating an entity's financial health, the quality of its earnings remains an integral part. Hence, entities are lured into earnings manipulations when they are falling. Given this, there should be a positive relationship between GMI and the likelihood of financial statement fraud (Beneish, 1999).

$$GMI_t = \frac{Sales_{t-1} - COGS_{t-1}}{Sales_{t-1}} \bigg/ \frac{Sales_t - COGS_t}{Sales_t}$$

AQI (Asset Quality Index)

It is a measure of the asset quality ratio in the current period compared to the previous period ($t - 1$). Alfian and Triani (2019) assert that increasing asset realization risk tends to breed escalation of asset capitalization and cost deferrals by entities. An index greater than 1 shows that the firm has expanded its cost deferral or raised its tangible assets and bred earnings manipulation. Pustynick (2009) also argues that such a higher index (more than 1) is a sign of expenses capitalization and deferral of others to future periods. Harrington (2005) asserts that a rise in AQI is a sign of capitalization of extra expenses to sidestep, posting them to the income statement to cause a reduction in profit. Hence, a positive relationship exists between AQI and the likelihood of manipulating financial results (Beneish, 1999).

$$AQI_t = \left[\frac{\text{Current Asset}_t + PPE_t + \text{Securities}_t}{\text{Total Assets}_t} \right] / \left[\frac{\text{Current Asset}_{t-1} + PPE_{t-1} + \text{Securities}_{t-1}}{\text{Total Assets}_{t-1}} \right]$$

SGI (Sales Growth Index)

It is a measure of the ratio of sales in the current period to the previous period ($t - 1$). Where SGI is greater than 1, it indicates positive growth. Growth in sales itself does not necessarily mean manipulations. However, there is a tendency that growth will impose pressure on management to keep an entity's position and in meeting earnings targets. Harrington (2005) argues that entities with a high growth level tend to be significantly inspired to perpetrate fraud when there is a reversal in such trends. When a firm experiences magnificent losses in its inventory, it may serve as an inducement to manipulate its earnings.

$$SGI_t = \text{Sales}_t / \text{Sales}_{t-1}$$

DEPI (Depreciation Index)

It is a measure of the ratio of the depreciation rate in the previous period ($t - 1$) compared to the depreciation rate in the current period. An index greater than 1 shows a diminishing depreciation rate. It could result from a possible adjustment of the valuable life of property, plant, and equipment upwards, assets have been revalued, and a new method for revenue increase (Beneish, 1999). Alfian and Triani (2019) argue that a slow rate of non-current assets depreciation amplifies the possibility of a variation in the estimation of assets' useful lives or a new depreciation method adaptation to enhance earnings. Thus, there is a link between DEPI and financial statement fraud.

$$DEP_t = \frac{\text{Depreciation}_{t-1}}{\text{Depreciation}_{t-1} + PPE_{t-1}} / \frac{\text{Depreciation}_t}{\text{Depreciation}_t + PPE_t}$$

SGAI (Selling, General and Administrative Expenses Index)

It measures the ratio of selling, general, and administrative expenses (SGAEs) to sales in the current period compared to the SGAEs rate in the previous period ($t - 1$). SGAI emanates from the findings of Lev and Thiagarajan (1993). Likewise, an upsurge in SGAI is a sign of inefficient administrative and marketing management and may lead to an entity manipulating its earnings.

$$SGAI_t = \frac{SG\&A_t}{Sales_t} / \frac{SG\&A_{t-1}}{Sales_{t-1}}$$

LEVI (Leverage Index)

It is a measure of leverage in the current period compared to the LEVI in the previous period ($t - 1$). An index greater than 1 is an indication of rising debt levels. Thus, the firm is borrowing more to finance its operations. The fundamental purpose of LEVI's inclusion in the Beneish model is to detect manipulation of earnings triggered by an inducement in debt contracts. It explicitly ascertains the extent of errors in the entity's debt estimations, assuming that debts occur randomly. A high level of leverage could motivate a firm to manipulate its earnings. This explains the link between LEVI and financial statement fraud.

$$LEVI_t = \frac{Curr\ liability_t + long\ Term\ Debt_t}{Total\ Assets_t} / \frac{Curr\ liability_{t-1} + long\ Term\ Debt_{t-1}}{Total\ Assets_{t-1}}$$

TATA (Total accruals to total assets)

It is a measure of the ratio of total accruals to total assets. It ascertains how managers modify earnings by making discretionary accounting decisions. Jones (1991) states that many studies have employed total accruals to assess the extent to which management devises accounting policies to enhance profit. TATA is employed by

Beneish (1999) to ascertain the extent to which cash is used as the basis of reporting profit and indicates that higher positive accruals may be associated with a higher likelihood of financial report manipulation (Beneish, 1999).

$$TATAI_t = \frac{(Income\ continuing\ operations_t - CFO_t)}{Total\ Assets_t}$$

3.5.2 Independent Variable

3.5.2.1 Board Independence

Prior literature defines board independence as the board's proportion of outside and nonexecutive directors (Randøy & Jenssen, 2004). Therefore, this study measured board independence as the ratio of non-executive directors to the total number of board members (Chen, 2014).

3.5.2.2 Frequency of Board Meetings Frequency

Meetings of the audit committee enable board members to discuss and exchange views on how they intend to supervise managers' and firms' strategies. A more significant number of board meetings per year indicates more active directors who are thought to create a stronger level of corporate monitoring (Firth *et al.*, 2012). Board meeting frequency is measured as the number of times the board sat in a given year. The frequency of board meetings was measured as the logarithm of the total number of board meetings per year, which shows attendance status (Brick & Chidambaran, 2010).

3.5.2.3 Board Gender Diversity

Previous studies considered board gender diversity as the proportion of female directors to total board members. Accordingly, this study measured board gender

diversity as the ratio of women on the board to the total number of board members (Rjiba & Thavaharan, 2022).

3.5.2.4 Board Expertise

Board members' expertise denotes the extent to which the board has members with educational and professional experience in finance, accounting, and auditing. Thus, this study measured board expertise as a proportion of board members with accounting and financial knowledge (Githaiga & Kosgei, 2022; Marzuki, Wahab & Haron, 2016).

3.5.3 Moderating Variable

3.5.3.1 Audit Quality

A substantial corpus of accounting research has been conducted to ascertain the causes and effects of audit quality. The most often utilized audit quality proxies fall into input-based and output-based proxies (DeFond & Francis, 2005). Output-based measures typically include the following: (i) material restatements, preferably initiated by the auditor; and SEC AAERs; (ii) going concern opinions; (iii) financial reporting characteristics such as the use of signed or absolute discretionary accruals, the Dechow *et al.*, (2011) measure of earnings quality, or Basu's timely loss recognition measure (Basu, 1997), or the firm's propensity to meet or exceed contractual obligations. The term "input-based proxies" refers to the qualities of the auditor and the auditor's fees. Auditor size is the most often used indicator of auditor-specific attributes. In addition, the study measured audit quality as the total amount of auditor fees paid.

3.5.4 Control Variables

3.5.4.1 Firm Size

Following prior studies, firm size was measured as the natural logarithm of the total firm's assets (Lee *et al.*, 2014; Rashidah & Ali, 2006).

3.5.4.2 Firm Age

The firm's age is the years the entity has survived since its incorporation. Based on extant literature, this study measured the logarithm of the period (in years) the firm has existed since incorporation (Hu, 2011; Duréndez & Madrid-Guijarro, 2018).

3.5.4.3 Firm Performance

Borrowing from earlier studies, firm performance is measured as the return on Assets (ROA) (Githaiga & Kosgei, 2022; Githaiga *et al.*, 2022). ROA indicates companies' efficiency in generating income from their assets.

3.6 Data Analysis

The study used STATA version 13 to analyze the data because of its broad panel data manipulation capabilities, plus several statistical analysis procedures capable of analyzing modest to huge data sets (Carrin *et al.*, 2008). The data was analyzed through descriptive and inferential statistics. Specifically, measures of central tendency were used to summarize the data; the Pearson pairwise correlation coefficients and regression analysis were used to assess the relationship between the research variables.

3.6.1 Descriptive Statistics

As defined by Zikmund *et al.*, (2013), descriptive analysis is the process of transforming raw data into a form that is easily understood and interpretable by the rearrangement, ordering, and manipulation of data to yield descriptive facts.

Descriptive statistics aid the researcher in practically simplifying large amounts of data, as each descriptive statistic condenses a large amount of data into a more manageable amount.

3.6.2 Inferential Statistics

Correlation and regression analysis are examples of inferential analysis. Tables and figures were used to present the findings. Correlation analysis is a statistical technique that analyses the degree of link between two or more variables (Levin, 2011). In statistical modelling, the analysis is the first stage in establishing the link between the independent and dependent variables. Prior to performing multiple regression analysis, a correlation matrix was generated. The relationship between the independent variables is analyzed to aid in the development of a multiple prediction model that identifies non-existence of relationships where the correlation value is 0. When the correlation is 1.0, it indicates the existence of an ideal negative or positive relationship (Hair *et al.*, 2006).

According to the values interpretation, there is no relationship between 0 and 1, whereas there is a perfect relationship between 0 and 1. The Panel data model's regression analysis was utilized to assess and estimate the effect of the independent variable on the dependent variable. Panel data was utilized to analyze and quantify relationships between variables, which was expressed as an equation capable of predicting generally the values of one variable given the values of other variables.

3.7 Model Specification

The study used panel data spanning the years 2007–2021. To examine the direct and moderating effects, the study adopted a hierarchical multiple regression model (Baron & Kenny, 1986). A series of hierarchical linear regression analysis were used to

examine the hypotheses. The following model parameters and regression equations were adopted.

Model 1. Testing the effect of control variables on the likelihood of financial statements fraud.

$$LFSF = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \beta_3 FP_{it} + \varepsilon_{it}$$

Model 2. Testing the effect of independent variable on likelihood of financial statements fraud.

$$LFSF = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \beta_3 FP_{it} + \beta_4 BI_{it} + \beta_5 FBM_{it} + \beta_6 BGD_{it} + \beta_7 BE_{it} + \varepsilon_{it}$$

Model 3. Testing the effect of the moderator (audit quality) on the outcome variable (likelihood of financial statements fraud).

$$LFSF = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \beta_3 FP_{it} + \beta_4 BI_{it} + \beta_5 FBM_{it} + \beta_6 BGD_{it} + \beta_7 BE_{it} + \beta_7 AQ_{it} + \varepsilon_{it}$$

Model 4. Introducing the first interaction term between audit quality and board independence.

$$LFSF = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \beta_3 FP_{it} + \beta_4 BI_{it} + \beta_5 FBM_{it} + \beta_6 BGD_{it} + \beta_7 BE_{it} + \beta_7 AQ_{it} + \beta_9 BI * AQ + \varepsilon_{it}$$

Model 5. Introducing the second interaction term between audit quality and the frequency of board meetings

$$LFSF = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \beta_3 FP_{it} + \beta_4 BI_{it} + \beta_5 FBM_{it} + \beta_6 BGD_{it} + \beta_7 BE_{it} + \beta_7 AQ_{it} + \beta_9 BI * AQ + \beta_{10} FBM * AQ + \varepsilon_{it}$$

Model 6. Introducing the third interaction term between audit quality and board gender diversity.

$$LFSF = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \beta_3 FP_{it} + \beta_4 BI_{it} + \beta_5 FBM_{it} + \beta_6 BGD_{it} + \beta_7 BE_{it} + \beta_7 AQ_{it} + \beta_9 BI * AQ + \beta_{10} FBM * AQ + \beta_{11} BGD * AQ + \varepsilon_{it}$$

Model 7. Introducing the fourth interaction term between audit quality and board expertise.

$$LFSF = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \beta_3 FP_{it} + \beta_4 BI_{it} + \beta_5 FBM_{it} + \beta_6 BGD_{it} + \beta_7 BE_{it} \\ + \beta_7 AQ_{it} + \beta_9 BI * AQ + \beta_{10} FBM * AQ + \beta_{11} BGD * AQ + \beta_{12} BE \\ * AQ + \varepsilon_{it}$$

LFSF = Likelihood of Financial Statement Fraud

BI = Board Independence of firm i at year t

FBM = Frequency of Board Meetings of firm i at year t

BGD = Board Gender Diversity of firm i at year t

BE = Board Expertise of firm i at year t

AQ = Audit Quality of firm i at year t

FA= Firm Age

FS= Firm Size

FP= Firm Performance

$\beta_1 \dots \beta_{12}$ = Coefficients of the equations

t = Time

i = Firm

ε = error term

3.8 Diagnostic Tests and Assumption of Multiple Linear Regression

3.8.1 Normality Test

Regression models assume that the residual is normally distributed for valid hypothesis testing. In addition, a normality test should be performed to ensure that error terms of the ordered probit model are indeed normal. This assumption was tested using the Shapiro-Wilk test for normality. The null hypothesis (H_0) of this test assumes that the distribution is normal; whereas, the alternative hypothesis (H_a) predicts that the residuals are not normally distributed.

3.8.2 Multicollinearity

This study tests this assumption by examining the correlation matrix, tolerance, and variance inflation factor (VIF) values to determine the presence of multicollinearity. VIF reveals if a predictor has a strong linear relationship with another predictor (or set of predictors). According to Field (2009), the tolerance value is calculated by dividing one by the value of VIF. The variance inflation factor (VIF) is a term that refers to a component that raises the variance of a given partial regression coefficient due to the variable's degree of correlation with the other predictors in the model (Dennis, 2011). As a rule, lower levels of Variance Inflation Factor (VIF) are preferable, as higher levels of VIF have been shown to have a detrimental effect on the outcomes of multiple regressions.

While the explanatory variables should be correlated to some extent, if they are strongly correlated, it is impossible to discern the independent influence of an explanatory variable on the criterion variable to test for the inflation factor (VIF) and multicollinearity tolerance values. When the VIF value is 10 or greater, it implies that a predictor has a strong linear association with other predictor variables (Hair *et al.*, 2006).

3.8.3 Unit Root Test

Because the study employed panel data, it is necessary to ascertain whether the variables in question are stationary or non-stationary. It is possible to observe a series of finite variances and constant oscillations from the mean whenever stationarity exists. As a result, it is necessary to determine whether the variables have a constant mean and variance across time. It is possible to have deceptive inferences if the information collected is not stationary, and regression models gained may be spurious

or affected by uneven regression problems. Im-Pesaran-Shin and Fisher-type tests for unit roots were used. These tests' null hypothesis (H_0) is the presence of unit root, while the alternative hypothesis (H_1) is stationary. Therefore, a p-value less than zero implies that the data is stationary.

3.9 Probit Regression Technique

Probit regression is commonly used to analyze data where the outcome variable is binary. Probit regression does not follow the numerous assumptions of the linear regression model based on the ordinary least squares methods, specifically regarding linearity between the dependent and independent variables, normality, and homoscedasticity.

In this regard, binary logistic regression can handle a non-linear relationship between the dependent and independent variables because it applies a non-linear log transformation of the linear regression (Hosmer *et al.*, 2013). When the dependent variable is categorical, the ordinary least square (OLS) method can no longer produce the best linear unbiased estimator; the ordinary least square is biased and inefficient. The categorical dependent variable model adopts the maximum likelihood (ML) estimation method, whereas OLS uses the moment-based method. The primary assumption of the probit model is the goodness of fit or calibration of a model measures how well the logistic model describes the response variable. Assessing the goodness of the fit involves investigating how close the value predicted by the model is to the observed values (Bewick *et al.*, 2005). Neither overfit nor underfit should occur.

The Hosmer –Lemeshow test is a widely used test for assessing the goodness of fit of a logistic model and allows for any number of explanatory variables, which may be

continuous or categorical. The goodness of fit test produces a p-value; if it's less than 5% ($p < 0.05$), the model is rejected. If the p-value is greater than 0.05, then the model passes the test, and it is said to be fit (Allison, 2014)

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the findings and interpretation of the results. Specifically, the section discusses the results of the descriptive statistics, the diagnostic tests, correlation results, and the regression analysis.

4.2 Descriptive Statistics

The summary descriptive statistics for the research variable over the 15 years from 2007 to 2021 with 225 firm-year observations are presented in table 4.1. The mean likelihood of financial statement fraud, measured by M-score, was 0.417 (standard deviation = 0.494, minimum= 0.00, and maximum =1.00). On average, there is a 41.7% likelihood that listed manufacturing firms in East Africa engage in financial statement fraud. The standard deviation of 0.494 indicates high variability in financial statement fraud. The average board independence was 0.629 (standard deviation = 0.234, minimum= 0.200, and maximum =0.800). The statistics show that the mean frequency of board meetings was = 5.434 (standard deviation = 1.526, minimum = 3.000, maximum = 9.000). This implies that the selected firms meet at least 5 times a year on average. The average board gender diversity was 0.317 (standard deviation = 0.199, minimum = 0.000, maximum = 0.666). This implies that, on average, the selected firms have at least a third of the board members being women. Besides this, it indicates low female participation in corporate boards. Board financial expertise had a mean of 0.603 (standard deviation = 0.174, minimum = 0.25000, maximum = 0.900). These results suggest that, on average, the boards had a high number of board members with accounting and finance knowledge. The findings further revealed that the mean audit quality was 4.102 (standard deviation =1.220, the minimum value

=2.114, and the maximum = 6.833). Firm age had a mean of 1.323 (standard deviation = 0.379, minimum= 0.00 and maximum = 1.792). The mean firm size was 7.027 (standard deviation = 1.104 and minimum= 4.915 and maximum = 9.942). The firm performance had a mean of 0.389 (standard deviation = 0.28, minimum= 0.022 and maximum = 1.848), meaning on average, the selected firms reported a return on asset of approximately 38.9%, as shown in Table 4.1.

Table 4.1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
M-Score	225	0.417	0.494	0.000	1.000
Board Independence	225	0.629	0.234	0.200	0.800
Frequency of Board meetings	225	5.434	1.526	3.000	9.000
Board Gender Diversity	225	0.317	0.199	0.000	0.666
Board Expertise	225	0.603	0.174	0.250	0.900
Audit Quality	225	4.102	1.220	2.114	6.833
Firm Age	225	1.323	0.379	0.000	1.792
Firm Size	225	7.027	1.104	4.915	9.942
Firm performance	225	0.389	0.280	0.022	1.848

Source: Researcher (2022)

4.3 Correlation Analysis

Pearson correlation coefficient was used to determine the link between the response variable and the explanatory before estimating the probit regression model. This was done to assess the strength and nature of the association between the dependent, independent, and moderating variables. The coefficients of the correlation analysis are presented in a matrix, as shown in Table 4.2.

Table 4.2: Correlation Analysis

	LFSF	FA	FS	FP	BIN	FBM	BGD	BE	AQ
LFSF	1.0000								
FA	-0.0178	1.0000							
FS	0.3903*	-0.1389*	1.0000						
FP	-0.1664*	-0.3655*	0.0405	1.0000					
BIN	-0.3264*	0.2183*	-0.3720*	-0.0374	1.0000				
FBM	-0.4312*	-0.0286	0.0715	-0.0310	0.0723	1.0000			
BGD	-0.3681*	-0.1433*	-0.2051*	0.0212	0.2168*	0.1201	1.0000		
BE	-0.4563*	-0.1141	-0.3761*	0.0816	0.0747	0.1394*	0.3409*	1.0000	
AQ	-0.1931*	-0.1613*	0.4537*	0.0308	-0.2740*	0.1132	-0.0320	0.0417	1.0000

* $\rho < 0.05$

Source: Researcher (2022)

Pearson pairwise correlation results in the table show that firm age (FA) and the likelihood of financial statement fraud were insignificant and negatively correlated ($r = -0.0178$, $\rho < 0.05$). In addition, the correlation results indicated that firm size (FS) and the likelihood of financial statement fraud had a positive correlation ($r = 0.3903$; $\rho < 0.05$). The study further revealed that firm performance (FP) and the likelihood of financial statement fraud had a negative correlation ($r = -0.1664$, $\rho < 0.05$). The correlation between board independence (BIN) and the likelihood of financial statement fraud was negative and significant ($r = -0.3264$, $\rho < 0.05$). Further, the correlation between the frequency of board meetings (FBM) and likelihood of financial statement fraud was negatively correlated ($r = -0.4312$, $\rho < 0.05$). The study findings showed that there was a significant and negative relationship between board gender diversity (BGD) and the likelihood of financial statement fraud ($r = -0.3681$, $\rho < 0.05$). There was a significant negative relationship between board expertise (BE) and the likelihood of financial statement fraud ($r = -0.4563$, $\rho < 0.05$). Audit quality (AQ) was significant and negatively correlated with the likelihood of financial statement fraud ($r = -0.1931$, $\rho < 0.05$).

4.4 Diagnostic Statistics

4.4.1 Normality test

The study used the Shapiro-Wilk test for normality to examine whether the error term was normally distributed. The p-value of 0.142, table 4.3, suggests that the null hypothesis that the residuals are normally distributed cannot be rejected.

Table 4.3: Shapiro Wilk Normality Test

Shapiro-Wilk W test for normal data					
Variable	Obs	W	V	Z	Prob>z
Resid	225	0.8035	0.0543	3.90	0.14219

4.4.2 Test for stationary / Unit Root Test

The study began by testing whether the study variables were stationary. The purpose of this test is to confirm that the mean and variance of the factors have been constant over different seasons. As a result, using variables in the logistic model does not trigger false regression. According to the empirical literature, if the data includes time-series data sets, the first thing is to assess whether the data set is stationary on a specific type of test. Furthermore, fifteen years of data were used concerning the number of observations of the time series set of the data used in the study. That revealed that there was a sufficient number to test the stationary of the data. Econometric models produce non-sensible or spurious regression results if the data is not stationary (Gujarati, 2012). Data is nonstationary if the series does not have a constant mean, variance, and auto-covariance at various lags over time (Hossain & Hossain, 2015). Performing a stationary test is to confirm that the mean and variance of the variable are not time-invariant. Time series data suffers from seasonal shocks of one period may strongly influence subsequent periods. The study used the Fisher-type

unit root test and the Im-Pesaran-Shin unit root test, which are based on the following hypotheses:

Null hypothesis (Ho): *Panel data contain unit root*

Alternative hypothesis (Ha): *panel data is stationary.*

Going by the ρ -values in table 4.4, the null hypothesis can be rejected at all conventional significance levels for all the study variables, meaning there is no unit root in the data. Therefore, the means and variances in our data are not time-dependent. Consequently, the application of multiple regression estimation models was ideal.

Table 4.4: Results of Unit Root Test

Variable	Fisher-type	Im-Pesaran-Shin
Likelihood of financial statements fraud	18.7411	-2.5076
ρ -value	(0.000)	(0.001)
Board Independence	28.214	-2.469
ρ -value	(0.003)	(0.000)
Frequency of board meetings	3.521	-2.575
ρ -value	(0.000)	(0.000)
Board gender diversity	18.794	-1.581
ρ -value	(0.000)	(0.000)
Board expertise	21.1862	-2.717
ρ -value	(0.000)	(0.000)
Audit quality	13.147	-2.128
ρ -value	(0.017)	(0.000)
Firm size	18.618	-1.806
ρ -value	(0.000)	(0.020)
Firm age	2.766	-2.986
ρ -value	(0.003)	(0.02)
Firm performance	3.428	-1.493
ρ -value	(0.000)	(0.000)

Source: Researcher (2022)

4.4.3 Multicollinearity

Multicollinearity occurs when independent variables are highly correlated or when the predictor variable is a near combination of another predictor variable (Keith 2006). The more variables overlap (correlate), the less able researchers are to separate the effects of variables. Multicollinearity is present when correlation coefficients are above 0.9 (Hair, 2006; Saunders, Lewis & Thornhill, 2009) and 0.8 (Garson, 2013; Gujarati, 2012). Variance inflation factors (VIF) were also used to diagnose. The rule of thumb for a larger VIF value is ten (Keith, 2006, Shieh, 2010).

According to Hair *et al.*, (2010), a model is said to be free from the problem of multicollinearity if the *tolerance* value is > 0.10 and the VIF value is < 10 . It can be concluded from table 4.5 that for the research variables (firm size, firm age, firm performance, board independence, frequency of board meeting, board gender diversity, and board expertise) that the minimum variance inflation factor was at 1.16 while the maximum variance inflation factor was at 1.67.

The maximum value of 1.6 is less than ten (10), implying no multicollinearity in the study. This is further supported by the correlation analysis presented in table 4.2 because all the coefficients are less than 0.8. Therefore, the explanatory variables do not suffer from multicollinearity.

Table 4.5: Test for Multicollinearity

Variable	VIF	1/VIF
FS	1.67	0.597313
BE	1.43	0.697546
AQ	1.43	0.701017
BIN	1.29	0.772471
FA	1.28	0.779172
FBM	1.19	0.842307
BGD	1.18	0.844829
FP	1.16	0.860610
Mean VIF	1.33	

Source: Researcher (2022)

4.4.4 Model specification

The study tested for model specification using the Ramsey RESET test. Table 4.6 highlights the results of the Ramsey RESET test. From the findings in the table, the probability values of the computed statistics in the Ramsey RESET test of 0.063 is higher than the threshold value of 0.05, implying the model does not seem to be misspecified.

Table 4.6: Ramsey RESET

Ramsey RESET test using powers of the fitted values of LFSF

Ho: model has no omitted variables

$$F(3, 211) = 2.47$$

$$\text{Prob} > F = 0.0630$$

Source: Researcher (2022)

4.4.5 Hosmer-Lemeshow of fit test

Table 4.7 shows the Hosmer-Lemeshow goodness of fit statistical results. The goodness of fit test helps to decide whether the model is correctly specified or fitted. When the p-value is less than 0.05 (p-value <0.05), then the model is rejected and if the p-value >0.05, then the model passes the test and thus the model said to be fit.

Table 4.7 shows that the p-value of 0.357 is greater than 0.05; therefore, the model is said to be fit.

Table 4.7: Hosmer- Lemeshow of Fit Test

Probit model for LFSF goodness-of-fit test	
number of observations =	225
number of covariate patterns =	225
Pearson chi2(212) =	179.61
Prob > chi2 =	0.357

Source: Researcher (2022)

4.5 Results of the Probit Regression Analysis

4.5.1 Testing the Effect of the Control Variables

Before investigating the effect of the predictor variables on the dependent variable, the study examined the impact of the control variables, firm age, firm size and firm performance on likelihood of financial statement fraud. The results are as presented in table 4.8

Table 4.8: Testing for Control Variables

Probit regression		Number of obs =	225		
		LR chi2(3) =	46.64		
		Prob > chi2 =	0.0000		
Log Likelihood =	-128.16701	Pseudo R2 =	0.1539		
LFSF	Coef.	Std. Err.	Z	P>z	[95% Conf. Interval]
FA	-.1722212	.2665208	-0.65	0.518	-.6945923 .35015
FS	.527141	.0904441	5.83	0.000	.3498737 .7044082
FP	-1.203919	.4084251	-2.95	0.003	-2.004417 -.4034204
_cons	-3.282445	.8029304	-4.09	0.000	-4.856159 -1.70873

Source: Researcher (2022)

The probit regression was used to examine the effect of the control variables on the likelihood of financial statement fraud and the results are presented in table 4.6. The goodness of fit measure indicate that, the model perfectly fits the data given the

likelihood ratio statistics of the high significant chi-square ($\rho < 0.000$). This signifies that the model has strong explanatory power with a pseudo R² of 0.1539 meaning the specification suits the model and the control variables used for the estimation explain 15.39 percent of the variation of the variables. The estimated coefficient of the control variables poses the expected signs.

The effect of firm age on the likelihood of financial statements fraud was statically insignificant and the results agree with those of previous studies (Seifzadeh, Rajaei & Allahbakhsh, 2021). This implies firm age is not a determinant of the likely to manipulate financial statements. The effect of firm size on the likelihood of financial statement fraud had positive and significant effect. Harjoto (2017) and Seifzadeh *et al.*, (2021), reported similar results. The finding suggests that larger firms have a higher propensity of manipulating their financial statements. However, Liao, Chen & Zheng (2019) reported a negative and insignificant association, while Seifzadeh *et al.*, (2021) and Harjoto (2017) found a negative and significant relationship. For firm performance, the results show firm performance had a negative and significant effect on the likelihood of financial statement fraud. Based on the findings it can be inferred that underperforming companies have more incentives for engaging in financial statements fraud compared to those reporting good financial performance. In addition, Liao, Chen & Zheng (2019) reported a negative and significant association between return on asset and fraud. Conversely, Harjoto (2017) found no relationship between firm performance and the likelihood of financial statement fraud.

4.5.2 Testing the Direct Effect

The probit regression model is used for the empirical statistics to analyze predictor variables, as shown in Table 4.9. The goodness of fit measures indicates that the model perfectly fits the data, given the likelihood ratio statistics of the highly

significant chi-square ($p < 0.000$). This signifies that the model has strong explanatory power with a pseudo R² of 0.5328, meaning the specification suits the model, and the predictor variables used for the estimation explain 53.28 percent of the variation of the variables. The estimated coefficient of the predictor variables poses the common signs. The findings reveal that all four predictor variables used in the study produced estimated coefficients that were statistically significant at a 0.05 level of significance. Negative coefficient signs imply that a unit increase in the predictor variables reduces the likelihood of financial statement fraud.

The first hypothesis (**H₀₁**) stated that: *there is no significant effect between board independence and the likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa.*

The results of the independent variables reveal that board independence has a negative coefficient value of $\beta = -2.22$ and a corresponding p -value = 0.002, < 0.05 is statistically significant, indicating board independence reduces the likelihood of financial statement fraud. Hypothesis H₀₁ is rejected, and the findings are similar to those of Uzun, Szewczyk, and Varma (2004), who studied US-based firms and Chen *et al.*, (2006) in China. However, they contradict Persons (2005), who found no significant relationship between board independence and the likelihood of financial statement fraud among fraud firms listed in the Accounting and Auditing Enforcement Releases by SEC. Similarly, Girau *et al.*, 2021 reported no association between board independence and financial statement fraud using a sample of companies listed Malaysian Securities Commission Enforcement Release from 2000 to 2016. Shan *et al.*, (2013) also found no association using 200 Malaysian-listed companies from 2007 to 2009.

Therefore, this study argues that increasing the percentages of outside and independent directors lowers the likelihood of listed manufacturing firms engaging in financial statement fraud. Proponents of the agency theory contend that a higher percentage of outside and independent directors increase the effectiveness of board oversight (Fama & Jensen).

The second hypothesis (**H02**) stated that: *there is no significant effect between frequency of board meetings and the likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa.*

The results confirm that the effect of the frequency of board meetings on the likelihood of financial statements fraud was negative and significant ($\beta = -9.045722$, $\rho = 0.000$). Therefore, H02 is rejected, and the conclusion is that the frequency of board meetings reduces the likelihood of financial statement fraud, and the results agree with those of previous studies (Beasley, 1996). However, they contradict Uzun *et al.*, (2004), who found no statistically significant relationship between the frequency of board meetings and corporate fraud among US firms. Shan *et al.*, (2013) and Chen *et al.*, (2006) found a positive association between the frequency of board meetings and fraud. Similarly, Girau *et al.*, 2021 found no relationship using fraud firms reported by the Malaysian Securities Commission Enforcement Release. Some studies also found that the increased frequency of board meetings was associated with increased cases of financial fraud (Zhou *et al.*, 2018; Salleh, Hamid & Harun, 2017). Based on the findings, many board meetings improved board effectiveness in detecting and deterring corporate fraud. Therefore, having more meetings, the board has sufficient time to monitor the preparation of financial reports.

The third hypothesis (H_{03}) stated that: *there is no significant effect between board gender diversity and the likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa.*

The findings show that board gender diversity (BGD) had a negative and significant effect on the likelihood of financial statement fraud ($\beta = -2.034581$, $\rho < 0.05$); therefore, H_{03} is rejected. The findings are consistent with Wang, Yu and Gao (2022), who reported that increasing the number of female directors thus reduces firms' propensity to engage in fraud among Chinese listed companies. Similarly, Wahid (2009), who studied US-listed firms, concluded that board gender diversity increases boards' monitoring ability and can decrease the frequency of negative accounting outcomes. The findings confirm that female directors are risk-averse and more committed to ethical practices than men on corporate boards (Maulidi, 2022). Adams and Ferreira (2009) further argue that firms with a high proportion of women on their corporate boards are more likely to report higher firm performance and stronger governance quality.

The fourth hypothesis (H_{04}) stated that: *there is no significant effect between board expertise and the likelihood of financial statement fraud among manufacturing firms listed on the securities exchanges in East Africa.* The findings indicate that board expertise (BE) had a negative and significant effect on the likelihood of financial statement fraud ($\beta = -3.668208$, $\rho < 0.05$); therefore, H_{04} is not supported, and the findings agree with those of Xiang and Zhu (2020) among Chinese firms. The findings suggest that directors with accounting and finance knowledge are more likely to discover unethical financial reporting, play an active role in management decisions, and offer more diverse solutions.

Table 4.9: Test for Direct Effect

Probit regression		Number of obs =	225		
		LR chi2(7) =	161.42		
		Prob > chi2 =	0.0000		
Log likelihood =	-70.777955		Pseudo R2 =	0.5328	
LFSF	Coef.	Std. Err.	Z	P>z	[95% Conf. Interval]
FA	-1.01382	.4099965	-2.47	0.013	-1.817398 - .2102415
FS	.428646	.1380342	3.11	0.002	.1581041 .699188
FP	-2.22207	.5750844	-3.86	0.000	-3.349214 -1.094925
BIN	-2.064148	.6624268	-3.12	0.002	-3.362481 -.7658157
FBM	-9.045722	1.337904	-6.76	0.000	-11.66797 -6.423479
BGD	-2.034581	.6543193	-3.11	0.002	-3.317023 -.7521383
BE	-3.668208	.9441897	-3.89	0.000	-5.518786 -1.81763
_cons	9.229104	2.037108	4.53	0.000	5.236445 13.22176

Source: Researcher (2022)

4.5.3 Test for Moderation

Moderation indicates that the causal relationship between two variables changes as a function of the moderator variable. This implies that the statistical test of moderation must measure the differential effect of the exogenous variable on the endogenous variable as a function of the moderator. A moderation effect could be enhancing, where increasing the moderator would increase the effect of the predictor (IV) on the outcome (DV); buffering, where increasing the moderator would decrease the effect of the predictor on the outcome; or antagonistic, where increasing the moderator would reverse the effect of the predictor on the outcome (Hayes, 2013). Moderation is said to exist if the following three conditions are fulfilled. First, the amount of variance accounted for with interaction should be significantly more than the variance accounted for without the interaction. Secondly, the coefficient for the interaction term should be different from zero. This is the simple slope for the interaction that is the basis of examining the simple slopes in probing the nature of the interaction. Lastly, the overall models with and without the interaction should be significant

(Hayes, 2013). Based on table 1, audit quality has a negative and significant effect on the likelihood of financial statement fraud ($\beta = -1.386$, $\rho < 0.05$). Specifically, a unit increase in audit quality reduces the likelihood of financial statement fraud by 1.386, as shown in table 4.10.

Table 4.10: Test for Moderation

Probit regression		Number of obs	=	225		
		LR chi2(8)	=	183.89		
		Prob > chi2	=	0.0000		
Log likelihood	= -59.545337	Pseudo R2	=	0.6069		
LFSF	Coef.	Std. Err.	Z	P>z	[95% Conf. Interval]	
FA	-1.107408	.4336693	-2.55	0.011	-1.957384	-.2574316
FS	1.534027	.2431264	6.31	0.000	1.057508	2.010546
FP	-2.044042	.6055248	-3.38	0.001	-3.230849	-.8572354
BIN	-2.247337	.6045966	-3.72	0.000	-3.432325	-1.06235
FBM	-3.218433	.7711414	-4.17	0.000	-4.729843	-1.707024
BGD	-1.846515	.8149166	-2.27	0.023	-3.443722	-.249308
BE	-3.548347	1.252947	-2.83	0.005	-6.004077	-1.092616
AQ	-1.386278	.2125782	-6.52	0.000	-1.802924	-.9696326
_cons	3.07702	1.888414	1.63	0.103	-.6242031	6.778242

Source: Researcher (2022)

The results of the moderating variable revealed that audit quality had a negative coefficient value of $\beta = -2.22$ and a corresponding ρ -value = 0.000, < 0.05 is statistically significant

4.4. Moderating Effect of Audit Quality on the Relationship between Board Characteristics and the Likelihood of Financial Statement Fraud.

To test the moderation, the predictor variables and the moderator were mean-centered before creating the interaction terms. Each interaction term was hierarchically entered into the model. The results for hierarchical regression are presented in the summary moderation table 4.11, and the summary for the moderation is presented in table 4.12. While the output for each step is annexed in appendix V. To ascertain whether there

was moderation and the nature of moderation, the beta coefficients and Modgraphs were considered. The hypothesis on moderation was tested as follows;

H05a Stated that: *audit quality does not moderate the relationship between board independence and the likelihood of financial statements fraud*. The interaction term of board independence and the likelihood of financial statement fraud reported a beta coefficient $\beta = -2.065$ and $\rho < 0.05$. Therefore, the null hypothesis was rejected. Based on these findings, one unit interaction between audit quality and board independence will likely reduce financial statement fraud by 2.065 units. The modgraph further shows that with high audit quality and high board independence, the listed manufacturing firms are less likely to engage in financial statements fraud.

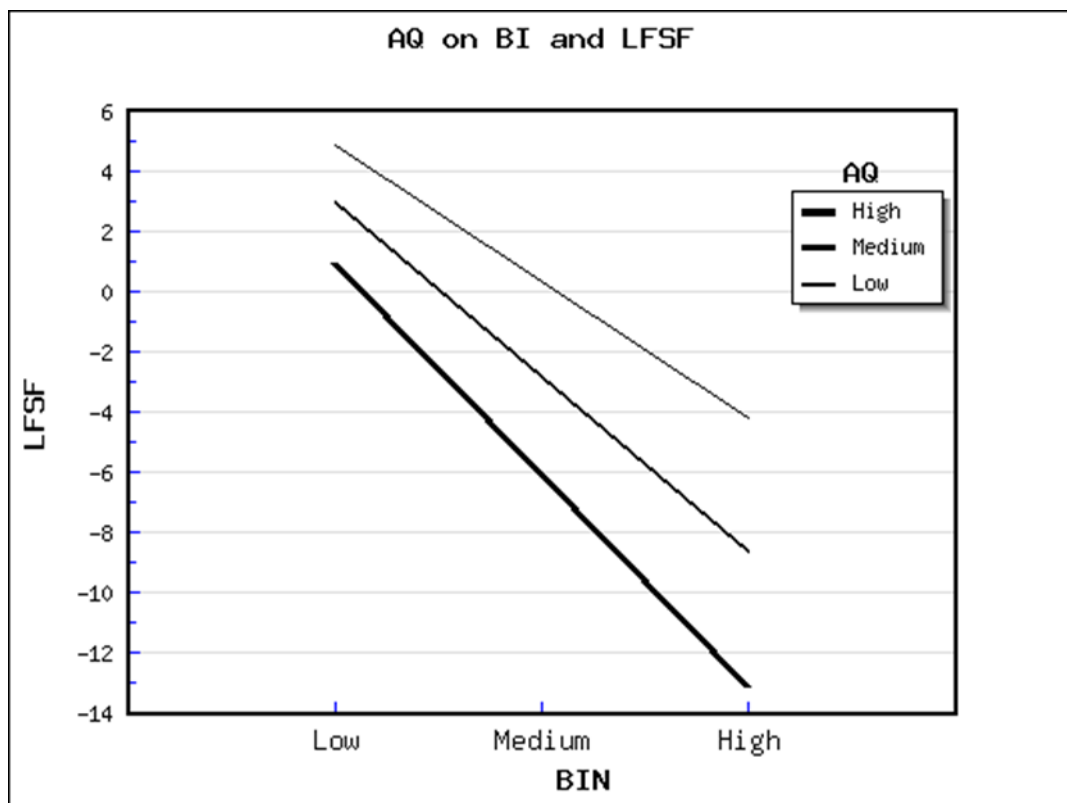


Figure 4.1: Moderating effect of audit quality on the relationship between board independence and the likelihood of financial statements fraud
Source: Researcher (2022)

H05b Stated that: *audit quality do not moderate the relationship between frequency of board meetings and the likelihood of financial statements fraud.* The interaction term of board meetings frequency and the likelihood of financial statement fraud reported a beta coefficient $\beta = -2.512$ and $p < 0.05$. Therefore, the null hypothesis was rejected. Based on these findings, one unit interaction between audit quality and board meetings frequency is likely to reduce financial statement fraud by 2.512 units. The modgraph further shows that as audit quality increases and more board meetings happen, this improves the board's effectiveness in detecting and deterring corporate fraud and the listed manufacturing firms are less likely to manipulate financial statements.

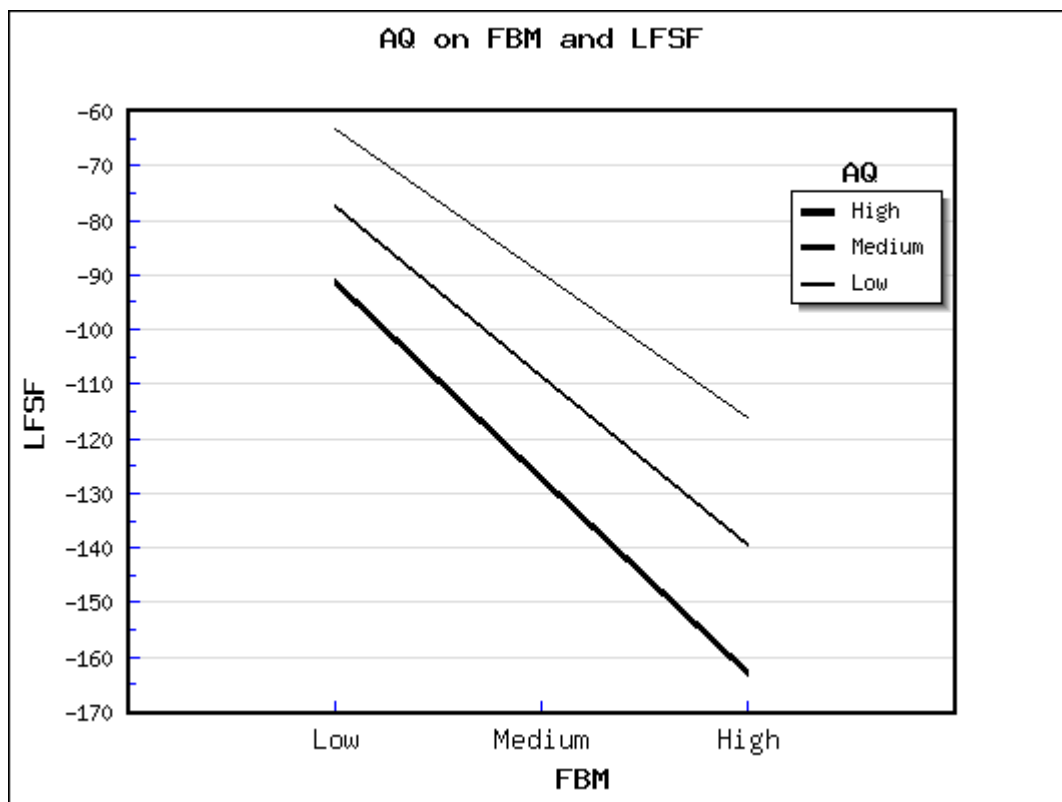


Figure 4.2: Moderating effect of audit quality on the relationship between frequency of board meetings and the likelihood of financial statements fraud.

Source: Researcher (2022)

H05c Stated that: *audit quality does not moderate the relationship between board gender diversity and the likelihood of financial statements fraud.* The interaction term of board independence and likelihood of financial statement fraud reported a beta coefficient $\beta = -2.266$, and $p < 0.05$, therefore the null hypothesis was rejected. These findings suggest that one unit interaction between audit quality and board gender diversity is likely to reduce financial statement fraud by 2.266 units. The modgraph further confirm that firms with high audit quality and more gender diverse boards are less likely to engage in financial statements fraud.

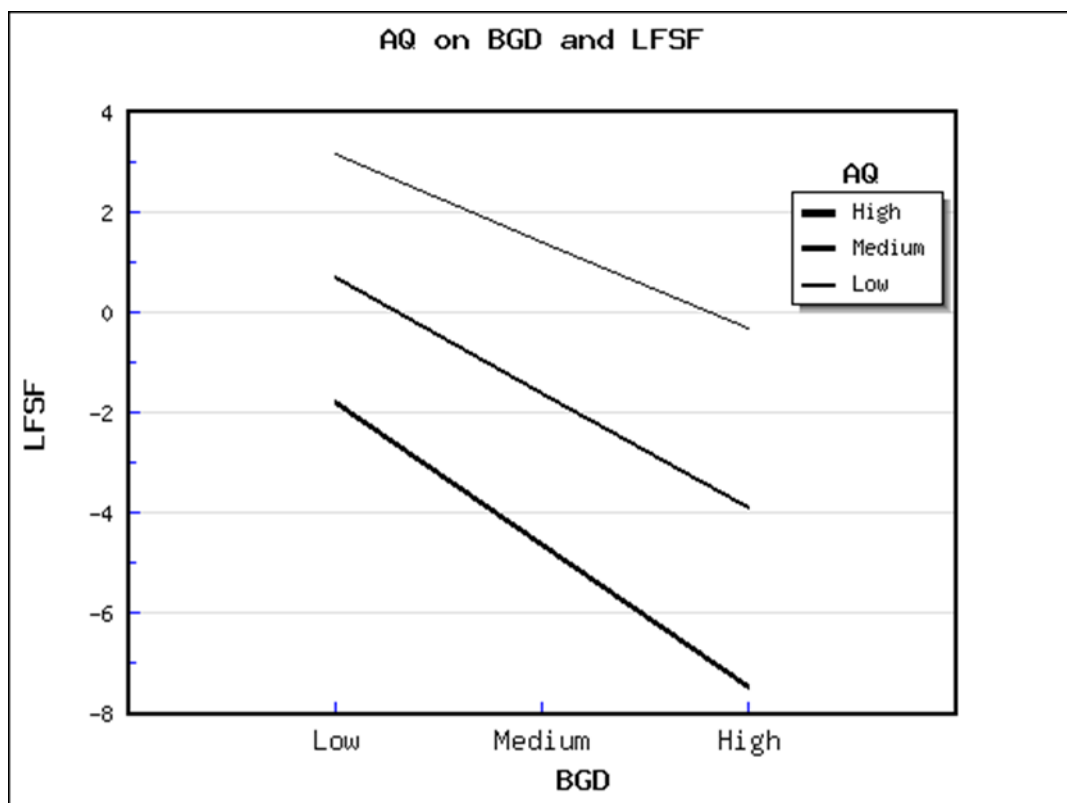


Figure 4. 3: Moderating effect of audit quality on the relationship between board gender diversity and the likelihood of financial statements fraud
Source: Researcher (2022)

H05d Stated that: *audit quality does not moderate the relationship between board expertise and the likelihood of financial statements fraud.*

The interaction term of board expertise and the likelihood of financial statement fraud reported a beta coefficient of $\beta = 3.41$ and $p < 0.05$. Therefore the null hypothesis was

rejected. These findings suggest that one unit interaction between audit quality and board expertise will likely increase financial statement fraud by 3.41 units. The modgraph further confirms that firms with high audit quality and a more diverse board are less likely to engage in financial statements fraud. The modgraph further reveals that financial statement fraud is lowest when audit quality is high, and board expertise is low. This implies that board members with accounting and financial expertise may use their knowledge to manipulate financial statements. The findings further emphasize the importance of external audits in financial reporting.

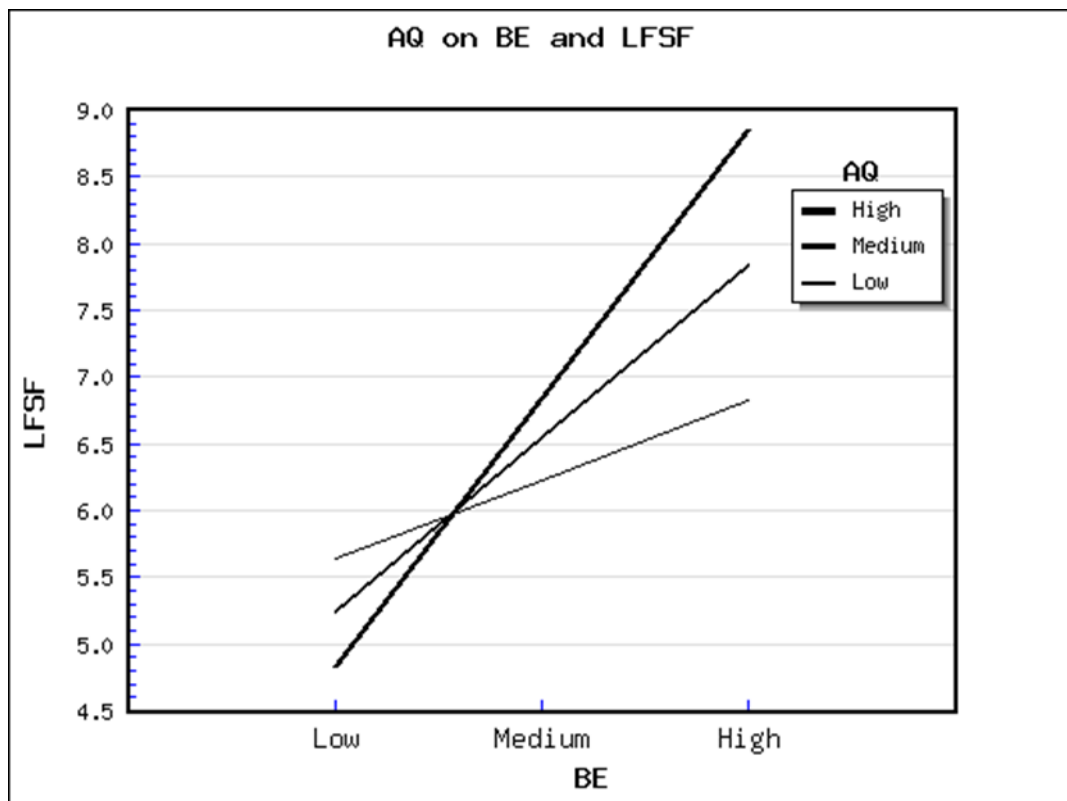


Figure 4. 4: Moderating effect of audit quality on the relationship between board expertise and the likelihood of financial statements fraud

Source: Researcher (2022)

Table 4.11: Moderating effect of audit quality on the relationship between board characteristics and likelihood of financial statements fraud

Probit regression		Number of obs =		225		
		LR chi2(12) =		252.69		
		Prob > chi2 =		0.0000		
Log Likelihood =	-25.143211		Pseudo R2 =	0.8340		
LFSF	Coef.	Std. Err.	Z	P>z	[95% Conf. Interval]	
FA	-1.375061	.8692293	-1.58	0.114	-3.078719	.3285972
FS	1.930378	.4468461	4.32	0.000	1.054576	2.80618
FP	-2.652629	.9527961	-2.78	0.005	-4.520075	-.7851828
BIN	-3.250032	1.369116	-2.37	0.018	-5.93345	-.5666145
FBM	-10.05612	2.405229	-4.18	0.000	-14.77028	-5.341953
BGD	-2.196331	1.020505	-2.15	0.031	-4.196484	-.196177
BE	-6.228812	2.849992	-2.19	0.029	-11.81469	-.6429302
AQ	-1.765801	.359499	-4.91	0.000	-2.470407	-1.061196
BIN*AQ	-2.06536	.9518583	-2.17	0.030	-3.930968	-.199752
FBM*AQ	-2.512356	1.250422	-2.01	0.045	-4.963138	-.0615739
BGD*AQ	-2.266875	1.028437	-2.20	0.028	-4.282575	-.2511747
BE*AQ	3.341692	1.699105	1.97	0.049	.0115061	6.671877
_cons	9.266395	4.910417	1.89	0.059	-.3578445	18.89063

Source: Researcher (2022)

Table 4.12: Summary moderation table

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.
	(Std. Err.)	(Std. Err.)	(Std. Err.)	(Std. Err.)	(Std. Err.)	(Std. Err.)	(Std. Err.)
_cons	-3.282(0.803)**	9.229(2.037)**	3.077(1.888)**	11.166(3.337)**	9.805(4.099)**	7.742 (4.086)**	9.266 (4.910)**
FA	-0.172(0.267)	-1.013 (0.499)**	-1.107 (0.434)**	-2.078(0.698)**	-1.898(0.760)**	-1.413 (0.771)**	-1.375 (0.869)**
FS	0.527 (0.090)**	0.429(0.138)**	1.534(0.243)**	1.677 (0.339)**	1.898 (0.403)**	-2.043 (0.437)**	1.930 (0.447)**
FP	-1.204(0.408)*	-2.222(0.575)**	-2.044 (0.606)**	-2.801 (0.820)**	-2.610 (0.894)**	-2.908 (0.933)**	-2.653 (0.953)**
BIN		-2.064 (0.662)**	-2.247(0.605)**	-2.292 (1.033)**	-2.958(1.283)**	-3.279 (1.317)**	-3.250 (1.369)**
FBM		-9.046(1.338)**	-3.218 (0.771)**	-11.281(1.918)**	- 9.673 (2.105)**	-9.502 (2.156)**	-10.056(2.405)**
BGD		-2.035(0.654)**	-1.847 (0.815)**	-2.355 (0.898)**	-2.038 (0.936)**	-2.217 (0.994)**	-2.196(1.026)**
BE		-3.668(0.944)**	-3.548 (1.253)**	-5.561 (1.724)**	-5.968 (2.120)**	-4.827(2.081)**	-6.229(2.850)**
AQ			-1.386 (0.213)**	-1.591 (0.285)**	-1.869 (0.356)**	-1.864(0.358)**	-1.766(0.359)**
BIN*AQ				-2.701 (0.794)**	-2.488(0.855)**	-2.140(0.888)**	-2.065(0.952)**
FBM*AQ					-3.539 (1.276)**	-3.188 (1.313)**	-2.512 (1.250)**
BGD*AQ						-1.950(0.971)**	-2.267(1.028)**
BE*AQ							3.342 (1.699)**
Log likelihood	-128.167	-70.778	-59.545	-35.535	-30.049	-27.794	-25.143
Pseudo R-square	0.1539	0.5328	0.6069	0.7654	0.8016	0.8165	0.8340
^Δ R-square	0	0.3789	0.0741	0.1585	0.0362	0.0149	0.0175
LR chi2	46.64	161.42	183.89	231.91	242.88	247.39	252.69
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.000

**p<0.05; standard errors in parentheses

Source: Researcher (2022)

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings obtained from the analysis, the conclusions, and the recommendations for policy, managerial, theory, and future research.

5.2 Summary of the Findings

The study's main objective was to investigate the moderating effect of audit quality on the relationship between board characteristics and the likelihood of financial statement fraud among manufacturing firms listed on securities exchanges in East Africa. The board characteristics constructs in the study were board independence (BI), frequency of board meetings (FBM), board gender diversity (BGD), and board expertise (BE). The moderating variable was audit quality (AQ), and the dependent variable was the likelihood of financial statement fraud (LFSF). The study's target population comprised sixteen (15) manufacturing firms listed at securities exchanges in East Africa. A 15-year data analysis was conducted from 2007 to 2021, resulting in 225 firm-year observations. Several reasons informed the choice of the study period. First, the Rwanda Stock Exchange was launched in January 2011. Second, the Nairobi Stock Exchange Limited changed to Nairobi Securities Exchange Limited in 2010 to support trading, clearing, and settling equities, debt, derivatives, and other associated instruments. Third, the Uganda Securities Exchange adopted the Settlement and Clearing Depository electronic trading system in 2010.

5.2.1 Summary of the Descriptive Statistics

Descriptive statistics provide an overview of the data consisting of minimum, maximum, average (mean), and standard deviation. The results indicated that, on

average, there was a likelihood that at least 41.7% of the listed manufacturing firms in East Africa would engage in financial statement fraud (Mean = 0.417). The standard deviation of 0.494 indicates high variability in financial statement fraud. Noteworthy from the findings also is that, on average, board independence was 0.629.

Further, the results show that the mean frequency of board meetings was 5.434. The average board gender diversity was 0.317. This implies that, on average, the selected firms had at least a third of the board members being women. This is an indicator of low female participation in corporate boards. Board financial expertise had a mean of 0.603. These results suggest that, on average, the boards had a high number of board members with accounting and finance knowledge. The findings further revealed that the mean audit quality was 4.102. Firm age had a mean of 1.323. The mean firm size was 7.027. The firm performance had a mean of 0.389, meaning on average, the selected firms reported a return on assets of approximately 38.9%

The Hosmer and Lemeshow Test of Goodness of Fit results revealed that the p-value of 0.357 is greater than 0.05; therefore, the model predicted that the observed value corresponds to the observed data.

5.2.2 Summary of the Correlation Analysis

The Pearson correlation coefficients indicated that firm age (FA) and the likelihood of financial statement fraud were insignificant and negatively correlated ($r = -0.0178$, $\rho < 0.05$). The correlation results, moreover, indicated that firm size (FS) and the likelihood of financial statement fraud had a positive correlation ($r = 0.3903$; $\rho < 0.05$). Results revealed that firm performance (FP) and the likelihood of financial statement fraud had a negative correlation ($r = -0.1664$, $\rho < 0.05$). The correlation between board independence (BIN) and the likelihood of financial statement fraud was negative and

significant ($r = -0.3264$, $\rho < 0.05$). Further, the correlation between the frequency of board meetings (FBM) and the likelihood of financial statement fraud was negatively correlated ($r = -0.4312$, $\rho < 0.05$). The findings also showed that there was a significant and negative relationship between board gender diversity (BGD) and the likelihood of financial statement fraud ($r = -0.3681$, $\rho < 0.05$). There was a significant negative relationship between board expertise (BE) and the likelihood of financial statement fraud ($r = -0.4563$, $\rho < 0.05$). Audit quality (AQ) was significant and negatively correlated with the likelihood of financial statement fraud ($r = -0.1931$, $\rho < 0.05$).

5.2.3 Summary of the Regression Results

The first model estimated the effect of the control variables on the likelihood of financial statements fraud among listed manufacturing firms in East Africa. Out of the three control variables used in the model, the estimated coefficients for two control variables, firm size and firm performance, were statistically significant at 0.05. Based on the findings, high and poor-performing firms are more likely to engage in financial statement fraud. Conversely, firm age has no significant effect on financial statement fraud.

The findings further revealed that all four predictor variables used in the study produced estimated coefficients that were statistically significant at a 0.05 level of significance. The results of the independent variables reveal that board independence has a negative coefficient value of $\beta = -2.22$ and a corresponding ρ -value = 0.002, < 0.05 , which is statistically significant, indicating board independence reduces the likelihood of financial statement fraud. The frequency of Board meetings (FBM) coefficient ($\beta = -9.045722$, $\rho = 0.000$) was negative and statistically significant at a 0.05 level, implying that board meeting frequency reduces the likelihood of financial

statement fraud. The findings revealed that board gender diversity (BGD) had a negative and significant effect on the likelihood of financial statement fraud ($\beta = -2.034581$, $\rho < 0.05$). Board expertise (BE) had a negative and significant effect on the likelihood of financial statement fraud ($\beta = -3.668208$, $\rho < 0.05$). The study further established several findings on the specific relationships between the predictor, moderator, and outcome variables, as summarized in the following subsections.

5.2.4 Effect of Board Independence on the Likelihood of Financial Statement Fraud

The first specific objective of the study was to examine the extent to which board independence influences the likelihood of financial statement fraud. Board independence (BIN) had a negative and significant effect on earnings management ($\beta = -2.22$, ρ -value = 0.002), meaning a unit increase in board independence reduces the likelihood of financial statement fraud (LFSF) by 2.22 units. This proves that a board with higher independence is an effective corporate governance monitoring mechanism, as suggested by the agency theory. This result resonates with Christian and Imagbe (2021) and Subair *et al.*, (2020), whose studies concluded that board independence negatively and significantly reduces the likelihood of financial statement fraud in manufacturing firms in Nigeria. On the contrary, this outcome is inconsistent with the result of Hundal (2013), Kantudu, and Samaila (2015). They found a significant association between board independence and the likelihood of financial statement fraud.

5.2.5 Effect of Frequency of Board Meetings on the Likelihood of Financial Statement Fraud

The study's second objective was to evaluate the effect of the frequency of board meetings on the likelihood of financial statement fraud. The frequency of Board

meetings (FBM) coefficient ($\beta = -9.045722$, $\rho = 0.000$) was negative and statistically significant at a 0.05 level, implying that the frequency of board meetings reduces the likelihood of financial statement fraud. The results of this study are also supported by research conducted by Nasir *et al.*, (2019) which states that the frequency of board meetings significantly influences the occurrence of financial statement fraud in Malaysia. Similarly, Purwiyanti and Laksito's (2022) study in Indonesia supports this study. Board meetings that are held regularly and continuously indicate the effectiveness of mitigating the likelihood of financial statement fraud.

5.2.6 Effect of Board Gender Diversity on the Likelihood of Financial Statement Fraud

The third objective of the study was to evaluate the effect of board gender diversity on the likelihood of financial statement fraud. Board gender diversity (BGD) had a negative and significant effect on the likelihood of financial statement fraud ($\beta = -2.034581$, $\rho < 0.05$), implying that gender diversity in the board reduces the likelihood of financial statement fraud. Thus, board gender diversity (BGD) significantly influences the likelihood of financial statement fraud. These findings are supported by previous studies (Orazalin, 2020; Saona *et al.*, 2018), which show that board gender diversity significantly influences the likelihood of financial statement fraud. On the contrary, evidence on this also shows contradictory results. Martín and Herrero (2018) showed that board gender diversity had no significant effect on the likelihood of financial statement fraud.

5.2.7 Effect of Board Expertise on the Likelihood of Financial Statement Fraud

The study's fourth objective was to evaluate board expertise's effect on the likelihood of financial statement fraud. Board expertise (BE) had a negative and significant effect on the likelihood of financial statement fraud ($\beta = -3.668208$, $\rho < 0.05$), implying

that the presence of experts on the corporate board reduces the likelihood of financial statement fraud. This echoes the findings of Purwiyanti and Laksito (2022). Their study concluded that the expertise of the board, which has adequate expertise in accounting and finance, can help prevent the likelihood of financial statement fraud. The findings contradict that of Anichebe (2019), who submitted that the inclusion of a financial expert in the board would increase the likelihood of financial statement fraud in an organization as the board of directors who are experts may be influenced to carry out various forms of creative accounting intended to mislead users of financial reports.

5.2.8. Moderating Effect of Audit Quality

Audit quality has a negative and significant effect on the likelihood of financial statement fraud ($\beta = -1.386$, $\rho < 0.05$). Specifically, a unit increase in audit quality reduces the likelihood of financial statement fraud by 1.386 units. It was concluded that audit quality moderates the relationship between audit committee independence and earnings management. The interaction term of board independence and the likelihood of financial statement fraud reported a beta coefficient $\beta = -2.065$ and $\rho < 0.05$, leading to the conclusion that one unit interaction between audit quality and board independence is likely to reduce financial statement fraud by 2.065 units.

Furthermore, the results show a negative and significant moderating effect ($\beta = -2.512$; $\rho < 0.05$) of audit quality on the relationship between the frequency of board meetings and the likelihood of financial statement fraud. Based on these findings, one unit interaction between audit quality and frequency of board meetings is likely to reduce financial statement fraud by 2.512 units. A board that holds optimum meetings is active, and this contributes to its effectiveness in reducing the likelihood of

financial statement fraud. However, audit quality reduces the interplay between the frequency of board meetings and the likelihood of financial statement fraud.

The results also indicated a negative and significant ($\beta = -2.266$, and $\rho < 0.05$) of audit quality on the relationship between board gender diversity and the likelihood of financial statement fraud. These findings suggest that one-unit interaction between audit quality and board gender diversity will likely reduce financial statement fraud by 2.266 units.

Finally, audit quality also had a negative and significant moderating effect ($\beta = 3.41$, and $\rho < 0.05$) on the relationship between board expertise and the likelihood of financial statement fraud. These findings suggest that one unit interaction between audit quality and board expertise will likely increase financial statement fraud by 3.41 units.

5.3 Conclusion

The study sought to investigate the moderating effect of audit quality on the relationship between board characteristics and the likelihood of financial statement fraud among manufacturing firms listed on securities exchanges in East Africa. The issues of board attributes, audit quality, and the likelihood of financial statement fraud have attracted the interests of the general population, the audit profession, and all related parties in the wake of prominent financial scandals. There is an increasing research interest in board attributes and the likelihood of financial statement fraud. Despite the contributions of these studies, the relationship between board characteristics and the likelihood of financial statement fraud is inconclusive.

Based on the findings, the study made several conclusions. First, the study concluded that board attributes impact the likelihood of financial statement fraud in listed

manufacturing firms in East Africa. Thus, the study validates the agency theory on the monitoring functions of the board in reducing financial statements fraud.

Therefore, as the board independence, the proportion of non-executive directors increases, and the likelihood of financial statement fraud decreases. The non-executive directors bring their knowledge, expertise, and independent judgment on strategy and performance issues to the board. The board's fundamental responsibility is to reduce agency costs through the monitoring of the activities of management in the interest of shareholders. In addition to the monitoring function derived from the agency theory, the provision of resources function of the board under the resource dependency theory is needed to explain board members' skills, experience, and expertise that reduce the likelihood of financial statement fraud.

The frequency of board meetings is a significant proxy for measuring board monitoring and discipline effectiveness and intensity. It enables board members to carry out their board functions effectively and efficiently, disclosing more information to the stakeholders, thus reducing the likelihood of financial statement fraud. The frequency of board meetings that are held regularly and continuously indicates the board's effectiveness in carrying out its monitoring and supervisory responsibilities, which reduces the likelihood of financial statement fraud. Board meetings are intended to ensure constant communication among stakeholders, thus decreasing the likelihood of financial statement fraud. The number of board meetings is one proxy of the element of opportunity, which is an element in the fraud diamond theory. The results of this study support the fraud diamond theory, which proves that the element of opportunity proxied by the variable number of board meetings can be used to detect financial statement fraud.

The resource dependence theory postulates that board gender diversity improves the quality of the information provided by the board to executives due to the rich and unique information held by diverse directors, thus reducing the likelihood of financial statement fraud. The agency theory perspective argues that female directors improve the monitoring effectiveness of the corporate board over the quality of financial reporting practices and reduce the likelihood of financial statement fraud. Board diversity is a key to enhancing corporate governance practices in an organization as diversity in the boardroom fosters better decision-making and brings about innovation in an organization. Board gender diversity can improve governance decisions by the board of directors and enable a beneficial shift in-group dynamics.

A board with adequate expertise in accounting and finance can help the company reduce the likelihood of financial statement fraud. The board should have the sophisticated knowledge of financial matters to detect the likelihood of financial statement fraud. When the board includes members with experience and financial knowledge, there will always be high confidence in the financial and accounting statements. Thus, they can significantly reduce the likelihood of financial statement fraud. Therefore, the inclusion of financial experts on the board reduces the likelihood of financial statement fraud in an organization.

The role of auditing is to reduce information asymmetry in accounting numbers and to minimize the residual loss resulting from managers' opportunism in financial reporting. More precisely, the quality of the financial report is ultimate to shareholders, creditors, and investors, providing them with financial information about a company, depending on its reliability, translating into an investment decision. Audit quality enhances financial reporting by minimizing the likelihood of financial statement fraud and consequently improving the investors' trust. Higher audit quality

significantly increases the integrity of the firm's financial reporting system. Higher audit quality contributes to the monitoring mechanisms that can promote the quality of firms' financial reporting process by reducing the likelihood of financial statement fraud.

5.4 Recommendations

The findings from the study contribute to research in corporate governance, finance, and accounting fields. This section highlights how this study contributes to knowledge, theory, policy, and practice

5.4.1 Policy Recommendations

Based on the findings, regulators and policymakers should consider reforming corporate governance guidelines that would lessen the likelihood of financial statement fraud. First, listed firms should have a higher proportion of outside directors, and more board members should be knowledgeable in accounting and finance. Secondly, the findings highlight the importance of board gender diversity among East African listed manufacturing firms to constrain the likelihood of financial statement fraud. Therefore, the region may consider mandatory gender quotas in corporate boards, which is common in European countries.

5.4.2 Managerial implication

The study has several managerial contributions. First, shareholders should consider board characteristics that enhance board effectiveness in mitigating the likelihood of financial statement fraud. This entails having independent boards, frequent meetings, a high proportion of board members with financial expertise, and more female representation on the boards. Similarly, firms may consider managerial development courses on financial and accounting that will equip them with the knowledge and

skills to detect financial fraud. Second, there is a need for listed firms to enhance audit quality as a strategy for mitigating fraudulent financial reporting practices among managers. Besides, audit quality will improve investors' confidence and firm value. The central managerial implication from this study is that listed firms should seek to balance between the non-executive and executives directors to ensure board independence

Therefore, this study contributes to or improves the understanding of the impact of board attributes on the likelihood of financial statement fraud from a developing region perspective. This study may help improve the awareness of firms' decision-makers across the globe in constraining financial fraud through board attributes and audit quality. The findings of this study highlight that, to tackle the financial statement fraud problem, firms need to focus more on audit quality and corporate governance mechanisms.

5.4.3 Theoretical implication

The findings add to the current knowledge on board attributes and financial statement fraud. The contribution of this study is audit quality moderates the relationship between board characteristics and the likelihood of financial statement fraud of listed manufacturing firms in East Africa. This gap needs to be included in extant literature. Therefore, the findings of this study may form the basis for future studies in the area. Secondly, the results collaborate with the assertions of the agency theory propositions that board attributes are vital in mitigating unethical managerial behaviors such as financial statement fraud. Third, the study blends the agency and resource dependency theory in explaining the board characteristics in mitigating the likelihood of financial statement fraud.

5.5 Limitations of the Study

Despite the novelty of this study's findings, there are several limitations, which did not vitiate the generalization of our research findings. First, the study measured the likelihood of financial statement fraud using the M-score, which uses financial statement ratios. One limitation of the model is that it cannot be applied to financial companies or estimate the companies engaging in fraud. Therefore, the findings may not be generalized to financial firms. Future studies may consider firms listed as fraud by the relevant regulators.

Secondly, this study considered only four dimensions of board characteristics. Given the many dimensions of the board that affects its effectiveness, future studies may examine other attributes. Secondly, while the survey considered the four constructs of board structure, that is, board independence, frequency of board meetings, board gender diversity, and board expertise, there are also several board structure constructs that can help mitigate the likelihood of financial statement fraud. Hence, further research can be explored on how other constructs, such as board tenure, board activity, board size and CEO duality, and multiple directorships, among others, and their effect on the likelihood of financial statement fraud, may shed more light.

First, the study is limited to listed manufacturing companies in East Africa; therefore, expanding the study to other developed and emerging economies would shed more insights into how contextual differences affects the relationship among the variables.

Finally, the research variables were measured quantitatively based on published financial reports. Future studies should consider using primary data that may offer an in-depth understanding of the various board attributes.

5.6 Recommendations for Future Research

Future research could consider other items as moderating variables. Other components of corporate governance can be considered since this study only focused on four attributes of the board of directors. Other researchers should also consider including more control variables, such as leverage, as they may imply the likelihood of financial statement fraud.

This study used manufacturing firms listed in the East Africa Securities Exchange as its context. Future studies could concentrate on firms not listed in the securities market. This is especially important because listed and non-listed firms should comply with corporate governance guidelines as a best practice.

REFERENCES

- Abbott, L. J., Parker, S., & Peters, G. F. (2004). Audit committee characteristics and restatements. *Auditing: A journal of practice & theory*, 23(1), 69-87.
- Abdul Rahman, R., & Salim, M. (2010). Corporate governance in Malaysia. *Petaling Jaya, Selangor, Malaysia: Sweet & Maxwell Asia*.
- Abdullah, S. N. (2006). Board structure and ownership in Malaysia: The case of distressed listed companies. *Corporate Governance: The international journal of business in society*.
- Abdullahi, M. (2020). Moderating effect of audit quality on corporate attributes and financial performance of listed manufacturing firms in Nigeria.
- Abernathy, J. L., Beyer, B., Masli, A., & Stefaniak, C. (2014). The association between characteristics of audit committee accounting experts, audit committee chairs, and financial reporting timeliness. *Advances in Accounting*, 30(2), 283-297.
- Abu Amuna, Y. M., & Abu Mouamer, F. (2020). Impact of Applying Fraud Detection and Prevention Instruments in Reducing Occupational Fraud: Case study: Ministry of Health (MOH) in Gaza Strip. *International Journal of Advanced Studies of Scientific Research*, 4(6).
- Achyarsyah, P. (2014). Audit firm tenure, audit firm size and audit quality. *Global Journal of Business and Social Science Review*, 2(4), 69-76.
- Adams, R. B., Hermalin, B. E., & Weisbach, M. S. (2010). The role of boards of directors in corporate governance: A conceptual framework and survey. *Journal of economic literature*, 48(1), 58-107.
- Agrawal, A., & Chadha, S. (2005). Corporate governance and accounting scandals. *The journal of law and Economics*, 48(2), 371-406.
- Ahmed, A., Higgs, H., Ng, C., & Delaney, D. A. (2018). Determinants of women representation on corporate boards: evidence from Australia. *Accounting Research Journal*, 31(3), 326-342.
- Ahmed, I., Habib, A., & Mohammed, H. (2021). Moderating Effect of Audit Quality on the Relationship Between Board Characteristics and Audit Report Lag of Listed Non-Financial Companies in Nigeria.
- Aifuwa, H. O., & Embele, K. (2019). Board Characteristics and Financial Reporting. *Journal of Accounting and Financial Management*, 5(1), 30-44.
- Akeju, J., & Babatunde, A. (2017). Corporate governance and financial reporting quality in Nigeria. *International Journal of Information Research and Review*, 4(2), 3749-3753.
- Akpan, E. O., & Amran, N. A. (2014). Board characteristics and company performance: Evidence from Nigeria. *Journal of Finance and Accounting*, 2(3), 81-89.

- Al Ani, M. K., & Mohammed, Z. O. (2015). Auditor quality and firm performance: Omani experience. *European Journal of Economics, Finance and Administrative Sciences*, 74, 13-23.
- Al-ahdal, W. M., & Hashim, H. A. (2021). Impact of audit committee characteristics and external audit quality on firm performance: evidence from India. *Corporate Governance: International Journal of Business in Society*, 22(2), 424-445.
- Albrecht, C., Holland, D., Malagueño, R., Dolan, S., & Tzafrir, S. (2015). The role of power in financial statement fraud schemes. *Journal of Business Ethics*, 131(4), 803-813.
- Ali, C. B. (2020). Agency theory and fraud. In *Corporate Fraud Exposed*. Emerald Publishing Limited.
- Al-Najjar, B. (2011). The determinants of audit committee independence and activity: evidence from the UK. *International Journal of Auditing*, 15(2), 191-203.
- AL-Qatamin, K. I., & Salleh, Z. (2020). Audit quality: a literature overview and research synthesis. *J. Bus. Manag*, 22, 56-66.
- Al-Thuneibat, A. A., Al Issa, R. T. I., & Baker, R. A. A. (2011). Do audit tenure and firm size contribute to audit quality? Empirical evidence from Jordan. *Managerial Auditing Journal*.
- Alves, S. (2013). The impact of audit committee existence and external audit on earnings management: Evidence from Portugal. *Journal of financial reporting & accounting*.
- Amran, N. A., Ku Ismail, K. N. I., Aripin, N., Hassan, N., Abdul Manaf, K. B., & Abdullah, S. N. (2014). Women directors involvement in Malaysia.
- Anderson, R. C., Mansi, S. A., & Reeb, D. M. (2004). Board characteristics, accounting report integrity, and the cost of debt. *Journal of accounting and economics*, 37(3), 315-342.
- Anichebe, A. (2019). Determinants of financial statement fraud likelihood in listed firms. *Journal of Accounting and Financial Management ISSN*, 5(2), 2019.
- Aramvash, A., Chadegani, A. R., & Lotfi, S. (2017). Evaluation of apoptosis in multipotent hematopoietic cells of bone marrow by anthracycline antibiotics. *Iranian journal of pharmaceutical research: IJPR*, 16(3), 1204.
- Aris, N. A., Othman, R., Arif, S. M. M., Malek, M. A. A., & Omar, N. (2013). Fraud detection: Benford's law vs Beneish model. *IEEE Symposium on Humanities, Science and Engineering Research*,
- Arjan, R. (2016). *Financial Fraud: A Literature Review*.
- Aronmwan, E., Ashafoke, T., & Mgbame, C. (2013). Audit firm reputation and audit quality. *Aronmwan, EJ, Ashafoke, TO, & Mgbame, CO (2013). Audit firm reputation and audit quality. European Journal of Business and Management*, 5(7), 66-75.

- Basu, S. (1997). The conservatism principle and the asymmetric timeliness of earnings¹. *Journal of accounting and economics*, 24(1), 3-37.
- Beasley, M. S. (1996). An empirical analysis of the relation between the board of director composition and financial statement fraud. *Accounting review*, 443-465.
- Bedard, J. C., & Johnstone, K. M. (2004). Earnings manipulation risk, corporate governance risk, and auditors' planning and pricing decisions. *The accounting review*, 79(2), 277-304.
- Béguin, C., & Hulliger, B. (2004). Multivariate outlier detection in incomplete survey data: the epidemic algorithm and transformed rank correlations. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 167(2), 275-294.
- Belitski, M., & Desai, S. (2019). Female ownership, firm age and firm growth: a study of South Asian firms. *Asia Pacific Journal of Management*, 1-31.
- Beneish, M. D., Lee, C., & Nichols, D. C. (2012). Fraud detection and expected returns. *Available at SSRN 1998387*.
- Bhavani, G., & Amponsah, C. T. (2017). M-Score and Z-Score for detection of accounting fraud. *Accountancy Business and the Public Interest*, 1(1), 68-86.
- Bierstaker, J. L., Brody, R. G., & Pacini, C. (2006). Accountants' perceptions regarding fraud detection and prevention methods. *Managerial Auditing Journal*.
- Bilic, I., & Sustic, I. (2011). Influence of ethics education on management and entrepreneurship students attitude toward ethical behavior: Case of Croatia. *The Business Review, Cambridge*, 17(2), 197-204.
- Bilimoria, D., & Piderit, S. K. (1994). Board committee membership: Effects of sex-based bias. *Academy of management journal*, 37(6), 1453-1477.
- Bishop, C. C., DeZoort, F. T., & Hermanson, D. R. (2017). Review of recent literature on pressure on CFOs to manipulate financial reports. *Journal of Forensic and Investigative Accounting*, 9(1), 577.
- Bogale, A. (2016). *Determinants of external audit quality: evidence from manufacturing share companies in Addis Ababa Ethiopia* A Thesis Submitted to the Department of Accounting and Finance, College of ...].
- Bonn, I., Yoshikawa, T., & Phan, P. H. (2004). Effects of board structure on firm performance: A comparison between Japan and Australia. *Asian Business & Management*, 3(1), 105-125.
- Brennan, N. M., & McGrath, M. (2007). Financial statement fraud: Some lessons from US and European case studies. *Australian accounting review*, 17(42), 49-61.
- Brick, I. E., & Chidambaran, N. K. (2010). Board meetings, committee structure, and firm value. *Journal of corporate finance*, 16(4), 533-553.

- Budiyono, I., & Arum, M. S. D. (2020). Determinants in detecting fraud triangle of financial statements on companies registered in Jakarta Islamic Index (JII) period 2012-2018. *Journal of Islamic Accounting and Finance Research*, 2(1).
- Budiyono, I., & Arum, M. S. D. (2020). Determinants in detecting fraud triangle of financial statements on companies registered in Jakarta Islamic Index (JII) period 2012-2018. *Journal of Islamic Accounting and Finance Research*, 2(1).
- Bushman, R. M., Piotroski, J. D., & Smith, A. J. (2004). What determines corporate transparency?. *Journal of accounting research*, 42(2), 207-252.
- Busirin, M. F., Azmi, N. A., & Zakaria, N. B. (2015). How effective is board independence to the monitoring of earnings manipulation? *Procedia Economics and Finance*, 31, 462-469.
- Carlin, T. M., Finch, N., & Tran, D. M. (2015). Audit quality differences among auditors: The Case of Hong Kong. *Journal of Economics and Development*, 17(1), 75-92.
- Carrin, G., Mathauer, I., Xu, K., & Evans, D. B. (2008). Universal coverage of health services: tailoring its implementation. *Bulletin of the World Health Organization*, 86, 857-863.
- Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *Financial review*, 38(1), 33-53.
- Chakrabarti, A., Sood, P., Rudramurthy, S. M., Chen, S., Kaur, H., Capoor, M., . . . Xess, I. (2015). Incidence, characteristics and outcome of ICU-acquired candidemia in India. *Intensive care medicine*, 41(2), 285-295.
- Chen, D. (2014). The non-monotonic effect of board independence on credit ratings. *Journal of Financial Services Research*, 45(2), 145-171.
- Chen, G., Firth, M., Gao, D. N., & Rui, O. M. (2006). Ownership structure, corporate governance, and fraud: Evidence from China. *Journal of corporate finance*, 12(3), 424-448.
- Chouhan, V., Sharma, R. B., Goswami, S., & Ali, S. (2021). Factor affecting audit quality: A study of the companies listed in Bombay Stock Exchange (BSE). *Academy of Accounting and Financial Studies Journal*, 25, 1-9.
- Christian, I., & Imagbe, V. (2021). Board attributes and the likelihood of financial statement fraud in quoted firms in Nigeria. *SAARJ Journal on Banking & Insurance Research*, 10(3), 41-53.
- Coffey, B. S., & Wang, J. (1998). Board diversity and managerial control as predictors of corporate social performance. *Journal of Business Ethics*, 17(14), 1595-1603.
- Cong, W., Xie, F., & Zhu, M. (2015). Industry expertise of independent directors and board monitoring. *Journal of Financial and Quantitative Analysis*, 50(5), 929-962.
- Dalnial, H., Kamaluddin, A., Sanusi, Z. M., & Khairuddin, K. S. (2014). Accountability in financial reporting: detecting fraudulent firms. *Procedia-Social and Behavioral Sciences*, 145, 61-69.

- Dalton, D. R., Daily, C. M., Ellstrand, A. E., & Johnson, J. L. (1998). Meta-analytic reviews of board composition, leadership structure, and financial performance. *Strategic management journal*, 19(3), 269-290.
- Dang, L. (2004). *Assessing actual audit quality*. Drexel University.
- Das, S., Gong, J. J., & Li, S. (2020). The effects of accounting expertise of board committees on the short-and long-term consequences of financial restatements. *Journal of Accounting, Auditing & Finance*, 0148558X20934943.
- DeAngelo, L. E. (1981). Auditor size and audit quality. *Journal of accounting and economics*, 3(3), 183-199.
- Dechow, P. M., Ge, W., Larson, C. R., & Sloan, R. G. (2011). Predicting material accounting misstatements. *Contemporary accounting research*, 28(1), 17-82.
- Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1996). Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC. *Contemporary accounting research*, 13(1), 1-36.
- DeFond, M. L., & Francis, J. R. (2005). Audit research after sarbanes-oxley. *Auditing: A journal of practice & theory*, 24(s-1), 5-30.
- DeFond, M. L., Hann, R. N., & Hu, X. (2005). Does the market value financial expertise on audit committees of boards of directors? *Journal of Accounting research*, 43(2), 153-193.
- DeFond, M., & Zhang, J. (2014). A review of archival auditing research. *Journal of accounting and economics*, 58(2-3), 275-326.
- Deng, M., Lu, T., Simunic, D. A., & Ye, M. (2014). Do joint audits improve or impair audit quality? *Journal of Accounting research*, 52(5), 1029-1060.
- DeZoort, F. T., Hermanson, D. R., Archambeault, D. S., & Reed, S. A. (2002). Audit committee effectiveness: A synthesis of the empirical audit committee literature. *Audit Committee Effectiveness: A Synthesis of the Empirical Audit Committee Literature*, 21, 38.
- Dhir, A. A. (2015). *Challenging boardroom homogeneity: Corporate law, governance, and diversity*. Cambridge University Press.
- Ding, D. K., & Charoenwong, C. (2004). Women on board: is it boon or bane?
- Duréndez, A., & Madrid-Guijarro, A. (2018). The impact of family influence on financial reporting quality in small and medium family firms. *Journal of Family Business Strategy*, 9(3), 205-218.
- Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of management review*, 14(1), 57-74.
- El-Chaarani, H. (2017). The mutual impacts of corporate governance dimensions and legal protection systems on the performance of European banks: A post-crisis study. *El-Chaarani, H.(2017). The mutual impacts of corporate governance dimensions and legal protection systems on the performance of European banks: a post-crisis study. European Research Studies Journal*, 20, 538-567.

- Elghuweel, M. I., Ntim, C. G., Opong, K. K., & Avison, L. (2017). Corporate governance, Islamic governance and earnings management in Oman: A new empirical insights from a behavioural theoretical framework. *Journal of Accounting in Emerging Economies*.
- Eneh, O. (2018). Board Attributes and Financial Fraud Likelihood In Nigeria. *IDOSR Journal of Humanities and Social Sciences*, 3(2), 89-99.
- Enekwe, C., Nwoha, C., & Udeh, S. N. (2020). Effect of Audit Quality on Financial Performance of Listed Manufacturing Firms in Nigeria (2006-2016). *Advance Journal of Management, Accounting and Finance*, 5(1), 1-12.
- Eragbhe, E., & Omoye, A. (2014). SME characteristics and value added tax compliance costs in Nigeria. *Mediterranean Journal of Social Sciences*, 5(20), 614.
- Erhardt, N. L., Werbel, J. D., & Shrader, C. B. (2003). Board of director diversity and firm financial performance. *Corporate Governance: An International Review*, 11(2), 102-111.
- Fama, E. F., & French, K. R. (2002). The equity premium. *The Journal of Finance*, 57(2), 637-659.
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The journal of law and Economics*, 26(2), 301-325.
- Farrell, K. A., & Hersch, P. L. (2005). Additions to corporate boards: The effect of gender. *Journal of corporate Finance*, 11(1-2), 85-106.
- Field, A. (2009). *Discovering statistics using SPSS*. Sage publications.
- Fields, M. A., & Keys, P. Y. (2003). The emergence of corporate governance from Wall St. to Main St.: Outside directors, board diversity, earnings management, and managerial incentives to bear risk. *Financial review*, 38(1), 1-24.
- Finkelstein, S., & Hambrick, D. C. (1990). Top-management-team tenure and organizational outcomes: The moderating role of managerial discretion. *Administrative science quarterly*, 484-503.
- Firth, M., Rui, O. M., & Wu, X. (2012). How do various forms of auditor rotation affect audit quality? Evidence from China. *The International Journal of Accounting*, 47(1), 109-138.
- Friday, I. O. (2014). Corporate governance and financial reporting quality in selected Nigerian company. *International Journal of management science and business administration*, 2(3), 7-16.
- Fuzi, S. F. S., Halim, S. A. A., & Julizaerma, M. (2016). Board independence and firm performance. *Procedia Economics and Finance*, 37, 460-465.
- Gemma, L., & Masulis, R. W. (2011). Do more reputable financial institutions reduce earnings management by IPO issuers? *Journal of corporate Finance*, 17(4), 982-1000.

- Ghafoor, A., Zainudin, R., & Mahdzan, N. S. (2019). Factors eliciting corporate fraud in emerging markets: case of firms subject to enforcement actions in Malaysia. *Journal of Business Ethics*, 160(2), 587-608.
- Girau, E., Bujang, I., Paulus Jidwin, A., & Said, J. (2022). Corporate governance challenges and opportunities in mitigating corporate fraud in Malaysia. *Journal of Financial Crime*, 29(2), 620-638.
- Githaiga, P. N., & Kosgei, J. K. (2022). Board characteristics and sustainability reporting. A case of listed firms in East Africa. *Corporate Governance: The International Journal of Business in Society*, (ahead-of-print).
- Githaiga, P. N., Muturi Kabete, P., & Caroline Bonareri, T. (2022). Board characteristics and earnings management. Does firm size matter?. *Cogent Business & Management*, 9(1), 2088573.
- Goodwin-Stewart, J., & Kent, P. (2006). Relation between external audit fees, audit committee characteristics and internal audit. *Accounting & Finance*, 46(3), 387-404.
- Green, B. F., & Tukey, J. W. (1960). Complex analyses of variance: general problems. *Psychometrika*, 25(2), 127-152.
- Gujarati, D. (2007). *Basic Econometrics*. India: Tata McGraw-Hill Edition.
- Gulzar, M. A. (2011). Corporate governance characteristics and earnings management: Empirical evidence from Chinese listed firms. *International Journal of Accounting and Financial Reporting*, 1(1), 133.
- Guner, A., Malmendier, U., & Tate, G. (2008). forthcoming. Financial expertise of directors. *Journal of financial economics*.
- Gupta, R., & Gill, N. S. (2012). Prevention and detection of financial statement fraud—An implementation of data mining framework. *Editorial Preface*, 3(8), 150-160.
- Hadi, A. S., Imon, A. R., & Werner, M. (2009). Detection of outliers. *Wiley Interdisciplinary Reviews: Computational Statistics*, 1(1), 57-70.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. (2006). *Multivariate data analysis*. Uppersaddle River. In: NJ: Pearson Prentice Hall.
- Hambrick, D. C., Cho, T. S., & Chen, M.-J. (1996). The influence of top management team heterogeneity on firms' competitive moves. *Administrative science quarterly*, 659-684.
- Hashim, H. A. (2012). The influence of culture on financial reporting quality in Malaysia. *Asian Social Science*, 8(13), 192.
- Hasnan, S., & Hussain, A. R. M. (2015). Factors associated with financial restatements: Evidence from Malaysia. *Jurnal Pengurusan (UKM Journal of Management)*, 44.
- Henry, C. (2002). *Testing for normality*. Marcel Dekker.

- Ho, S. S., & Wong, K. S. (2001). A study of the relationship between corporate governance structures and the extent of voluntary disclosure. *Journal of International Accounting, Auditing and Taxation*, 10(2), 139-156.
- Hogan, C. E., Rezaee, Z., Riley Jr, R. A., & Velury, U. K. (2008). Financial statement fraud: Insights from the academic literature. *Auditing: A journal of practice & theory*, 27(2), 231-252.
- Hoitash, U., Hoitash, R., & Bedard, J. C. (2009). Corporate governance and internal control over financial reporting: A comparison of regulatory regimes. *The accounting review*, 84(3), 839-867.
- Hu, L. (2011). *Does corporate governance matter, evidence from earnings management practices in Singapore* (Doctoral dissertation, Singapore Management University (Singapore)).
- Hundal, S. (2013). Independence, expertise and experience of audit committees: Some aspects of Indian corporate sector. *American International Journal of Social Science*, 2(5).
- Ilaboya, O. (2017). Board independence and financial statement fraud.
- Institute of Internal Auditors. (2017). International Professional Practices Framework (IPPF). *The Institute of Internal Auditors*.
- Irwandi, S. A., Ghozali, I., & Pamungkas, I. D. (2019). Detection fraudulent financial statement: Beneish M-score model. *WSEAS Transactions on Business and Economics*, 16, 271-81.
- Jarque, C. M., & Bera, A. K. (1987). A test for normality of observations and regression residuals. *International Statistical Review/Revue Internationale de Statistique*, 163-172.
- Jenfa, B. (2000). Elements of professionalism and practice of accountancy. *Jos: Ehindero Nigeria Limited*.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, 3(4), 305-360.
- Johl, S. K., Kaur, S., & Cooper, B. J. (2015). Board characteristics and firm performance: Evidence from Malaysian public listed firms. *Journal of Economics, Business and Management*, 3(2), 239-243.
- Jones, K., Krishnan, G., & Melendrez, K. (2007). Do Models of Discretionary Accruals Detect Actual Cases of Fraudulent and Restated Earnings? *Contemporary accounting research*.
- Joseph, O. N., Albert, O., & Byaruhanga, J. (2015). Effect of internal control on fraud detection and prevention in district treasuries of Kakamega County. *International Journal of Business and management invention*, 4(1), 47-57.
- Jubilee, R. V. W., Khong, R. W., & Hung, W. T. (2018). Would diversified corporate boards add value? The case of banking institutions in Malaysia. *Asia-Pacific Journal of Business Administration*.

- Kamarudin, K. A., Ismail, W. A. W., & Kamaruzzaman, A. A. (2018). Board members diversity and financial statements fraud: malaysian evidence. In *State-of-the-Art Theories and Empirical Evidence* (pp. 165-183). Springer.
- Kantudu, A. S., & Samaila, I. A. (2015). Board Characteristics, Independent Audit Committee and Financial Reporting Quality of Oil Marketing Firms: Evidence from Nigeria. *Journal of Finance, Accounting & Management*, 6(2).
- Karikari Appiah, M., Tettevi, P. K., Amaning, N., Opoku Ware, E., & Kwarteng, C. (2022). Modeling the implications of internal audit effectiveness on value for money and sustainable procurement performance: An application of structural equation modeling. *Cogent Business & Management*, 9(1), 2102127.
- Kariuki, G. (2009). *Institutional investors' perceptions on quality of financial reporting in Kenya* University of Nairobi].
- Kassa, E. T. (2021). Factors influencing taxpayers to engage in tax evasion: evidence from Woldia City administration micro, small, and large enterprise taxpayers. *Journal of Innovation and Entrepreneurship*, 10(1), 1-16.
- Kassinis, G., & Vafeas, N. (2002). Corporate boards and outside stakeholders as determinants of environmental litigation. *Strategic management journal*, 23(5), 399-415.
- Kemebradikemor Embele, H. O. A. (2019). Board Characteristics and Financial Reporting Quality. *Journal of Accounting and Financial Management ISSN*, 5(1), 2019.
- Kılıç, M., & Kuzey, C. (2016). The effect of board gender diversity on firm performance: evidence from Turkey. *Gender in Management: An International Journal*.
- Kinney Jr, W. R., & McDaniel, L. S. (1989). Characteristics of firms correcting previously reported quarterly earnings. *Journal of accounting and economics*, 11(1), 71-93.
- Klein, A. (2002). Audit committee, board of director characteristics, and earnings management. *Journal of accounting and economics*, 33(3), 375-400.
- Knechel, W. R. (2009). *Audit lessons from the economic crisis: Rethinking audit quality*. Maastricht, The Netherlands: Maastricht University.
- Korir, F. J. (2020). Board structure, chief executive officer narcissism and real earnings management among companies listed in Nairobi Securities Exchange, Kenya Moi University].
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.
- Kusnadi, Y., Leong, K. S., Suwardy, T., & Wang, J. (2016). Audit committees and financial reporting quality in Singapore. *Journal of business ethics*, 139(1), 197-214.
- Kusumastati, W. W. (2021). Does Commissioner/Director Board Members Diversity Matter? *Academy of Accounting and Financial Studies Journal*, 25, 1-10.

- Kweki, I. I. (2019). Board Composition And Financial Statements Fraud.
- Lee, S., Upneja, A., Özdemir, Ö., & Sun, K.-A. (2014). A synergy effect of internationalization and firm size on performance: US hotel industry. *International Journal of Contemporary Hospitality Management*.
- Levin, R. I. (2011). *Statistics for management*. Pearson Education India.
- Liao, L., Chen, G., & Zheng, D. (2019). Corporate social responsibility and financial fraud: Evidence from China. *Accounting & Finance*, 59(5), 3133-3169.
- Lipton, M., & Lorsch, J. W. (1992). A modest proposal for improved corporate governance. *The business lawyer*, 59-77.
- Lisic, L. L., Silveri, S. D., Song, Y., & Wang, K. (2015). Accounting fraud, auditing, and the role of government sanctions in China. *Journal of Business Research*, 68(6), 1186-1195.
- Liu, Y., Miletkov, M. K., Wei, Z., & Yang, T. (2015). Board independence and firm performance in China. *Journal of corporate Finance*, 30, 223-244.
- Lokanan, M. E. (2014). How senior managers perpetuate accounting fraud? Lessons for fraud examiners from an instructional case. *Journal of Financial Crime*.
- Mahama, M. (2015). Detecting corporate fraud and financial distress using the Altman and Beneish models. *International Journal of Economics, Commerce and Management*, 3(1), 1-18.
- Mahdi, O., Qingfei, M., Vahab, M., & Muhammad, P. (2019). The efficacy of predictive methods in financial statement. *Discrete Dynamics in Nature Society*, 1-12.
- Mansor, N., & Abdullahi, R. (2015). Fraud triangle theory and fraud diamond theory. Understanding the convergent and divergent for future research. *International Journal of Academic Research in Accounting, Finance and Management Science*, 1(4), 38-45.
- Martín, C., & Herrero, B. (2018). Boards of directors: composition and effects on the performance of the firm. *Economic Research-Ekonomska Istraživanja*, 31(1), 1015-1041.
- Marzuki, M. M., Wahab, E. A. A., & Haron, H. (2016). Corporate Governance and Earnings Conservatism in Malaysia. *Accounting Research Journal*, 29(4), 391-412.
- Masud, M., Kaium, A., Bae, S. M., Manzanares, J., & Kim, J. D. (2019). Board directors' expertise and corporate corruption disclosure: The moderating role of political connections. *Sustainability*, 11(16), 4491.
- Mathisen, G. E., Ogaard, T., & Marnburg, E. (2013). Women in the boardroom: how do female directors of corporate boards perceive boardroom dynamics?. *Journal of business ethics*, 116(1), 87-97.
- Matoussi, H., & Gharbi, I. (2011). Board independence and corporate fraud: The case of Tunisian firms. *Politics and Economic Development*, 2-24.

- Maulidi, A. (2022). Gender board diversity and corporate fraud: empirical evidence from US companies. *Journal of Financial Crime*.
- Mersni, H., & Othman, H. B. (2016). The impact of corporate governance mechanisms on earnings management in Islamic banks in the Middle East region. *Journal of Islamic Accounting and Business Research*.
- Milliken, F. J., & Martins, L. L. (1996). Searching for common threads: Understanding the multiple effects of diversity in organizational groups. *Academy of management review*, 21(2), 402-433.
- Mishra, R. K., & Jhunjhunwala, S. (2013). *Diversity and the effective corporate board*. Academic Press.
- Mitnick, B. M. (1975). The theory of agency. *Public Choice*, 24(1), 27-42.
- Mitnick, B. M. (2019). Origin of the theory of agency: an account by one of the theory's originators. Available at SSRN 1020378.
- Mohamed, N., & Handley-Schachler, M. (2015). Roots of responsibilities to financial statement fraud control. *Procedia Economics and Finance*, 28, 46-52.
- Monsif Azzoz, A. R. A., & Khamees, B. A. (2016). The Impact of Corporate Governance Characteristics on Earnings Quality and Earnings Management: Evidence from Jordan. *Jordan journal of business administration*, 12(1).
- Moreno-Gómez, J., Lafuente, E., & Vaillant, Y. (2018). Gender diversity in the board, women's leadership and business performance. *Gender in Management: An International Journal*.
- Murdock, H. (2018). Association of Certified Fraud Examiners (ACFE). In *Auditor Essentials* (pp. 7-10). Auerbach Publications.
- Napoleoni, L. (2011). *10 Years that Shook the World: A Timeline of Events from 2001*. Seven Stories Press.
- Nasir, N. A. B. M., Ali, M. J., & Ahmed, K. (2019). Corporate governance, board ethnicity and financial statement fraud: evidence from Malaysia. *Accounting Research Journal*.
- Nawaiseh, M. E. (2016). Impact of external audit quality on earnings management by banking firms: Evidence from Jordan. *British Journal of Applied Science & Technology*, 12(2), 1.
- Nepal, M., & Deb, R. (2022). Board characteristics and firm performance: Indian textiles sector panorama. *Management and Labour Studies*, 47(1), 74-96.
- Ngechu, S. (2017). *Effect of Kenya bureau of standards regulations on organizational performance of steel companies in Kenya* [Unpublished PhD Thesis, Kca University].
- Noor, N. F. M., Sanusia, Z. M., Heang, L. T., Iskandar, T. M., & Isa, Y. M. (2015). Fraud motives and opportunities factors on earnings manipulations. *Procedia Economics and Finance*, 28, 126-135.

- Omoye, A. S., & Eragbhe, E. (2014). Accounting ratios and false financial statements detection: evidence from Nigerian quoted companies. *International Journal of Business and Social Science*, 5(7), 206-215.
- Orazalin, N. (2020). Board gender diversity, corporate governance, and earnings management: Evidence from an emerging market. *Gender in Management: An International Journal*, 37-60.
- Outa, E. R., & Waweru, N. M. (2016). Corporate governance guidelines compliance and firm financial performance: Kenya listed companies. *Managerial Auditing Journal*.
- Özari, Ç., & Ocak, M. (2013). Detection of earnings management by applying benford's law in selected accounts: Evidence from quarterly financial statements of turkish public companies. *European Journal of Economics, Finance and Administrative Sciences*, 59(4), 37-52.
- Ozbas, O. (2008). Corporate fraud and real investment. *Available at SSRN 891450*.
- Ozcelik, H. (2020). An Analysis of Fraudulent Financial Reporting Using the Fraud Diamond Theory Perspective: An Empirical Study on the Manufacturing Sector Companies Listed on the Borsa Istanbul. In *Contemporary Issues in Audit Management and Forensic Accounting*. Emerald Publishing Limited.
- Panda, B., & Leepsa, N. (2017). Agency theory: Review of theory and evidence on problems and perspectives. *Indian Journal of Corporate Governance*, 10(1), 74-95.
- Park, Y. W., & Shin, H.-H. (2004). Board composition and earnings management in Canada. *Journal of corporate Finance*, 10(3), 431-457.
- Pástor, L., & Pietro, V. (2003). Stock valuation and learning about profitability. *The Journal of Finance*, 58(5), 1749-1789.
- Perols, J. L., & Lougee, B. A. (2011). The relation between earnings management and financial statement fraud. *Advances in Accounting*, 27(1), 39-53.
- Persons, O. S. (2005). The Relation Between the New Corporate Governance Rules and the Likelihood of Financial Statement Fraud. *Review of Accounting & Finance*, 4(2), 125.
- Petra, S. T. (2007). The effects of corporate governance on the informativeness of earnings. *Economics of Governance*, 8(2), 129-152.
- Post, C., & Byron, K. (2015). Women on boards and firm financial performance: A meta-analysis. *Academy of management journal*, 58(5), 1546-1571.
- Pucheta-Martínez, M. C., & Gallego-Álvarez, I. (2020). Do board characteristics drive firm performance? An international perspective. *Review of Managerial Science*, 14(6), 1251-1297.
- Pulungan, H., & Sadat, M. S. (2014). Accounting Conservatism Analysis in Indonesia after Adoption of IFRS and Relation to the Characteristics of the Board As One of the Mechanism of Corporate Governance (Empirical Study on Manufacturing Companies Listed on the Stock Exchange). *Available at SSRN 2949709*.

- Purwiyanti, D., & Laksito, H. (2022). The Effect of Audit Committee Effectiveness and Potential Fraudulent Financial Statements. *Jurnal AKSI (Akuntansi dan Sistem Informasi)*, 7(1).
- Puspaningsih, A., & Syarifa, A. D. (2021). The Effects of Audit Committee, Audit Tenure, Public Accounting Firm Reputation, and Audit Fee on Audit Quality. *Review of Integrative Business and Economics Research*, 10, 278-289.
- Qadorah, A. A. M., & Fadzil, F. H. B. (2018). The effect of board independence and board meeting on firm performance: evidence from Jordan. *Journal of Finance and Accounting*, 6(5), 105.
- Randøy, T., & Jenssen, J. I. (2004). Board independence and product market competition in Swedish firms. *Corporate governance: an international review*, 12(3), 281-289.
- Rashidah, R., & Ali, F. H. M. (2006). Board, audit committee, culture and earnings management: Malaysian evidence. *Managerial Auditing Journal*.
- Ren, L., Zhong, X., & Wan, L. (2021). Missing analyst forecasts and corporate fraud: Evidence from China. *Journal of Business Ethics*, 1-24.
- Rezaee, Z., & Kedia, B. L. (2012). Role of corporate governance participants in preventing and participants in preventing and detecting financial statement fraud. *Journal of Forensic & Investigative Accounting*, 4(2), 176-205.
- Rjiba, H., & Thavaharan, T. (2022). Female Representation on Boards and Carbon Emissions: International Evidence. *Finance Research Letters*, 103079.
- Robinson, G., & Dechant, K. (1997). Building a business case for diversity. *Academy of Management Perspectives*, 11(3), 21-31.
- Rodríguez-Ariza, L., Garcia-Sanchez, I.-M., & Frias-Aceituno, J.-V. (2012). The role of the board in achieving integrated financial and sustainability reporting. XV *Encuentro AECA. Esposende*.
- Saghafi, M., Faghani, M., Nonahal Nahr, A., & Bashirimanesh, N. (2022). Audit Fees, Detection of Accounting Misstatements and Financial Reporting Quality: Examining the Audit Fee Pressure Theory and Agency Theory. *International Journal of Finance & Managerial Accounting*, 7(25), 125-140.
- Saidin, S. Z. (2011). *The relationship between internal and external auditors of local authorities in England and Malaysia* (Doctoral dissertation, University of Sheffield).
- Saleh, M. W., Latif, R. A., Bakar, F. A., & Maigoshi, Z. S. (2020). The impact of multiple directorships, board characteristics, and ownership on the performance of Palestinian listed companies. *International Journal of Accounting, Auditing and Performance Evaluation*, 16(1), 63-80.
- Salleh, K., Hamid, N. A., Harun, N., Bidin, A., & Ghadas, Z. A. (2017). The Independent Directors in Malaysia: The Analysis of the Legal Requirement for Conventional and Shariah Business Companies. *World Applied Sciences Journal*, 35(9), 1737-1741.

- Salleh, S. M., & Othman, R. (2016). Board of director's attributes as deterrence to corporate fraud. *Procedia Economics and Finance*, 35, 82-91.
- Saona, P., Muro, L., & San Martín, P. (2018). Board of director gender diversity and its impact on earnings management: an empirical analysis for selected European firms. 31st Australasian Finance and Banking Conference,
- Schneider, A., Gramling, A. A., Hermanson, D. R., & Ye, Z. S. (2009). A review of academic literature on internal control reporting under SOX. *Journal of Accounting Literature*, 28, 1.
- Schuchter, A., & Levi, M. (2016). The fraud triangle revisited. *Security Journal*, 29(2), 107-121.
- Seifzadeh, M., Rajaei, R., & Allahbakhsh, A. (2021). The relationship between management entrenchment and financial statement fraud. *Journal of Facilities Management*, 20(1), 102-119.
- Sekaran, U., & Bougie, R. (2019). *Research methods for business: A skill building approach*. John Wiley & Sons.
- Sekkat, K., Szafarz, A., & Tojerow, I. (2015). Women at the top in developing countries: Evidence from firm-level data.
- Şener, İ., & Karaye, A. B. (2014). Board composition and gender diversity: comparison of Turkish and Nigerian listed companies. *Procedia-Social and Behavioral Sciences*, 150, 1002-1011.
- Sharma, V. D., & Kuang, C. (2014). Voluntary Audit Committee Characteristics, Incentives, and Aggressive Earnings Management: Evidence from New Zealand. *International Journal of Auditing*, 18(1), 76-89.
- Shitandi, A. O. (2020). *An examination of the drivers of external audit quality of Commercial Banks in Kenya* [Strathmore University].
- Shubita, M. F. (2021). The Impact of Audit Quality on Tobin's Q: Evidence from Jordan. *The Journal of Asian Finance, Economics and Business*, 8(7), 517-523.
- Shuraki, M. G., Pourheidari, O., & Azizkhani, M. (2020). Accounting comparability, financial reporting quality and audit opinions: evidence from Iran. *Asian Review of Accounting*, 29(1), 42-60.
- Siladi, B. (2006). *The role of non-executive directors in corporate governance: An evaluation*. Faculty of Business and Enterprise, Swinburne University of Technology.
- Singh, V., & Vinnicombe, S. (2004). Why so few women directors in top UK boardrooms? Evidence and theoretical explanations. *Corporate governance: an international review*, 12(4), 479-488.
- Singhvi, M., Munsif, V., & Singhvi, A. (2020). Characteristics Of Directors Serving On Multiple Audit Committees. *Pan-Pacific Journal of Business Research*, 11(2), 69-82.

- Stein, G., & Plaza, S. (2011). The role of the independent director in CEO supervision and turnover.
- Subair, M. L., Salman, R. T., Abolarin, A. F., Abdullahi, A. T., & Othman, A. S. (2020). Board characteristics and the likelihood of financial statement fraud. *Copernican Journal of Finance & Accounting*, 9(1), 57-76.
- Sulaiman, N. A. (2017). Oversight of audit quality in the UK: insights into audit committee conduct. *Meditari Accountancy Research*.
- Taktak, N. B., & Mbarki, I. (2014). Board characteristics, external auditing quality and earnings management: Evidence from the Tunisian banks. *Journal of Accounting in Emerging Economies*, 4(1), 79-96.
- Tangod, K., & Kulkarni, G. (2015). Detection of financial statement fraud using data mining technique and performance analysis. *International Journal of Advanced Research in Computer and Communication Engineering*, 4(7), 549-555.
- Tarus, D. K., & Aime, F. (2014). Board demographic diversity, firm performance and strategic change: A test of moderation. *Management Research Review*.
- Thiruvadi, S., & Huang, H. W. (2011). Audit committee gender differences and earnings management. *Gender in Management: An International Journal*.
- Tran, M. D., Khairi, K. F., & Laili, N. H. (2019). A longitudinal study of audit quality differences among independent auditors. *Journal of Economics and Development*.
- Uzun, H., Szewczyk, S. H., & Varma, R. (2004). Board composition and corporate fraud. *Financial Analysts Journal*, 60(3), 33-43.
- Vafeas, N. (1999). Board meeting frequency and firm performance. *Journal of financial economics*, 53(1), 113-142.
- Vafeas, N. (2005). Audit committees, boards, and the quality of reported earnings. *Contemporary accounting research*, 22(4), 1093-1122.
- Van der Walt, N., & Ingle, C. (2003). Board dynamics and the influence of professional background, gender and ethnic diversity of directors. *Corporate governance: An international review*, 11(3), 218-234.
- Van der Walt, N., Ingle, C., Shergill, G., & Townsend, A. (2006). Board configuration: are diverse boards better boards? *Corporate Governance: The international journal of business in society*.
- Vartanian, T. P. (2010). *Secondary data analysis*. Oxford University Press.
- Wahid, A. S. (2019). The effects and the mechanisms of board gender diversity: Evidence from financial manipulation. *Journal of Business Ethics*, 159(3), 705-725.
- Wang, T., & Hsu, C. (2013). Board composition and operational risk events of financial institutions. *Journal of Banking & Finance*, 37(6), 2042-2051.
- Wang, Y., Yu, M., & Gao, S. (2022). Gender diversity and financial statement fraud. *Journal of Accounting and Public Policy*, 41(2), 106903.

- Waswa, C. W., Mukras, M. S., & Oima, D. (2018). Effect of liquidity on financial performance of the Sugar Industry in Kenya.
- Widyasari, P. A., & Ayunda, N. (2020). CSR Reporting: Perspective of Female Audit Committee Having Financial Expertise.
- Xiang, R., & Zhu, W. (2020). Academic independent directors and corporate fraud: evidence from China. *Asia-Pacific Journal of Accounting & Economics*, 1-19.
- Yang, D., & Buckland, R. (2010). Fraudulent financial reporting in China: Consideration of timing traits and corporate governance mechanisms. China Journal of Accounting Research 2010 Conference. Guangzhou, China: Sun Yat-sen University,
- Yego, J. K. (2016). *The Impact of Fraud in the Banking Industry: A Case of Standard Chartered Bank United States International University-Africa*].
- Zainal, D., Zulkifli, N., & Saleh, Z. (2013). Corporate board diversity in Malaysia: A longitudinal analysis of gender and nationality diversity. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 3(1), 136-148.
- Zhang, Y., Zhou, J., & Zhou, N. (2007). Audit committee quality, auditor independence, and internal control weaknesses. *Journal of accounting and public policy*, 26(3), 300-327.
- Zhou, F., Zhang, Z., Yang, J., Su, Y., & An, Y. (2018). Delisting pressure, executive compensation, and corporate fraud: Evidence from China. *Pacific-Basin Finance Journal*, 48, 17-34.
- Zikmund, W. G., Carr, J. C., & Griffin, M. (2013). *Business Research Methods (Book Only)*. Cengage Learning.

Appendix II: Manufacturing Firms Listed in East Africa

SNO.	COMPANY NAME
1.	BAT
2.	BAT UG
3.	BOC Kenya
4.	Braliwa
5.	Carbacid
6.	East Africa Breweries Kenya
7.	East Africa Breweries Tanzania
8.	East Africa Breweries UG
9.	Eveready
10.	Flame Tree Group
11.	Kenya Orchards
12.	Tanzania Breweries
13.	Tanzania Cigarette
14.	Tatepa
15.	Unga Limited

Appendix III: Probit Regression Results

MODEL IV

Probit regression		Number of obs =		225		
		LR chi2(9) =		231.91		
		Pseudo R2 =		0.7654		
Log	likelihood = -35.535491	Pseudo	R2 =	0.7654		
LFSF	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
FA	-2.078023	.6984406	-2.98	0.003	-3.446942	-.7091046
FS	1.677222	.3391245	4.95	0.000	1.01255	2.341894
FP	-2.801065	.8203225	-3.41	0.001	-4.408867	-1.193262
BIN	-2.292451	1.032622	-2.22	0.026	-4.316354	-.2685481
FBM	-11.2805	1.917628	-5.88	0.000	-15.03898	-7.522014
BGD	-2.354802	.8979748	-2.62	0.009	-4.1148	-.5948035
BE	-5.561076	1.72394	-3.23	0.001	-8.939936	-2.182216
AQ	-1.590537	.285369	-5.57	0.000	-2.149851	-1.031224
BIN*AQ	-2.700989	.794488	-3.40	0.001	-4.258157	-1.143822
_cons	11.16633	3.336765	3.35	0.001	4.626395	17.70627


MODEL V

Probit regression		Number of obs =		225		
		LR chi2(10) =		242.88		
		Prob > chi2 =		0.0000		
Log	likelihood = -30.049025	Pseudo	R2 =	0.8016		
LFSF	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
FA	-1.825967	.7596438	-2.40	0.016	-3.314842	-.3370927
FS	1.89772	.403468	4.70	0.000	1.106938	2.688503
FP	-2.609947	.8942828	-2.92	0.004	-4.362709	-.8571853
BIN	-2.958439	1.283024	-2.31	0.021	-5.473119	-.4437581
FBM	-9.672857	2.10479	-4.60	0.000	-13.79817	-5.547543
BGD	-2.038459	.9356133	-2.18	0.029	-3.872228	-.2046909
BE	-5.967923	2.119473	-2.82	0.005	-10.12201	-1.813832
AQ	-1.868815	.3560354	-5.25	0.000	-2.566632	-1.170999
BIN*AQ	-2.488317	.8545055	-2.91	0.004	-4.163117	-.813517
FBM*AQ	-3.538567	1.275713	-2.77	0.006	-6.038919	-1.038215
_cons	9.804747	4.098891	2.39	0.017	1.771068	17.83843

MODEL VI

Probit regression		Number of obs =		225		
		LR chi2(11) =		247.39		
		Prob > chi2 =		0.0000		
Log likelihood = -27.794118		Pseudo R2 =		0.8165		
LFSF	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
FA	-1.4133	.7711817	-1.83	0.067	-2.924789	.098188
FS	2.042666	.4374703	4.67	0.000	1.18524	2.900092
FP	-2.908137	.9332984	-3.12	0.002	-4.737368	-1.078906
BIN	-3.278591	1.316503	-2.49	0.013	-5.858889	-.6982938
FBM	-9.502256	2.155595	-4.41	0.000	-13.72714	-5.277368
BGD	-2.217455	.9937018	-2.23	0.026	-4.165075	-.269835
BE	-4.827031	2.081499	-2.32	0.020	-8.906694	-.7473669
AQ	-1.863609	.3583188	-5.20	0.000	-2.5659	-1.161317
BIN*AQ	-2.140219	.8883087	-2.41	0.016	-3.881272	-.3991656
FBM*AQ	-3.188267	1.312885	-2.43	0.015	-5.761473	-.6150604
BGD*AQ	-1.950455	.9714062	-2.01	0.045	-3.854376	-.0465335
_cons	7.741965	4.086211	1.89	0.058	-.2668626	15.75079

Appendix IV: University Introductory Letter



MOI UNIVERSITY
POSTGRADUATE OFFICE
SCHOOL OF BUSINESS AND ECONOMICS

Tel: 0790940508 0771336914 0736138770 Fax No: (053) 43047 Telex No. MOIVARSITY 35047	P.O. Box 3900 Eldoret, Kenya
--------------------------------------------------------------------------------------------------	------------------------------------

RE: MU/SBE/PGR/ACD/21B **DATE: 4th May, 2022**

TO WHOM IT MAY CONCERN:

RE: LUCAS EKIRU KAITUKO - SBE/PGM/20/17

The above named is a bonafide student of Moi University, School of Business & Economics, undertaking **Masters in Business Administration** degree; specializing in **Auditing & Forensic Accounting**.

He has successfully completed coursework, defended his proposal, and is proceeding to the field to collect data for his research titled: *"Moderating Effect of Audit Quality on the Relationship Between Board Characteristics and the Likelihood of Financial Statement Fraud Among Manufacturing Firms Listed in East Africa"*


Any assistance accorded to him will be highly appreciated.

Yours faithfully,


SCHOOL OF BUSINESS &
 ECONOMICS
 MOI UNIVERSITY
 P. O. Box 3900 ELDORET 30100


DR. RONALD BONUKE
ASSOCIATE DEAN AND CHAIR-POSTGRADUATE STUDIES

/pn


 (ISO 9001:2015 Certified Institution)


Appendix V: NACOSTI Research Permit License


REPUBLIC OF KENYA


**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION**

Ref No: **603360** Date of Issue: **19/May/2022**

RESEARCH LICENSE




This is to Certify that Mr., LUCAS EKIRU KAITUKO of Moi University, has been licensed to conduct research in Turkana on the topic: MODERATING EFFECT OF AUDIT QUALITY ON THE RELATIONSHIP BETWEEN BOARD CHARACTERISTICS AND THE LIKELIHOOD OF FINANCIAL STATEMENT FRAUD AMONG MANUFACTURING FIRMS LISTED IN EAST AFRICA for the period ending : 19/May/2023.

License No: **NACOSTI/P/22/17427**

603360
Applicant Identification Number

Walton
Director General
**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY &
INNOVATION**

Verification QR Code



NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is Guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014

CONDITIONS

1. The License is valid for the proposed research, location and specified period
2. The License any rights thereunder are non-transferable
3. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies
5. The License does not give authority to transfer research materials
6. NACOSTI may monitor and evaluate the licensed research project
7. The Licensee shall submit one hard copy and upload a soft copy of their final report (thesis) within one year of completion of the research
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice

National Commission for Science, Technology and Innovation
off Waiyaki Way, Upper Kabete,
P. O. Box 30623, 00100 Nairobi, KENYA
Land line: 020 4007000, 020 2241349, 020 3310571, 020 8001077
Mobile: 0713 788 787 / 0735 404 245
E-mail: dg@nacosti.go.ke / registry@nacosti.go.ke
Website: www.nacosti.go.ke