

**DURAN UNIVERSITY OF TECHNOLOGY**

**MITIGATING MECHANISM ON OPERATIONAL RISK AND FINANCIAL  
PERFORMANCE: EVIDENCE FROM THE GHANAIAN BANKING SECTOR**

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# **MITIGATING MECHANISM ON OPERATIONAL RISK AND FINANCIAL PERFORMANCE: EVIDENCE FROM THE GHANAIAN BANKING SECTOR**

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## DECLARATION

I, Benjamin Siaw Ofori, declare that this thesis is a representation of my own work in conception and execution. This work has not been submitted in any form for another degree at any university or institution of higher learning. All information cited from published or unpublished works has been acknowledged.

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## **ABSTRACT**

This study examined the effects of corporate governance on operational risk and financial performance of listed and non-listed universal deposit banks in Ghana for the period of 2010 to 2022. The study used a descriptive research design. Data were collected from the published annual financial reports of studies listed and non-listed universal banks in Ghana. The population of the study comprised the twenty- three (23) listed and non-listed universal banks. The sample population of fourteen (14) listed and non-listed universal banks in Ghana was arrived at using the inclusive and exclusive criteria. Agency and information asymmetry theories were used to underpin the study. The data were analyzed with the aid of the random and fixed effect panel regression model, the result of the random and fixed effect regression showed that board meetings and independent directors on the board have a negative significant effect on the operational risk. Board size and financial experts on the board have no significant effect on operational risk. On the financial performance of the banks, the results indicate board meetings have a statistically significant positive effect on both ROA and ROE. Board size rather significantly affects ROE and not ROA. However, independent directors and financial experts on the board have no significant effect on ROA and ROE. When firm size was used as the moderating factor between the link of corporate governance and operational risk, the results indicated firm size combined with independent directors increased operational risk while firm size combined with board size and financial experts had no significant effect on operational risk. Firm size in the link between corporate governance and financial performance of the universal banks shows firm size combined with independent directors is positively significant to financial performance (ROA and ROE), and not firm size combined with board size and financial experts on the board. Based on the findings, the study recommended that since independent directors have a negative influence on operational risk, banks should prioritize the selection of independent directors to their boards. In addition, the study suggests that recognizing that board meetings have a statistically significant beneficial influence on both ROA and ROE, banks should create a culture of active and regular board meetings. While board size and financial knowledge did not affect operational risk, banks should prioritize board member quality and competency above board enlargement or the recruitment of financial specialists. Finally, the study recommends that banks should customize their governance practices to their unique size and complexity, taking into account the

conditional influence of firm size on the link between independent directors and financial performance.

**Keywords:** Mitigation mechanism, operational risk, financial performance, Ghanaian banking sector, firm size.

# TABLE OF CONTENTS

<b>DECLARATION</b> .....	<b>ii</b>
<b>ACKNOWLEDGEMENT</b> .....	<b>iii</b>
<b>ABSTRACT</b> .....	<b>iv</b>
<b>TABLE OF CONTENTS</b> .....	<b>vi</b>
<b>LIST OF TABLES / FIGURE</b> .....	<b>xi</b>
<b>ACRONYMS</b> .....	<b>xii</b>
<b>CHAPTER ONE</b> .....	<b>1</b>
1.1 Introduction.....	1
1.2 Background .....	2
1.3 Contribution of this study.....	3
1.4 Problem Statement.....	3
1.5 Research aim, objectives and hypothesis.....	4
1.6 Significance of the research.....	5
1.7 Scope of the study.....	6
1.8 Organization of the study .....	6
<b>CHAPTER TWO</b> .....	<b>8</b>
2.1 INTRODUCTION.....	8
2.2 Mitigating Mechanism and Operational Risk in the Banking Sector.....	9
2.2.1 Mitigating Mechanism.....	9
2.2.2 Codes of Corporate Governance .....	10
2.2.3 Models of Corporate Governance.....	15
2.2.4 Dimensions of Corporate Governance.....	21
2.2.5 Components of Corporate Governance.....	23
2.2.6 Principles of Corporate Governance .....	26

2.3 Operational Risk.....	31
2.3.1 Types of Operational Risk in the Banking Sector .....	32
2.3.2 Management of Operational Risk .....	33
2.4 Banks and the Banking Sector.....	34
2.4.1 Definition of Bank.....	34
2.5 Mitigating Mechanism on Financial Performance in the Banking Sector.....	35
2.5.1 The Concept of Financial Performance.....	35
2.6 Empirical Review .....	36
<b>CHAPTER THREE.....</b>	<b>41</b>
3.1 Introduction .....	41
3.2 THEORETICAL FRAMEWORK.....	42
3.2.1 Agency Theory Defined .....	42
3.2.2 Types of Agency Conflict.....	42
3.2.3 Agency Costs .....	44
3.2.4 Why the Agency Theory .....	45
3.2.5 Information Asymmetry Theory .....	46
3.2.6 Types of Information Asymmetry.....	47
3.2.7 Resolution to Asymmetry.....	48
3.3 CORPORATE GOVERNANCE .....	50
3.3.1 CORPORATE GOVERNANCE MECHANISM.....	52
3.4 OPERATIONAL RISK .....	53
3.5 FINANCIAL PERFORMANCE .....	55
3.6 THE RELATIONSHIP BETWEEN THE THEORIES AND CONCEPTS.....	55
<b>CHAPTER FOUR.....</b>	<b>59</b>
4.1 Introduction .....	59
4.2 Research Paradigm.....	59

4.3 Research Design.....	60
4.3.1 Panel Data .....	61
4.4 Research Approach.....	61
4.5 Operationalization of the Variables.....	62
4.6 Population .....	63
4.6.1 Target Population.....	64
4.7 Sample and Sample Size.....	64
4.7.1 Inclusion and Exclusion Criteria .....	64
4.8 Source of Data.....	65
4.9 Data Analysis Methods.....	66
4.10 Model Specification.....	66
4.11 Diagnostic Testing and Robustness Checks.....	68
4.12 Ethical Considerations.....	68
4.13 Summary of Key Points .....	69
<b>CHAPTER FIVE.....</b>	<b>70</b>
5.0 Introduction .....	70
5.1 Preliminary Analysis .....	70
5.1.1 Descriptive Statistics .....	70
5.1.2 Hausman Test.....	72
5.1.3 Multicollinearity.....	72
5.1.4 Durbin-Watson (D-W) statistics .....	73
5.1.5 Heteroskedasticity Test.....	74
5.1.6 Unit Root Test .....	74
5.2 Further Analysis .....	75
5.2.1 Correlation Analysis .....	75
5.2.2 Regression Results .....	77

5.2.2.1 Model Summary .....	77
5.2.2.2 Mitigation Mechanism and Operational Risk .....	77
5.2.2.3 Mitigation Mechanism and Financial Performance.....	78
5.2.2.4 The Moderating Role of Firm Size in the Link between Mitigation Mechanism and Operational Risk .....	78
5.2.2.5 The Moderating Role of Firm Size in the Link between Mitigation Mechanism and Financial Performance .....	78
5.2.3 Control Variables .....	79
5.3 Discussion of Results .....	80
5.3.1 Mitigation Mechanism and Operational Risk .....	80
5.3.2 Mitigation Mechanism and Financial Performance .....	83
5.3.3 The Moderating Role of Firm Size in the Link between Mitigation Mechanism and Operational Risk .....	86
5.3.4 Moderating Role of Firm Size in the Link between Mitigation Mechanism and Financial Performance .....	87
<b>CHAPTER SIX</b> .....	<b>90</b>
6.1 Introduction .....	90
6.2 Summary of Findings.....	90
6.2.1 Mitigation Mechanism and Operational Risk .....	90
6.2.2 Mitigation Mechanism and Financial Performance .....	91
6.2.3 The Moderating Role of Firm Size in the Link between Mitigation Mechanism and Operational risk.....	91
6.2.4 The Moderating Role of Firm Size in the Link between Mitigation Mechanism and Financial Performance .....	91
6.3 Conclusion .....	92
6.4 Implication of the Study.....	93
6.4.1 Theoretical Implication .....	93

6.4.2 Practical Implication .....	94
6,5 Practical and Policy Recommendations .....	95
6.6 Limitations and Future Research Direction .....	96
<b>References .....</b>	<b>97</b>
<b>Appendixes .....</b>	<b>116</b>
APPENDIX A: DATASET .....	116
APPENDIX B: FRC APPROVAL LETTER .....	121

## LIST OF TABLES/FIGURE

Table 4.1 Model Description.....	62
Table 5.1 Descriptive Statistics .....	71
Table 5.2 Hausman (1978) specification test.....	72
Table 5.3 Variance Inflation Factor .....	73
Table 5.4 Heteroskedasticity Test: Breusch-Pagan-Godfrey.....	74
Table 5.5 Unit Root Test.....	75
Table 5.6 Correlation Statistics.....	76
Table 5.7 Random Effect on Regression Result.....	79
Figure 3 Theoretical Framework.....	58

## ACRONYMS

BoG	Bank of Ghana
BCBS	Basel Committee on Banking Supervision
BDM	Board Meetings
BDZ	Board Size
CEO	Chief Executive Officer
CEOs	Chief Executive Officers
CG	Corporate Governance
EC	European Code
FP	Financial Performance
FMZ	Firm Size
FEX	Financial Experts on the Board
IND	Independent Directors on the Board
NPLs	Non-Performing Loans
NYSE	New York Stock Exchange
OECD	Organization for Economic Cooperation and Development
OPR	Operational Risk
ROA	Return on Assets
ROE	Return on Equity

## **CHAPTER ONE: INTRODUCTION**

### **1.1 introduction**

In today's rapidly evolving global financial landscape, corporate governance (CG) has emerged as a pivotal factor in the sustainable growth and stability of financial institutions, particularly banks. Effective corporate governance practices not only ensure responsible management of a bank's resources but also have a profound impact on its operational risk (OPR) and financial performance (FP). In Ghana, as it is in other developed and developing countries, the banking sector performs a crucial role in the economy, facilitating economic growth and development. Therefore, understanding the dynamics among CG, OPR, and FP with firm size serving as a moderating role between CG, OPR and FP in Ghana's banking sector is of paramount importance.

Ghana has experienced significant changes in its banking industry over the past few decades. The sector has witnessed an influx of both local and foreign banks, technological advancements, and regulatory reforms. These developments have presented opportunities and challenges that make it imperative to investigate the role that CG plays in shaping the OPR and FP of banks in the country.

In an era characterized by increasing global financial complexities, the role played by CG in shaping the operational resilience and FP of banks stands as a critical focal point. The importance of sound corporate governance practices has garnered substantial attention, particularly in the context of banking institutions, where the interplay between governance frameworks, operational risk management, and financial stability is crucial.

This study investigates the nexus among CG, OPR, and FP with firm size (FMZ) as a moderating variable within the specific domain of Ghanaian banks. With a growing financial sector and an evolving regulatory landscape, the spotlight on effective governance mechanisms has intensified, necessitating a comprehensive exploration of its impact on operational risk mitigation and financial outcomes.

## **1.2 Background**

The financial sector of every country is important to the effective functioning and development of its economy. The banks serve as the nerve centre of such countries' financial systems. Banks do provide critical services in terms of being the providers of credit and liquidity to the economy (Ministry of Finance – Ghana document released on Tuesday 31 October 2023). If so, then banks need sound and proper governance to identify and manage the risks that can affect their performance and their continuous existence. This is the reason why the BCBS issued a public consultation on revisions to the core principles for effective banking supervision (Bensaz and Olmen, 2023). The last time a major update was carried out was in 2012. This need for current review points to the fact that the principles have not been fully proved in terms of preventing fraud and averting risk which includes operational risk.

Aside from the principles of effective banking supervision, there have also been corporate governance principles or mechanisms that have been put in place to support corporations of which banks are included. The essence of the corporate governance principles is to manage and avert risks. In this wise, there have been many studies like that of Siddiqui (2015) as cited in Ko, Lee and Anandarajan (2019) which examined the association between corporate governance and firm performance and that of Permatasari (2020) which also studied the relationship between CG and risk management.

In 2017, the Bank of Ghana (BoG) reported that Ghana was having a distressed financial sector (The Banking Chapter Report, 2020). As a result, the (BoG) with the power to resolve problems and also being the authority for banks and specialized deposit-taking financial institutions revoked in the period of 2017 and 2019, the licenses of four hundred and twenty financial institutions in a cleanup exercise termed the Banking Sector Cleanup.

The four hundred and twenty institutions were made up of nine Banks, twenty-three Savings and Loans/Finance Houses organizations, three-hundred and forty-seven Microfinance Companies, thirty-nine Microcredit Companies, one Remittance Company, and One Leasing financial institution (Ministry of Finance – Ghana document released on Tuesday 31 October 2023). The issue is, if banks are regulated and there are sound governance principles then how did the Ghanaian banking sector get to that distressed state? The study is undertaken in the Ghanaian banking sector due to the uniqueness of the culture, traditions, and beliefs of its people which is different from that of developed and other developing countries. The assertion that the Ghanaian Banking Sector is unique is supported by an extract from the study by Berger, Xinming Li, Morris and Raluca (2017) which states that the cultural aspect of individualism and masculinity have a significant and positive association with bank failure.

### **1.3 Contribution of this study**

The study's contribution, is first and foremost, to show how independent directors, board size, board meetings and financial experts on the board contribute directly to avert the negative effects of OPR and rather enhance the FP, and also how FMZ moderates the link among mitigating mechanism and OPR as well as FP of the bank. Also, the study adds to the financial literature on the relationship among governance principles, OPR and FP.

The theory underpinning this research study is the agency theory. According to Jensen and Meckling (1976), agency theory is defined as clear or implied contracts whereby one or more persons (principals) engage someone (agent) to act on their behalf. In this study, stakeholders have their interests different from the Chief Executive Officer (CEO) and the other Key Management Staff.

### **1.4 Problem Statement**

In Ghana, there is the problem of banks being in the distressful state, which has operational risk and financial performance implications. According to the Banking Chapter Report (2020), The Bank of Ghana in 2017 reported that Ghana was having financial

sector that was in a considerable state of distress. In a study by Blankson, Amewu and Anarfo (2021), the causes of the distressed state of banks in Ghana which led to the banking clean-up mid 2017-2018 are poor CG practices, serious capital impairment, serious liquidity impairment, high non-performing loans (NPLs) and low profitability. As a result, the government and for that matter, the Bank of Ghana undertook a regulatory crackdown which resulted in a smaller but more sustainable banking industry, though there was a price paid. In The Banking Chapter Report of 2020, The BoG puts the overall costs of its clean-up exercise at some \$2.1 billion, equivalent to a little over 3% of the country's GDP in 2019. In 2017, before the clean-up,

Ghana could boast 36 banks but by the end of the clean-up in 2019, the number of banks had fallen to 23 (The Banking Chapter Report, 2020). Also, in a study carried out by Agyemang, Kong, Ayamba, Tawiah and Twum (2019), they assert that The BoG cancelled the licenses of two indigenous banks: Unique Trust Bank and Capital Bank on August 14, 2017, due to severe impairment in their capital. Meanwhile, just a year before its license cancellation Capital Bank had been given an award as the best-growing Bank and best Bank in deposits and savings at the 15th Edition of Ghana Banking Awards.

Unique Trust Bank was also awarded the best bank in 2011 by the same awarding institution. The reasons, as have been outlined in the study by Blankson et al., (2021) for being the causes of the banking clean-up exercise in Ghana are poor CG practices, serious capital impairment, serious liquidity impairment, high NPLs and low profitability all have OPR as well as FP implications for the Ghanaian banking sector and the Ghanaian economy; looking at the important contribution the banking sector makes to the positive functioning of the economy. This, in addition to the arguments peddled so far, gives credence to the need for the study to be undertaken to assess the effectiveness of governance mechanisms on OPR and FP in the Ghanaian banking sector.

## **1.5 Research aim, objectives and hypothesis**

### **Aims of the Study**

The research study is aimed at assessing the effect of mitigating mechanisms on operational risk and FP in the banking sector of Ghana.

### **The Research Objectives**

1. To assess the effects of mitigating mechanisms on the OPR of the banks.
2. To investigate the influence of mitigating mechanisms on the FP of the banks.
3. To assess the moderating role of firm size in the link between mitigating mechanisms and the operational risk of the banks.
4. To examine the moderating impact of firm size in the link between mitigating mechanism and FP of the banks.

### **Hypotheses**

1. H1: Mitigating mechanism has a positive effect on operational risk of the banks.
2. H2: Mitigating mechanism positively influences the financial performance of the banks.
3. H3: Firm size plays a positive role in the link between mitigating mechanisms and operational risk of the banks.
4. H4: Firm size has a positive influence on the link between the mitigating mechanism and the FP of the banks.

## **1.6 Significance of the research**

The research study helps to close the gap where so far little has been done in the area of corporate governance and operational risk and financial performance in the Ghanaian banking sector.

Also, the study provides conclusive evidence of the relationship amongst CG, OPR and FP and the moderating role of firm size since the evidence on these relationships is

inconclusive.

Furthermore, this research study provides empirical evidence of the effectiveness of current CG principles in the Ghanaian banking sector in terms of averting risk and enhancing financial performance.

### **1.7 Scope of the study**

CG has varied dimensions and principles that could be looked at in relation to risk and performance. However, for this research study, board structure and its characteristics are considered as corporate governance mechanisms (board size, board meetings, independent directors and financial experts). Operational risk in the study unlike studies conducted of banks in developed countries that have proper records of operational loss events, is not the same in most developing countries of which Ghana is part. So, for operational risk, the cost-to-income ratio is adopted as it has been used in a study by Fadum and Oye (2020). When it comes to financial performance, various variables could be used to measure financial performance. Given this study, return on assets (ROA) and return on equity (ROE) are adopted. The banks used in the study are mainly universal banks in Ghana which are both listed and non-listed. Control variables in terms of firm growth and age were used and the moderating variable – firm size was used to establish the link between CG mechanism, OPR and FP.

Though the study is limited by the defined scope, its results are very important not only to Ghanaian banks but to academics, scholars, researchers and policy-makers everywhere.

### **1.8 Organisation of the study**

Chapter One: This chapter includes the background of the research study, the problem of the study, the purpose and objectives, the research questions/hypotheses, the significance of the study, the scope of the research, and the chapter organization.

Chapter Two: This chapter consists of a review of related literature which covers conceptual and empirical reviews.

Chapter Three: This chapter covers the theoretical framework.

Chapter Four: This chapter is the methodology and covers the research framework, population and sample, sampling methods, data collection methods, data collection activities and data analysis procedures.

Chapter Five: This chapter involves data presentation, analyses/discussion and results.

Chapter Six: This chapter entails a summary of research findings, conclusions and recommendations.

## **CHAPTER TWO:**

### **CORPORATE GOVERNANCE, OPERATIONAL RISK AND PERFORMANCE IN THE BANKING SECTOR**

#### **2.1 INTRODUCTION**

Banks as financial institutions are pivotal to economic growth and development. Banks perform important roles and are very important in making the much-needed capital available to individuals, organisations, and governments to undertake economic activities that eventually drive growth and development. To accomplish economic development, a strong financial system must exist to deliver advantages to society and the economy. Modern banking systems offer significant services to a nation (Bandlamudi and Taidala, 2017). However, despite the important roles that banks play, many banks in the past have been bedevilled with operational risk issues in the form of bank failures that have led to global financial crises. Wang and Hsu (2013), for instance, list some high-profile operational risk events that have occurred over the past ten years, such as rogue trading that led to Barings Bank's bankruptcy in 1995, Allied Irish Bank's financial losses in the early 2000s and Société Générale's in 2008, and Torquoise's failure that resulted in a decline in trading volume in 2006 and 2009.

Given the numerous important roles that banks play in economic development, many studies have been undertaken by academia and scholars on how corporate governance principles can avert operational risks in organisations including banks. Some of the studies have been by Pearl-Kumah et al. (2014), who investigated the effects of risk management and corporate governance on the performance of banks in Ghana's banking industry. Another one was carried out by Gadzo et al. (2019), where the use of Least Square Equation model approach was employed to establish the relationship between credit risk and OPR on the FP of Universal banks in Ghana. Furthermore, on the international front, Altaf, Ayub, Shabbir and Usman (2021), undertook a study on whether OPR and CG affect the banking industry of Pakistan. The findings and the results of the three empirical studies show a relationship among corporate governance and operational risk and financial performance.

## 2.2 Mitigating Mechanism and Operational Risk in the Banking Sector

**2.2.1 Mitigating Mechanism:** According to a study by Bullock, Haddow, and Coppola (2013), mitigation, in its traditional sense, describes a consistent effort made to lessen or completely remove the danger that hazards and their impacts will have on people and property. Probability, or likelihood, and consequence, or both, are the two components of risk that are addressed by mitigation activities. In the case of the meaning of mechanism, Illari and Williamson (2014) define mechanism in terms of phenomenon and state that, it consists of entities and activities organized in such a way that they are responsible for the phenomenon. *The Oxford Dictionary* defines it as a process by which something takes place or is brought about. Therefore, a mitigating mechanism is said to be a process by which the occurrence of risk of loss is reduced.

For this study, conceptually, corporate governance is considered to be the mitigating mechanism that is used to reduce operational risks. CG, according to Ramalho (2016), is defined as the governing body's application of moral and capable leadership toward the establishment of a moral culture, high standards of performance, efficient control, and legitimacy. Also, Nerantzidis et al (2012) as cited in Agyemang, Ayamba, Tawiah and Twum (2019), define it as “the totality of the institutional and organizational mechanisms, and the corresponding decision-making, intervention and control rights, which serve to resolve conflicts of interest between the various groups which have a stake in a firm and either in isolation or their interaction, determine how important decisions are taken in a firm, and ultimately also determine which decisions are taken”. Lobez (2010), as cited in Nsaibi, Abidi and Rajhi (2020), defines corporate governance in terms of banking governance, and asserts that it is a preventive element of banking risk. Kaur (2017), in his study, defines CG as being concerned with ways of bringing the interests of investors and managers into line and ensuring that firms are run for the benefit of investors. The Organisation for Economic Cooperation and Development (OECD), as cited in Aldrige and Sutojo (2005), defines CG as the system by which firms are directed and controlled. According to Adusei (2019), there are three main key dimensions of corporate governance which are management oversight, financial quality and equity control.

In reviewing the definitions of corporate governance as cited above, it is observed that,

Nerantzidis et al, as cited in Agyemang et.al, (2019), corporate governance refers to all the procedures and associated decision-making, intervention, and control rights that are utilized to address conflicts of interest across different stakeholder groups. Ramalho (2017) sees corporate governance in both ethics and leadership of governing bodies to achieve ethical culture, good performance, effective control and legitimacy. OECD cited in Adrige and Sutojo (2205), regards corporate governance as mechanisms for controlling and directing firms. However, Lobez (2010), cited in Nsaibi et al. (2020), examine CG in the light of banking governance and states that it is a preventive element of banking risk. Though the definition by Nerantzidis et.al is lengthy and different from that of the OECD, evaluating it critically, they all seem to be considering how firms' decisions are scrutinized to ensure that various stakeholders' interests are satisfied and risk to them is curtailed to a reasonable level. Therefore, as a researcher, I define corporate governance as the mitigating mechanism used to control and direct organisations in such a way that various stakeholders' interests are satisfied and risks like operational risk are curtailed.

Having considered some definitions of corporate governance, there is a need to evaluate specific codes, models, dimensions, components and principles of CG to facilitate the understanding of CG as a mitigating mechanism in averting OPR events and enhancing FP in the banking sector.

## **2.2.2 Codes of Corporate Governance**

A report written by Richard Anderson and Associates for the Organization for Economic Cooperation and Development (OECD) (n.d.) states that there is a vast amount of source material available to evaluate the efficacy of the corporate governance code or not. How corporate governance is approached and how boards of directors, investors, and other stakeholders respond to it are governed by local laws, standards, and cultures. The review in this section is limited to three codes:

- The Corporate Governance Standards set out in the NYSE Listed Company Manual;
- The Combined Code produced by the Financial Reporting Council; and
- The Corporate Governance Code for listed Companies produced by the Associations

Française des Entreprises Privées (AFEP) and the Mouvement des Entreprises de France (MEDEF).

### **NYSE Code Provisions**

According to Anderson (n.d.), the NYSE Code has three unique components, being:

- **Code of Business Conduct and Ethics:** every business needs to create and release a suitable code of ethics and conduct for business. Neither the French Code nor the Combined Code specifically stipulate this. An assumption of high standards for corporate conduct and ethics could account for this absence. However, information leaked to the French and British media raises the possibility that this assumption is incorrect. In light of this, codes that do not currently include this kind of clause should be added.
- **Certification:** Companies are required by the French Code and the Combined Code to either comply with their respective codes or provide an explanation for non-compliance. Directors must attest to their compliance with the NYSE Code. A higher standard of adherence to CG regulations is implied by certification. Therefore, Anderson and Associates believe that rather than just explaining why corporate governance is irrelevant to them, policymakers should think about whether boards in the UK and France have had enough time to reflect on the advantages (to society at large) of good corporate governance. Boards should therefore be required to certify compliance.
- **Public Reprimand Letter:** The only code that permits the use of reprimand letters is the NYSE Code. According to Anderson and Associates, investors are primarily responsible for handling non-compliance in the UK and France. Policymakers ought to think about whether it makes sense to publicly identify and shame businesses that violate the French Code of CG or the Combined Code.

### **European Codes**

Anderson and Associates (n.d.) state that European regulations have lately been applied to the European Codes of Corporate Governance. The following are some

characteristics that are included in both the French and Combined Codes but not in the NYSE code:

- Comply or explain: as discussed above, the boards are required by the European codes to reveal the degree of their non-compliance with their separate codes and to provide an explanation for their non-compliance. There is evidence to support the assumption that some of the disclosures made under the Combined Code are routine and consistent from year to year. The idea of "Comply or Explain" has a fairly obvious purpose. But as the Financial Crisis has shown, this is no longer an adequate regime for compliance, particularly for large corporations that have a significant social impact. Therefore, policymakers should think carefully about whether compliance is still necessary unless it serves society's interests more than the directors' personal preferences.
- Separation of the roles of Chairman and CEO: The roles of the Chairman and CEO must be kept separate, according to both the French and Combined Codes. The recommendation made by Anderson and Associates is that boards should rebalance their management and assurance responsibilities. As such, all rules should mandate that the CEO and chairman functions be kept separate, particularly in businesses that have a large public interest.
- Availability of information: Information is a key component that is covered in both of the European Codes for directors. It is crucial to strike the correct balance between flooding directors with information and depriving them of it. Accordingly, it should be the Chairman's responsibility to make sure that this balance is struck appropriately and to assist directors in obtaining any additional information they may need to fulfil their responsibilities.
- Periodic elections: every director in Europe must be up for election regularly. The NYSE code does not address this.
- Reporting to the market: there are provisions in both European Codes about the requirement to report to the market.
- Use of AGM: businesses must utilize the AGM effectively to comply with both the French Code and the Combined Code.

## **Combined Code**

According to Anderson and Associates (n.d.), two specific clauses in the Combined Code are absent from the other two codes considered:

- **Role of institutional investors:** The function of institutional investors is covered in a part of the Combined Code. Evidence indicates that institutional investors play a critical role in ensuring corporate governance is carried out correctly. Instead of being handled in the Combined Code, which is more suited for the board of directors, the issue would be better addressed in a code for institutional investors. Whether or not to create required rules or codes of conduct for institutional investors to participate in the efficient implementation of corporate governance in their investments should be a consideration for policymakers.
- **Senior independent director:** one provision of the Combined Code is that the senior independent director serves as an independent conduit for board communications. This position has a lot of value, and legislators ought to think about whether additional codes ought to mandate it.

## **French Code**

According to Anderson and Associates (n.d.), a need for directors to represent all shareholders, not only the interest groups of particular segments, is enshrined in the French Code. They go on to say that, even while it may be said that this is the fundamental quality of "independent" directors, it is advantageous to be clear about the criteria in light of the Financial Crisis.

## **All codes**

According to Anderson and Associates, every code under review has parts covering the following subjects:

- Independent or non-executive directors: according to all the codes, there should be an equal number of executive and non-executive directors or a majority of non-executive directors. The subject is no longer debatable. There is content in each code, or there is material supplied by others that offers clarification on what is meant to be considered independent.
- Executive sessions: all the codes stipulate that non-executive directors must meet in private without the attendance of executive directors, usually with access to the managers within the company as needed.
- Nominations Committee: To appoint new directors, nomination committees are mandated by all the codes. The major goals are to guarantee an open and independent nomination process that is overseen by management and to guarantee that the appropriate mix of experience and talents is brought to the board. Since headhunters typically are not willing to shortlist candidates who have not taken on a certain post before, in fact, the search for new directors is frequently delegated to them, which has the effect of somewhat reducing the impression of transparency. As a result, this may considerably undermine one of the UK's Higgs review's goals, which was to particularly promote selecting prospective board members from a wider pool of candidates than had previously existed.
- Compensation Committee: every code stipulates that there must be a committee for compensation or remuneration. These are primarily made to address director compensation, particularly that of executive directors. This comprises the CEO and executive officers in the case of the United States. There is a strong case to be made, in light of the Financial Crisis, that the remuneration committees' purview should be expanded to include oversight of the broad principles that guide senior manager compensation across the board, particularly in situations where a large portion of compensation is contingent on bonuses, which have the potential to have a major impact on the organization's risk-taking culture.
- Audit Committee: every code mandates the creation of a board audit committee. Though they are supported by different legal forces, the prerequisites for knowledge and abilities are comparable.

- Internal Audit: according to the NYSE law, all corporations must have internal audits; under the Combined law, they must evaluate whether they need internal audits annually; and under the French code, audit committees are in charge of internal audits.
- Evaluation of board and committees: every code of conduct anticipates that boards and their committees must undergo some sort of review. The Combined Code also mandates that each board member's performance be assessed.
- Shareholder approval of equity compensation plans: except for the NYSE regulation, all of the codes mandate that boards approve equity pay schemes for executive officers and directors.

### 2.2.3 Models of Corporate Governance

In Ashiru, Nakpadia and Adebite (2020), many nations have diverse corporate governance models in relation to the board of directors. They contend that as a result, we speak of the UK/US (Anglo-American) model, which is the most often used corporate governance model globally; the employment of different models has been necessitated by the institutional environments in other nations.

Given practices such as the Japanese Keiretsu, the significant governmental influence in China, the cooperation of employee and capital providers in Germany, and the importance of politics and strongmen in Africa and other emerging countries. Hence, According to Adebite (2015), as cited in Ashiru et al. (2020), it is impractical to articulate a global governing paradigm. As a result, the effects of four corporate governance models on the board of directors are examined.

**The Anglo-American Model:** Here, Ashiru et al. (2020) discuss the corporate governance frameworks in the United States and the United Kingdom. In the UK, firms are required to self-govern under a principle-based governance model (Tricker, 2015; as cited in Ashiru et al., 2020). There are no clear rules in this model that direct corporate governance procedures in businesses. Organizations, on the other hand, rely on self-regulating corporate governance codes that are supplied by pertinent regulatory agencies. The "comply or explain" tenet is the foundation of this model. Since

compliance is optional, businesses must either "explain" their non-compliance with established codes or "comply" with them (Tricker, 2015; as cited in Ashiru, et al., 2020). In order to ensure that investors, whether current or future, have sufficient information to support their decision-making process, regulators often enable information sharing.

The principles-based model's code of corporate governance stipulates that the CEO and chairperson's functions must be kept separate, that the board must include independent non-executive members, and that numerous committees, including those for nomination, audit, and compensation, must be established. Higher standards of accountability and transparency are encouraged by these measures (Fama and Jensen, 1983; Majumdar, 2017; as cited in Ashiru et al., 2020). Owing to its many advantages, the principles-based model is extensively used, particularly in Commonwealth nations. However, there have been some criticisms of this model. For instance, Sama and Shoaf (2005), as cited in Ashiru, et al., (2020) the model's subjective nature renders it lacking in consistency in both approach and implementation.

In addition, because of the subjectivity of compliance, this model encourages a "level playing field" that keeps businesses from getting a competitive advantage. Also, Arjoon (2006), as cited in Ashiru (2020), pointed out that decision-makers can find the principles-based model challenging to interpret due to its wide scope. As such, in comparison, the US company law differs from the UK corporate governance model in that it is based on the laws of each of the member states rather than common laws (Nader et al., 1976; as cited in Ashiru et al., 2020). These regulations are based on rules and specify exactly how one must act (Arjoon, 2006; Sama and Shoaf, 2005; as cited in Ashiru et al.,). The US Securities Exchange Commission (SEC) is in charge of these duties because, in order to maintain uniformity, corporate aspects like investor protection, financial disclosures, and reporting continue to be the purview of the federal government. Important board committees must be established in accordance with US stock market listing standards and the SEC, in contrast to the UK's self-regulatory "comply or explain" system (Sarbanes-Oxley Act, 2002).

The rigid regulation and enforcement procedures for corporate governance provided by the rule-based approach's mandated governance mechanisms make them unyielding. For instance, by imposing fines on them, the Sarbanes-Oxley Act of (2002) increased the

accountability of directors for their organizations' adherence to governance standards. The SEC's corporate governance code compliance requirements were strengthened by the increased authority granted to regulators under the rule-based paradigm. Mallin (2007), as cited in Ashiru et al., (2020), the board of directors of businesses that follow the Anglo-American model consists of both "insiders" and "outsiders." Mallin goes on to say that a director who is considered an "insider" is one who either works for the firm as an executive, manager, or employee or who has close personal or professional ties to the company's management. Mallin (2007), on the other hand, emphasizes that an "outsider" is a person or organization that is not directly associated with the business or its management. Mallin (2007) adds that an independent or non-executive director could occasionally be the outsider. Filatotchev and Wright (2005), as cited in Ashiru et al., (2020) assert that, historically, a single individual has held the positions of CEO and chairperson of the board of directors for a corporation. Bhagat and Black (1999) as cited in Ashiru (2020), the combination of duties is also known as CEO duality, which is prone to abuses involving the consolidation of authority in the hands of one person.

Moreover, the Anglo-American governance model mandates that shareholders choose directors and designate auditors. There is a significant difference between the US and the UK in how they carry out their tasks. The power to vote on the dividend that the board of directors proposes is not granted to shareholders in the United States. In contrast, shareholders in the UK can vote on the dividend proposal (Tricker, 2015; Lorsch and MacIver, 1989; as cited in Ashiru et al., 2020).

**Continental European Two-Tier Model:** OECD (2015), as cited in Ashiru et al., (2020), a two-tier board system is used in most European nations. In Europe, social components of corporate governance are usually integrated into the company's mostly rule-based laws. Countries are permitted to adopt either the Anglo-American (UK/US) or continental European governance models under the company legislation established by the European Union (EU) for the European firm (the *Societas Europaea*). Nonetheless, a lot of EU nations are moving toward a social governance structure that prioritizes a stakeholder orientation for businesses. For instance, because of the concentration of ownership in Germany, banks have a significant influence over corporate affairs due to the lack of competition in the market for corporate control. Additionally, supervisory

boards of corporations exist. These are divided evenly, with directors chosen by shareholders to make up the other half and employee representative directors chosen by trade unions to make up the first half. Employees therefore have a say in how decisions are made at the company. The advantages derived from the separation of the CEO and chairperson responsibilities are undermined by this employee authority. Nonetheless, corporate ownership is dominated by a concentrated family shareholding structure in France and Italy.

Ashiru et al., OECD (2015) note that although this model has been associated with benefits, it has drawn criticisms. For example, because there is a possibility that the information made available to the public would be manipulated, information asymmetry may be common. Additionally, the management of the corporation has the authority to choose board members since employees, who make up half of the supervisory board, may be swayed by management. Nonetheless, several European Union organizations are using shareholder-prioritizing strategies in an effort to broaden their scope and further the optimization of shareholder value (Tricker, 2015; as cited in Ashiru et al., 2020).

Similar to agency theory, stakeholder theory applies to all models of governance; however, the elements of the theory are most clearly defined in the continental European model. In continental Europe, boards of directors represent a wide range of stakeholders. For instance, in Germany, where workers may hold up to 50% of the board positions (Tricker, 2015; Mallin, 2007; as cited in Ashiru et al., 2020), it is believed that the corporation owes its responsibility to the larger environment rather than just a select few shareholders. OECD (2015), as cited in Ashiru et al., companies offer some control powers, rewards, and obligations to their stakeholders, such as employees, under the continental European governance model.

**The Asian Model:** According to Ashiru et al. (2020), the corporate governance systems in China and Japan are being discussed. The Anglo-American corporate governance model is not the same as the Japanese one. Japanese organizations place a strong focus on the close-knit social structure in Japan (Aoki, Gregory and Miyajima, 2007; as cited in Ashiru et al., 2020). As a result, Japan has a traditional business model in which corporations interact through cross-holdings and interlocking directors (known as

keiretsu). Large boards of directors have always been chosen largely based on loyalty. In essence, promotions to boards are obtained by managers in exchange for their fidelity and length of service. Aoki et al., (2007), as cited in Ashiru et al., (2020), since membership is not based on performance, this approach to board membership has been criticized for producing subpar directors.

Ashiru et al., however, contend that the Japanese approach fosters ongoing discussion along the hierarchy and management continuum, leading to widely accepted viewpoints on matters. Boards therefore tend to be more decision-ratifying than strategic or decision-making (Tricker, 2015; as cited in Ashiru et al., 2020). Since the Japanese are not persuaded of the value of an independent director, outside directors are uncommon in the Japanese model. They argue that internal staff members are more knowledgeable about the organization than external members. The market for corporate control is essentially nonexistent due to the absence of independent directors. This approach lessens the likelihood of an adversarial takeover in Japan. The system requires full-time statutory auditors to be hired as a check, and they are required to report to the board any corporate violations they find.

Ashiru et al. (2020) state that a growing number of Japanese organizations are adopting the idea of independent directors as a result of pressure from foreign investors and the country's economy's stagnating growth. Indeed, Aoki et al. (2007) as cited in Ashiru et al., it is recommended under Japanese regulations that a firm with independent outside directors should establish a supervisory committee that operates independently of the board of directors. Because of this departure from the traditional Japanese approach, some have speculated that Japan may soon adopt the Anglo-American model of governance (Tricker, 2015; as cited in Ashiru et al., 2020).

According to Zhang (2008), as cited in Ashiru et al., the Chinese governance model places a strong focus on the role that Chinese families play in Asian society. The majority of businesses that rule Asian economies are heavily influenced or owned by China. Because the dominant family owners have the majority of the authority in the governance of these Asian organizations, the board serves as a support function rather than a decision-making one (Tricker, 2015; Zhang, 2008; as cited in Ashiru et al., 2020). According to Zhang in Ashiru et al., while independent directors are required by corporate governance

regulations in most of these Asian nations to be appointed to boards, independent directors are generally viewed as less important by regulatory bodies.

Additionally, and in line with the stewardship idea, managers in the Asian model, as stated by Aoki et al. (2007) as referenced in Ashiru (2020), are stewards whose motivations are in line with the goals of their principals rather than being driven by personal ambitions. The steward acts cooperatively because they believe it to be more beneficial. Under the Asian model, trust is essential to getting promoted to director or senior management roles. Dispersed share ownership is common in the Anglo-American context, and the existence of institutional owners makes ownership of businesses and reporting more difficult (Mallin, 2007; Triole, 1996; Useem, 1993; Nader et. al, 1976; as cited in Ashiru et al., 2020). The 'keiretsu' network of directors, which is widely used in the Japanese stakeholder-orientation paradigm, consists of representatives from financial institutions, other networked enterprises, and suppliers (Aoki et al., 2007; as cited in Ashiru et al., 2020). The appointment of persons as full-time statutory auditors and the election of directors by the board are mandated under the Japanese Commercial Code.

**The African Model:** Most African nations use adapted forms of the Anglo-American corporate governance models (Nakpodia, Adegbite, Amaeshi and Owolabi, 2018; Okike and Adegbite, 2012; as cited in Ashiru et al., 2020). Typically, their corporate governance regulations generally adhere to a unitary system in which the board is the decision-making body. On the other hand, many of these countries' organizations frequently contain politically connected people, also known as strongmen or women (Adegbite, Amaeshi and Amao, 2012; as cited in Ashiru et al., 2020). Adegbite (2012), as cited in Ashiru et al., contended that government official affiliations play a pivotal role in determining the prosperity of corporations. Furthermore, the majority of companies have powerful shareholders, and the majority of these businesses are either family-owned or family-influenced.

African nations' corporate governance authorities frequently respond to global directives from wealthier nations, and they may enforce governance standards on businesses operating in their different sectors (Osemeke and Adegbite, 2016; as cited in Ashiru et al., 2020). However, the strategy's effectiveness has been hampered by the poor institutional environments that are common in these countries. The influence of corporate governance

is significantly impeded by the deficiencies present in their institutional environments. There is a rising conviction in the concepts that underpin corporate governance, notwithstanding the many problems that companies face in these regions. This conviction has driven ongoing advancements in the direction of reaching respectable corporate governance norms.

The Anglo-American model has also impacted corporate governance practices in emerging economies, such as Africa, which explains why boards of directors are considered credible (Okike, Adegbite, Nakpodia and Adegbite, 2015; as cited in Ashiru et al., 2020). There are many agency problems in the African and other developing country models, including the principal-principal agency dilemma (Nakpodia et al., 2018; as cited in Ashiru et al., 2020), mainly because its institutions were unable to restrain the excesses of influential figures (Adegbite, 2015; as cited in Ashiru et al., 2020). Information is accessible to a chosen group of shareholders at the expense of minority shareholders when strong families or individual shareholders are present. This practice is made possible by the fact that family members or nominees chosen by the controlling shareholder often serve on the board of directors (Claessens and Yurtoglu, 2013; as cited in Ashiru et al., 2020).

#### **2.2.4 Dimensions of Corporate Governance**

Dimensions of CG have been considered by different researchers, academics and policymakers in various ways depending on which aspect of corporate governance is being considered. However, in this study, attention is geared towards three dimensions, which include shareholder value, long-term and sustainable growth and value creation.

**Shareholder Value:** This dimension of corporate governance according to the study by McCahery and Vermeulen (2014), is looked at in terms of ownership structure and control. In the study, they argue that two ownership structures are being widely dispersed and controlling or concentrated ownership structures.

McCahery and Vermeulen (2014) describe the widely dispersed ownership structure as characterized by tiny and numerous shareholdings, and it is present in market systems like the US and the UK. It is believed that due to the dispersed nature of the ownership, managerial control tends to be strong which leads to managerial misbehavior and reduces shareholder value. Therefore, mechanisms like account certification, audit regulations, the separation of the roles of chairman and chief executive officer, risk-management system implementation, stringent disclosure guidelines, and the regulation of audits and auditors are put in place as corporate governance measures to reduce managerial misbehaviour and increase shareholder value. They say that when it comes to concentrated or controlling ownership structures, the extent of managerial misconduct is frequently lessened since one or more insiders, who typically own controlling holdings, have an incentive to keep an eye on and correct management. Shareholder value is increased when insiders are held accountable and follow established governance procedures.

**Long-Termism:** McCahery and Vermeulen (2014) examined the effects of both short- and long-term on the performance of the company. It was their opinion that a major contributing factor to the crisis of the late 2000 was the CEOs of banks and other financial institutions' short-term focus on increasing shareholder value. In reaction to the crisis, decision-makers, scholars, and professionals underscore that organizations with a dominant ownership structure are best suited for carrying out corporate governance functions. This claim is more favourably contested by the claim that investors in businesses with broadly distributed shareholder structures tend to prioritize liquidity and immediate returns above creating value for the company, which is often accomplished over the long run.

**Sustainable Growth and Value Creation:** Still on the study undertaken by McCahery and Vermeulen (2014), they talk about the third dimension of CG which, according to

them is usually ignored. Thus, developing and maintaining value within the company. They contend that businesses become bureaucratic and narrowly focused as a result of excessive regulation. Consequently, businesses that strictly adhere to the corporate governance framework are unable to realize their full growth potential. This is because it results in heightened competitiveness, insider stock sales, and unfavourable analyst sentiment. Poor stock price performance raises capital costs and makes it more challenging to find and hire the skilled workers needed to support future expansion and value creation. The researchers went on to say that investors and high-performing businesses have expanded the corporate governance discussion to include a third dimension: the possibility of sustained business growth and value generation. In relation to this third dimension, according to McCahery and Vermeulen, activists can use a range of strategies, including negative media coverage and short-selling ventures, to impose more stringent controls on company executives. They can also restructure the company, boost dividends, and buyout shares to get it back on track.

### **2.2.5 Components of Corporate Governance**

According to McCahery and Vermeulen's (2014) research, some world-class corporations, such as Apple, Walmart, Samsung, and Google, are setting record-high share prices despite defying conventional corporate governance principles. This suggests that investors have faith and confidence in these companies. They concluded that there is no clear distinction between "good" and "bad" corporate governance based on ownership or group structures. However, continued ability to show sustainable competitive growth may have a greater effect on investors and analysts than different types of corporate governance mechanisms, hence consideration of the following components of corporate governance:

- Coordination
- Communication
- Conversation

- Connection
- Collaboration; and
- Co-creation

Even though, in the study, the above components are considered, coordination is considered on its own, while communication and conversation are also considered as one. So also, connection, collaboration and co-creation are considered as one. Thus, even though, there are six components in the study, they are seen as three components.

**Coordination:** In McCahery and Vermeulen's (2014) research, coordination is viewed as a facet of corporate governance. CEOs' primary responsibility as coordinators is to optimize the value of the company's stock, thereby altering the wealth of stakeholders. Consequently, as the size and complexity of the company have grown, the coordination of operations among various business units has become a part of the top executive responsibilities. The study found that the coordinator's job is to act as a liaison between the business divisions, the investor community, and the general public.

The study claims that the coordinator contributes by establishing the guidelines for innovation and the firm's business, market, and operations strategies. According to McCahery and Vermeulen, effective and institutionalized coordination can develop into a distinctive corporate culture and "tone-at-the-top" that support an organization or collection of organizations in creating and preserving a larger economic moat. The researchers, McCahery and Vermeulen go on to say that while the coordinator's function is typically specific to a company or group of companies, it is not always that way. A well-performing and adaptable coordinator who starts strategies that, for example, boost productivity and/or spur innovation can turn a company—or group of companies—that is progressively evolving into an "ageing giant" into a successful healthy ageing model in the corporate life cycle. While McCahery and Vermeulen acknowledge that coordination is a crucial aspect of corporate governance, they also stress the significance of board dynamics and having a diverse and well-rounded board. In this regard, they hold the view that boards should hold the coordinator accountable and, more significantly, assist coordination efforts by seeking out opportunities and establishing connections with other stakeholders, governments and the general public.

**Communication and Conversation:** According to McCahery and Vermeulen (2014), dialogue and communication are essential for successful, long-term-focused businesses to interact with their shareholders. Consequently, it is not unexpected that regulators and legislators are enacting more laws, guidelines, and best practices to encourage communication between a company's shareholders and management.

According to McCahery and Vermeulen (2014), regulations that are solely focused on encouraging investor involvement with management ultimately provide unsatisfactory outcomes because there is no guarantee that this engagement would ultimately result in increased growth and value creation. Furthermore, the researchers believed that the implementation of a regulatory framework would adversely disrupt stable arrangements and significantly modify present incentive patterns without guaranteeing the emergence of new options.

They contend further that a variety of investor engagement initiatives have already been implemented, many of which are based on the investors' ownership share in the business. Less than 2 per cent of investors, for example, often use a combination of active and reactive techniques. They therefore take a more active role in persuading the management and board of directors of the need for changes in organizational structure and strategy through both public and private channels. They claim that institutional investors holding more than 10 per cent of the outstanding shares are frequently represented on the board of directors, allowing them to actively engage with management on the long-term direction of the company. McCahery and Vermeulen (2014) further assert that an effective coordinator depends on investor engagement.

However, according to them, the issue is that instead of putting valuable (and frequently informal) safeguards into place, legislators and regulators have frequently missed enacting formal control powers in shareholder general meetings. In providing investors with more opportunities to interact with companies Grapper (2014) as cited in McCahery and Vermeulen; transparency and information sharing about growth plans and initiatives can be advantageous for businesses and investors. White (2013), as cited in McCahery and Vermeulen (2014), asserts that interactions with investors alone may not have a major impact on a company's economic moat; rather, interactive discussions regarding

the introduction of new products, product innovation, and/or entering new markets among executive management, investors, and the board of directors may also be crucial.

**Connection, Collaboration and Co-Creation:** On connection, collaboration and co-creation as components of corporate governance, McCahery and Vermeulen (2014), acknowledge that the impact of their actions on expanding and deepening the economic moat has not been adequately measured by empirical study.

They, therefore, further assert that to comprehend the formal and informal ties, partnerships, and co-creation activities that have the potential to be truly material, they take into account instances of groups of companies in order to ascertain how these ties affect the potential for value creation and sustainable growth. In this context, they took into account Johnson & Johnson's collaboration with biotechnology startups, which raises the likelihood that the company may introduce fresh ideas to the market. According to their statements, Johnson and Johnson anticipates that the development of new medications and pharmaceuticals will be aided by their helpful cooperation tactics.

In addition, General Electric (GE) is taken into account because of its strong economic moat rating, which is a consequence of the substantial synergies that the GE group's businesses and divisions have with one another. McCahery and Vermeulen (2014) argue that, given the ongoing debate, businesses and their investors should concentrate on data and metrics that are important to their ability to expand and remain competitive. Given this, they anticipate that partnerships, joint ventures, and co-creation initiatives will become cutting-edge topics of discussion and discussion at investor-management meetings.

## **2.2.6 Principles of Corporate Governance**

The principles of CG outlined in this study are the ones that are considered in the study by Burak, Erdil and Altıntaş (2017), where the following principles are discussed:

- Transparency
- Fairness

- Accountability
- Responsibility
- Social awareness
- Discipline and
- Independence

**Principle of Transparency:** This principle, according to Armstrong (2005), in Burak, et al. (2017), the UN defines transparency as the state in which the public is able to obtain easily accessible and trustworthy information regarding the operations and choices made by the public sector. They also cite TUSIAD (2002), which states in their study that the timely disclosure of sufficient and correct information regarding a company's financial performance, corporate governance, co-partnership structure, business, and operations constitutes the principle of transparency. Furthermore, they cite SPK (2005), who states that transparency is also defined as the timely, accurate, complete, understandable, interpretable, and inexpensive disclosure to the public of the company's financial and non-financial information, except for information that is a trade secret and has not yet been made public. In reviewing the definitions of transparency as cited above, the United Nations' definition in Armstrong (2005), which talks about access to information, is the same as the definitions of TUSAID and SPK which also see it as publishing timely information on a company's performance for public access. The study at this point, defines the principle of transparency to ensure that all the information about the company that investors and potential investors need for decision making are made available on a timely basis as required by regulations and principles.

**Fairness:** The concept of fairness in corporate governance, as stated by TUSAID (2002) and referenced by Burak et al. (2017), relates to the practice of treating stakeholders and shareholders equally in all of its operations and the avoidance of potential conflicts of interest and other negative outcomes. According to Burak, et al., SPK, (2005), also asserts that the fairness principle lays out how corporate governance prevents potential conflicts of interest and treats shareholders and stakeholders equally in all of its operations. Dogan (2007), as cited in Burak, et al. (2017), the fairness principle permits

business executives to stand at an equal distance from every sector that will be impacted by the decisions made, safeguarding not just the rights of a specific sector but also the rights of all parties required for the company to survive. In reviewing the principle of fairness, it can be said that all three research articles considered are all saying the same only that a minor difference is observed which in my view, is a result of semantics. Therefore, the study defines the principle of fairness to be a principle that considers shareholders' and stakeholders' interests in decision-making and also ensures that potential conflict of interest is avoided.

**The Principle of Accountability:** The concepts of accountability, according to TUSAID (2002) and cited by Burak et al. (2017), include the board of directors' protection of the company's management and shareholders' interests as well as the explicit defining of governance standards and obligations. Millstein (2000), as cited in Burak, et al. (2017) also defines accountability as the disclosure of governance roles and responsibilities, voluntary support to guarantee compliance from managers and shareholders, and oversight by the board of directors, which has objective jurisdiction. Also, in the same Burak, et al. (2017), Apaydm (2009), asserts companies can become accountable by adhering to the norms and guidelines established by different organizations.

In essence, TUSAID and Millstein's conceptions of the principles of accountability are similar in that they regard the board of directors as having the task of ensuring that management and shareholders fulfil their obligations. On the other hand, according to Apaydm, accountability is defined as companies adhering to norms and values that have been established by different organizations. In my view as the researcher, having considered all three definitions, I see the principle of accountability as the board of directors, management and stakeholders performing their roles as required of them in the interest of one another by following rules, regulations and principles.

**The Principle of Responsibility:** On this corporate governance principle, TUSAID (2002) as cited in Burak, et al. (2017), assert that the goal is to guarantee that business practices and actions adhere to pertinent legal, social, and ethical standards. The principle of accountability pertains to ensuring that all business management actions carried out in the company's name comply with applicable laws, partnership agreements, and inter-corporate regulations. It also involves monitoring these (SPK, 2005; Burak, et al. 2017). Although accountability enables people in positions of authority to justify their actions, responsibility enables an examination of whether individuals in positions of authority have carried out their duties in a way that satisfies legal requirements and has made effective use of their obligations (Doğan, 2007; in Burak, et al. 2017).

However, according to Witherell (2002), as cited in Burak et al. (2017), the idea of corporate responsibility can be applied to anticipate how companies would react to societal expectations in order to fortify the mutually beneficial relationship between business and society. In reviewing the definitions, it is seen that TUSAID, SPK and Doğan all see the principle of responsibility as people charged with corporate responsibility complying with legislation, and social and ethical values in the discharge of corporate activities. Witherell, on the other hand, holds a different perspective. He believes that it is the applications that ensure firms can adapt to societal expectations in order to reinforce the interdependent relationship that exists between enterprises and society. Even though semantically, it appears Witherell's definition of responsibility is different, analytically, his view is not different from those of TUSAID, SPK and Doğan since society expects businesses to respect the legislation and be ethical and socially responsible.

**The Principle of Social Awareness:** It describes programs that highlight how a business affects society and is typically seen as a liability of a business toward its shareholders and stakeholders (Burak, et al. 2017). They go on to say that corporate governance is based on a strong foundation and that the adoption of a socially conscious strategy by the firm can guarantee the sustainability of this management style and anticipate social acceptance. When it comes to enterprises, social responsibility is the practice of applying business decisions with consideration for the welfare of society and the assumption of responsibility for the results by management and staff (Apaydın, 2008; as cited in Burak, et al., 2017). Greening and Gray (1994), as cited in Burak, et al. (2017), businesses are

under pressure from environmental actors to uphold their social responsibility obligations. When they do so, they can meet these actors' expectations and enjoy greater social acceptance. According to the definitions/views of the above-cited scholars, once a business recognizes the needs of society and incorporates them into its activities, it receives societal acceptance. Therefore, the principle of social awareness is the fact that businesses recognise that they operate in society and there are expectations society has of them and make an effort to live up to the expectations.

**The Principle of Independence:** The concept of independence, according to Burak et al. (2017), is the idea that the top management and members of the board of directors behave in a way that respects investors' rights in all of their actions and decisions and are not reliant on any one institution, organization, group, or person. They go on to say that the neutrality of the company correlates to the preservation of the interests of all stakeholders rather than the advantage of an individual or group and that this is the concept of independence in the context of corporate governance. To be considered independent, one must not have a personal or professional relationship with any manager employed by the organization or management. At this point, the corporate management should not have any influence over the board of directors or the audit committee (Şen, 2013; cited in Burak, et al., 2017). In reviewing Burak, et al.'s, definition vis-à-vis that of Sen, it can be said that their definitions are the same as they all allude to independence as being able to make business decisions without any influence from institutions, individuals or groups of people.

**The Principle of Discipline:** According to Burak et al. (2017), the discipline factor is regarded as the primary component of corporate governance when assessed in light of corporate governance principles. CLSA, (2001) as cited in Burak, et al., the reason for this is that the pertinent laws and legislative applications are acknowledged as a significant macro-determinant of corporate governance in the markets. In the CLSA's submission, this circumstance calls for the proactive application of policies and processes that can benefit all parties involved in corporate governance. As a result, at this moment, corporate governance and business processes and applications are related through the discipline concept. The function of corporate governance principles is to serve as a

strategic roadmap for the organization concerning the efficient oversight of the board of directors and the board's obligations to the company and its shareholders (Şen, 2013; as cited in Burak, et al., 2017). In reviewing the definition of discipline, both CLSA and Sen are saying the same they seem to say that discipline is the acceptance and application of the relevant laws, principles and procedures that ensure proper and effective governance of corporations in that all stakeholders benefit.

**2.3 Operational Risk:** Price Waterhouse Coopers (PWC) is cited by Altaf et al. (2021) to have defined operational risk as the direct or indirect loss arising from insufficient external events and malfunctioning internal processes, people, and systems. Operational risk is also defined by Sapovadia (2008) as the possibility of suffering a loss as a result of insufficient or unsuccessful internal systems, people, processes, outside events, or reputational risk. The Basel Committee on Bank Supervision (2006) also has the same definition. Hassan (1999) listed the following risks as part of operational risk: portfolio, country, reputational, tax, business continuity, and regulatory risks. Saunders and Linda (2002) on their part assert that operational risk stems from internal and external sources.

Operational risk is defined by the Basel Committee on Bank Supervision (2006) as the risk of loss arising from insufficient or malfunctioning internal systems, people, and procedures. PWC as cited in Altaf, et.al, and Sapovadia give a definition which is the same as that of the Basel Committee on Banking Supervision. However, Hassan (1999), defines operational risk in terms of constituents that make up the operational risk, so also are Saunders and Linda (2002), who define operational risk as the risk that stems from internal and external sources. Until the Basel Committee's definition, most researchers and writers were defining operational risk in terms of its constituents (Hassan, 1999; Saunders, 2002). However, since the Basel Committee's definition, most researchers including PWC and Sapovadia seemed to go by Basel's definition which is "Operational Risk is the risk of loss resulting from inadequate or failed internal processes, people and systems". The study, therefore, defines operational risk as the loss brought on by unfavourable external occurrences as well as malfunctioning internal elements like people, systems, and procedures.

### **2.3.1 Types of Operational Risk in the Banking Sector:**

#### **Internal Fraud**

According to De-Jongh and Vuuren (2012), internal fraud is defined as losses resulting from actions meant to steal, misappropriate, or evade rules, laws, or corporate policies that affect at least one internal party. For example, money that bank finance officers have embezzled.

#### **External Fraud**

De-Jongh and Vuuren (2012) on external fraud defines it as damages resulting from actions taken by an outside party to steal property, commit fraud, or evade the law. For example, credit card theft and its subsequent use.

#### **IT Disruptions**

On IT disruptions, De-Jongh and Vuuren (2012) define it as a systems failure that causes significant losses and can have a big effect on the specific institution or perhaps the financial system. For instance, according to McPhaid (2003), referenced in De-Jongh and Vuuren (2012), there are some possible operational risk issues with the Canadian banking system, including the inability to meet time-sensitive payment deadlines and payment system disruptions and dislocations that may cause serious liquidity shortages in financial institutions.

#### **Principal-agent Risk**

De-Jongh and Vuuren (2012) describe principal-agent risk as an operational risk category that results from agents acting on behalf of the organization but pursuing their own interests rather than the best interests of the owners. For example, according to Lang and Jagtiani (2010) as cited in De- Jongh and Vuuren (2012) principal-agent risk was a major factor in the financial crisis.

#### **Government Regulation**

This is a loss resulting from a change in regulations or legislation which can increase

costs of operations or even restrict a company from doing business.

### **Declining Profit**

This is an internal operational risk where actual profit turns to decline from budgeted profit.

### **2.3.2 Management of Operational Risk**

According to De Jongh et al. (2013), the concepts of Enterprise-wide Risk Management (ERM), such as those stated in the ISO 31000: 2009 Risk Management Standard (ISO 31000, 2009), are strongly related to the management of operational risk. ERM embraces the following important steps for operational risk management:

- define the company's strategic objectives and convert them into categories of operational risk that need to be controlled;
- analyze risks by defining, characterizing, approximating, and assessing each one;
- assess the chance and consequences of events occurring;
- explore the options for risk mitigation that could lower the impact and the likelihood that an incident would occur;
- put in place risk thresholds, tolerances, and controls to guarantee that occurrences of operational risk are handled, tracked, and managed; and
- verify the existence of management processes (such as reporting and procedures and processes for model validation).

Operational losses could exceed expectations if there are any breaches, gaps, or inefficiencies in the ERM process. Therefore, any institution or organization that intends to mitigate operational risk could follow the ERM process meticulously.

### **2.4 Banks and the Banking Sector:**

The banking sector in general can be said to be a sector made up of credit institutions, financial institutions, and related businesses. In this research study, the emphasis is on banks in Ghana.

**2.4.1 Definition of Bank:** Walter Leaf as cited in Prabhavathi (2018), defines bank; “A bank is a person or corporation which holds itself out to receive from the public, deposits payable on demand by cheque”. Professor Kinley, however, in the same study by Prabhavathi (2018), defines a bank as; “A bank is an establishment where individuals make advances of money as may be required and safely made and to which individuals entrust money when not required by them for use”. Baba, (2012), defines a bank as; “A bank is a reliable financial institution which receives money from one group of people and lends to other groups of people. So, the bank performs the duty of financial intermediary among the people and creates the credit money”. Sinkey (1992), also defines a bank as an organisation that has been given banking powers by the state. Banks in their operations face many operational risk issues and people tasked to run the affairs of the banks in the interest of stakeholders are to put in place mitigating mechanisms to either remove or reduce these operational risks.

## **2.5 Mitigating Mechanisms on Financial Performance in the Banking Sector**

The study, following through with the review of literature in the areas of concepts, theory and empirical issues, touches on the aspect of the objectives that deal with mitigating mechanisms and financial performance in the banking sector: Much has been reviewed conceptually on the mitigating mechanism and therefore, this paragraph is dedicated to the review of financial performance conceptually.

**2.5.1 The Concept of Financial Performance:** This concept is defined by Bhandari (2018), as the analysis of financial statements to identify financial strengths and weaknesses by establishing appropriate relationships among the figures of income statement and balance sheet. Financial performance is defined by Diez-Busto, San-Martin, and Perez (2022) as "a quantitative measure of how well a company uses its business assets and generates revenues." It refers to the company's overall financial health over a given period". Teixeira, Rafael, and Pardal (2016), on their part, define financial performance as the ability to generate profits beyond the cost of capital and to uphold investment responsibilities. Financial performance, according to Verma (2022), is also the extent to which financial goals are being or have been achieved.

It is a crucial component of finance risk management. Bhandari (2018) and Diez-Busto et. al (2022), are similar in their definitions of financial performance as they see it as a measure of figures from Income Statement and Statement of Financial Position to establish how well the firm's assets have been used. Teixeira, et. al, (2016) and Verma (2022), are also similar in their definitions of financial performance as they define it in terms of the profitability of the firm. This is not far-reaching enough compared to the definitions by Bhandari as well as Diez-Busto et. al where they go beyond profitability and consider balance sheet figures. In this study, financial success is measured in terms of return on equity (ROE) and return on assets (ROA), which I define as a measure of how well a company's assets have been used to create value.

Five objectives are being considered in this study. The last three objectives try to establish the causal relationships between mitigating mechanisms and operational risk as well as financial performance: board independence and operational risk and financial performance. With these objectives, the study relates the literature that is reviewed to them empirically in the latter part of the review. However, some theories underpin this study and therefore, the study at this point considers the theoretical review part of the whole chapter two.

## **2.6 Empirical Review**

Empirical review in a literature review is about talking about the various research that has been done by other researchers that concern one's research topic or others. Therefore, in this study, various works done by other researchers in the area of CG, OPR or other risks and FP are discussed.

Altaf, Ayub, Shabbir and Usman (2020), undertook a study on whether OPR and CG affect the banking industry in Pakistan. The researchers employed the use of a questionnaire to solicit data from 200 operational risk managers. Data collected were analyzed in the Statistical Package for Social Sciences (SPSS). In their analysis and findings, the researchers conclude that good operational risk management (ORM) is achieved through appropriate identification, monitoring, and control, as well as the diligent attention of the bank's board of directors and senior management. Altaf et al., further concluded that senior management and the corporate board have a constructive role to

play in the efficient management of operational risk.

Also, in Altaf et al., they confirm that studies by Muhammad et al. (2020) and Nguyen et al., (2020), show that improved bank performance is a result of sound corporate governance and risk management.

Using empirical data, Nsaibi, Abidi, and Rajhi (2020) conducted a study on operational risk and corporate governance. The secondary data of 14 banks spanning 8 years, from 2006 to 2013, was sourced and used for analysis by the researchers using panel data. Based on the panel data, linear regression was applied. The researchers' study considered seven governance indicators, namely, the proportion of foreign directors, the presence of a state representative, the proportion of institutional directors, the size of the board of directors, the proportion of independent directors, the Turnover of the CEO and the internal rating of the bank. The findings show a strong and positive correlation between operational loss incidents and six governance parameters. However, there is no connection between operational risk management and the sixth indicator, CEO turnover.

Another research study that is considered under the empirical review is the study undertaken by Neifar and Jarbouï (2018), on CG and OPR, voluntary disclosure: evidence from Islamic banks. Thus, in Islamic banks, information disclosure is crucial to reduce information asymmetry. Hence, Neifar and Jarbouï (2018), in their quest to find out how CG requirements can lead to the disclosure of OPR disclosures employed the use of a content analysis method whereby, annual reports of 34 Islamic banks scattered in various countries and over period ranging from 2008-2014 was used. Analysis was carried out through correlation and multiple regression and the results showed that there is a significant impact of independent directors, board monitoring and the external auditor type on OPR voluntary disclosure. Nonetheless, it was discovered that the impact on OPR voluntary disclosure was reduced when the chairman and chief executive officer roles were concentrated on one individual. Hence, it is observed that some CG principles impact significantly OPR voluntary disclosure in Islamic banks and probably, in conventional banks.

Also, in a similar study, to that of Neifar and Jarbouï (2018), Naveed and Abdin (2020) undertook a study on CG mechanism and the risk exposure of Islamic mutual funds: evidence from Islamic countries. Their study aimed to analyze the impact of CG

characteristics on the risk exposure of Islamic mutual funds. A sample of 185 Islamic mutual funds was used and the data for the study consisted of nine years from 2009-2017. The data were analyzed through a dynamic panel regression model. The results showed that CG characteristics such as board independence, directors and institutional ownership and overall governance quality help reduce the total and downside risk exposure of Islamic mutual funds. The results also imply that the chief executive officer duality and board size are insignificant in reducing the risk associated with Islamic funds, which are prevalent in both countries.

Significantly, in 2013, Nyamongo and Temesgen undertook a study on the topic, "The effect of governance on the performance of commercial banks in Kenya: a panel study". The purpose of the study was to investigate the effect of CG on the performance of 37 commercial banks in Kenya over the period 2005-2009. In terms of methodology, the study used two measures of performance; return on assets (ROA) and return on equity (ROE) and three measures of governance namely the board size, independent directors, and the CEO duality. The study followed a panel econometrics technique to investigate the relationship between governance variables and bank performance. A baseline model was used in the analysis and the results show that large board size impacts performance negatively. On the independent directors, it was found that independent board directors enhance the performance of banks. The results, however, indicate that the performance of Kenya's commercial banks is unaffected by CEO duality or otherwise.

Saravana, Thenmozhi, and Sasidharan (2020) analyzed data from all companies registered on the National Stock Exchange between 2004 and 2017 to investigate the impact of independent directors on business value. The findings suggest that board independence adds value to the company.

Brandes, Dharwadkar, Ross and Shi (2022), on their part, undertook a study to determine whether the utilization of retired independent directors had an impact on the board's total bandwidth. Utilizing data from 1500 S&P companies from 2000 to 2012, the findings indicate that a higher percentage of retired independent directors on the board is correlated with expanded board bandwidth.

A study by Sharmar and Kaur (2021) looked at the connection between corporate governance and accounting conservatism in the Indian banking industry. The findings

indicate that banks with stronger governance adhere to more stringent accounting standards. In the context of Malaysia, Syakirra and Chia (2023) conducted research to look at a conceptual framework between board size and business value. A thorough investigation into the relationship between corporate governance and firm value was carried out. The findings indicate that there is a non-monotonic link between the firm value of Malaysian listed businesses and the size of the board.

A study by Puni and Anlesinya (2020) found that board size and other CG mechanisms have a positive impact on financial performance. The study looked at the influence of corporate governance mechanisms recommended by the Securities and Exchange Commission (SEC) of Ghana on firm performance. The study considered listed Ghanaian companies from 2006-2018.

Pekovic and Vogt (2021) developed a model to analyse the moderating effects of CG characteristics (board size, ownership structure board gender diversity and board independence) on the CSR firm's FP link. The findings indicate that board size and gender diversity moderate the CSR-firm's FP link positively while there was no support that board independence moderates the CSR-firm's FP.

On the other hand, Khaoula and Moez (2019) conducted a study to investigate the moderating role of the board of directors on the relationship between tax planning and firm value. Emphasis was placed on 105 European firms between the period of 2005-2012. The findings indicate that the relationship between tax planning and firm value is significantly and negatively impacted by board independence, board diversity, and the CEO's duality functions.

Huu Nguyen, Thuy Doan and Ha Nguyen (2020) carried out a study to investigate the correlation between CG, including board characteristics and ownership structure with agency cost, in the period between 2013 and 2018. The findings indicate a negative correlation between agency cost and board independence and size.

Furthermore, there is a study undertaken by Nyarko, Kong and Naiping (2017), on the topic, "CG and performance of firms: empirical evidence from the banking sector of Ghana". In the study, an investigation of the relationship between CG and the performance of banks in Ghana in terms of their FP was focused. Primary and secondary

data were collected for analysis through panel data methodology. Structured self-administered questionnaires were used to collect the primary data while financial statements of firms from the period 2009 to 2015 were used for secondary data. Consideration was given to CG measures like board size, long-serving CEOs, size of audit committee, audit committee independence, foreign ownership, annual general meeting and dividend policy and their impact on the firm's performance. The findings show that large board size, long-serving CEOs, size of audit committee, audit committee independence, foreign ownership, annual general meeting and dividend policy are positively related and associated with the financial performance of banks in Ghana.

Existing studies that have been carried out by various researchers as discussed under the empirical review have been on corporate measures and OPR and FP which are in line with this study. The results of each of the studies show CG measures have a positive impact and association with OPR and FP, even though some other studies have shown a negative association. It is believed that the results of this study would either confirm the findings of the studies that have been reviewed or contradict the findings. Whatever the situation, this study, as has already been stated, is important to add to the literature on corporate governance showcasing the importance of it in terms of ensuring transparent and accountable management of firms in the interest of all stakeholders.

## CHAPTER THREE

### THEORETICAL AND CONCEPTUAL FRAMEWORK

#### 3.1 Introduction to the Underpinning Theories

Agency theory and information asymmetry theories are the main theories used in this study; vis-à-vis concepts of the study, which are board-structure and ownership structure of companies. The relationship between management, acting as an agent, and shareholders, acting as the principal, is examined under agency theory. In the said relationship, the principal and the agent do not always share the same interests. Managers most of the time, have an incentive to act for their own benefit instead of maximizing the wealth of the shareholders (Iza and Holly 2022). As a result, agency cost is incurred. To overcome the agency problem, Iza and Holly (2022), assert that Fama and Jensen (1983), proposed an increase of monitoring on management through the board of directors, whilst Jensen and Meckling (1976) advocated an increase in the alignment of management and shareholders' interests. The problem of monitoring arises whereby management holds sensitive information from the board to their advantage (information asymmetry).

The study is on corporate governance as a mitigating mechanism which is mainly the board structure variables (board size, independent directors on the board, board meetings, and financial experts on the board) and their relationship with OPR and FP. Hence, the best theories to explain and synthesize the relationship between the concepts are agency and information asymmetry theories.

Tegan (2022) defines the theoretical framework as the framework that analyzes pertinent theories in the literature review, specifies important concepts in research, and indicates linkages between them. Hence, going by the description of the theoretical framework in this study by Tegan (2022), the theoretical framework concentrates on the key concepts which are CG and OPR as well as FP. The theories – Agency and Information Asymmetry which underpin the study are also discussed and their relationships to key concepts are explained. A diagrammatical framework is produced and the relationships between the variables are also explained.

## 3.2 THEORETICAL REVIEW

Some theories underpin this study, and therefore, the researcher at this point considers the theoretical review as a part of the whole theoretical framework. The research is discussed on the premises of two theories, which are agency and information asymmetry theories.

**3.2.1 Agency Theory Defined:** Jensen and Meckling (1976) are the proponents of agency theory. According to them, agency theory explains how a company's governance is predicated on conflicts of interest between its managers, key debt financing providers, and shareholders who are the company's owners. According to a study by Gwala and Mashau (2023), agency theory is now regarded as one of the most traditional ideas in the literature on management and economics. Gwala and Mashau (2023) further state that the theory also addresses and attempts to resolve the conflict resulting from the owners' and agents' separate powers when it comes to managing a company's operations on behalf of principals.

**3.2.2 Types of Agency Conflict:** The conflict of interest that arises from the relationship between the principal and the agent forms the basis of Jensen and Meckling's agency theory. Therefore, the types of these conflicts as presented by Jensen and Meckling and other researchers are briefly discussed:

**Principal–Agent Conflict:** The problem of agency between owners and managers in the organizations due to the separation of ownership from control has been found since the birth of large corporations (Panda and Leepsa 2017). The owners assign the task to the managers to manage the firm with the hope that managers will work for the benefit of the owners. However, managers are more interested in their compensation maximization. The argument for the agent's self-satisfying behaviour is based on the rationality of human behaviour (Sen, 1987; Williamson, 1985; as quoted in Panda and Leepsa 2017), which contends that people act logically to achieve their own goals. Thus, the conflict known as "principal-agent conflict" arises from the misalignment of interests

between the principal and the agent as well as from inadequate supervision brought on by the scattered ownership structure. Panda and Leepsa (2017) further state that managers who utilize company property for personal gain to enhance their own well-being are not properly monitored by owners in large firms due to the separation of ownership and control.

**Principal–Principal Conflict:** with this type of agency conflict, Panda and Leepsa (2017), assert the conflict of interest between the major and minor owners is the fundamental premise of this kind of agency dilemma. A major owner is a person or group of people who own the majority of a company's shares, whereas minor owners are those who own a relatively small percentage of the company's shares. The interests of the smaller shareholders are harmed by the majority owners' or block holders' greater voting power and ability to make decisions that serve their interests (Fama & Jensen, 1983 as quoted by Panda and Leepsa 2017). Panda and Leepsa (2017) add that when ownership is concentrated in the hands of a few people or family owners, minority shareholders may find it challenging to defend their money or interests. This type of agency problem is prevalent in such nations or companies. Panda and Leepsa (2017), because majority shareholders have more voting rights than minority owners, they often make decisions for the company and the minority shareholders just follow them.

**Principal–Creditor Problem:** The projects that are undertaken and the funding decisions made by the shareholders give rise to the conflict between the owners and creditors. (Damodaran, 1997 as cited in the study by Panda and Leepsa 2017). Since they anticipate a larger return, the stockholders attempt to invest in riskier enterprises. The project's risk increases the cost of financing and lowers the value of the outstanding debt, which has an impact on the creditors. If the project is successful, the owners will reap enormous profits, but the creditors' interest will be restricted because they will only be paid a set interest rate. However, as noted by Panda and Leepsa (2017), if the project fails, the creditors will be required to bear a portion of the losses, and this issue typically arises in these kinds of situations. Panda and Leepsa (2017) the conflict arise from disparate risk preferences. Divergent risk perceptions among the stakeholders in these organizations pose challenges to reconciling their decisions. Between the

owners and managers as well as between the owners and creditors, this conflict emerges.

**3.2.3 Agency Costs:** Agency costs, according to Zogning (2022), happen when mistrust develops between two parties. Thus, the principal cannot ensure that the agent makes the best judgments on his behalf at no expense to him. Costs for monitoring and obligations must be borne by both the principal and the agent. As a result of the conflicts of interest between shareholders and business managers, agency costs exist and can be perceived as a value loss to shareholders.

**Monitoring Costs:** Zogning (2022), is the cost that is incurred by the principal to restrain the agent's opportunistic conduct, while incentive costs are those incurred by the principal to steer the agent's behaviour in the right direction. The cost might eventually come from removing managers, as well as from conducting audits and creating executive compensation contracts. Panda and Leepsa (2017), on their part, state that monitoring includes the expenses related to keeping an eye on and evaluating an agent's performance within the company. The payments for observing, compensating, and assessing the agent's behaviour are among the different expenses included in the monitoring cost. Since boards are appointed by owners to oversee the managers, board maintenance expenses are also included in the cost of oversight. The cost of hiring, training, and development for the executives is also included in the monitoring cost. In the early stages, the shareholders bear these costs; however, as time goes on, the management bears them as well, since they are paid to do so (Fama and Jensen, 1983 as quoted in Panda and Leepsa 2017).

**Bonding Costs:** Zogning (2022); asserts that these costs might have been incurred by the agent as a motivational cost to gain the principal's trust. The owners keep a watchful eye on the managers, forcing them to act in the owners' best interests; if not, the managers must pay for the monitoring. In essence, bonding costs are the expenses incurred to establish and run the business in accordance with its stated system (Jensen and Meckling, 1976 as cited by Panda and Leepsa 2017). When managers of a company adhere to their contractual duties that restrict their activities, the bonding expenses are

attributed to them. There is an inverse relationship between bonding and monitoring expenses: while monitoring costs decrease, bonding costs rise.

**Residual Loss:** Zogning (2022) claims that this type of cost is equivalent to the principal's loss of utility as a result of a conflict of interest with the agent, such as the cost incurred as a result of the agent unfavourably managing the principal's interests. As a result, agency losses brought on by conflicts of interest still exist. We refer to these as a residual loss. They are caused by the fact that properly enforcing principal-agent contracts would be significantly more expensive than it would be advantageous. Fully contracting for every condition of nature is not feasible since managerial activities are not observable ex-ante. This leads to an optimal level of residual loss, which might be the consequence of balancing the enforcement of contractual mechanisms intended to lessen agency difficulties against unduly restricting management. Additionally, according to Panda and Leepsa (2017), residual loss is the outcome of a conflict of interest between managers and shareholders, which leads to a different issue in which the managers' decisions do not fully optimize the owners' value. These inefficient managerial decisions in the view of Panda and Leepsa, lead to a loss known as the residual loss.

### **3.2.4 Why the Agency Theory?**

In this study, the management of banks, (agent) has interests different from the owners and depositors (principal). The divergence in interest is what Jensen and Meckling (1976), termed it conflict of interest. The problem of agency conflict can be resolved in some ways. However, for this study, reliance is made on the board of directors monitoring CEOs to improve performance. The agency theory is appropriate in the analysis of the study as according to Allen and Gale (2001), board monitoring helps in knowing the extent to which monitoring of CEOs can avert operational risk and therefore impacts positively on financial performance.

**3.2.5 Information Asymmetry Theory:** According to Marcel, Ortan, and Otgon (2010), the initial attempt to define the asymmetry of information in corporate governance theory reveals that people involved in running streams between stakeholders and the company

possess information in different ways, under which people make different decisions and behave differently, which may have an impact on the performance of companies. Marcel and colleagues (2010) explicate that the theory of information asymmetry places significance on the information possessed by individuals and the decisions they can make based on that knowledge.

Akerlof (1970), as quoted in Gupta (2021), there is an information asymmetry between buyers and sellers of used cars, or "lemons," which causes the market to implode. As a result, the buyer is unaware of the car's actual value while the seller is. As a result, the customer is willing to pay an average price that falls somewhere between that of a lemon and the cost of a luxury vehicle. According to Gupta (2021), sellers would only choose to hold lemons and sell them since doing so would be profitable on its own. As a result, all of the expensive automobiles will be forced off the market, leaving just lemons, which will cause the cars' prices to drop even further as word spreads. Thus, an adverse selection issue is brought about by the ignorant buyer's pricing, which forces high-quality vehicles off the market.

As has been said, the study includes information asymmetry, which is one of the tenets of Akerlof's 1970 lemon theory. Information asymmetry, according to Tupangiu (2017), describes a relationship in which one agent has information while another does not. In addition, Cai et al. (2015) state that to address information asymmetry, enterprises and organizations have three corporate governance methods at their disposal, one of which is the board of directors' oversight of CEOs. According to them, the intensity of the monitoring comes at a cost. Concerning the relevance of this theory to the analysis of the study, just like the agency theory, it will be done in light of the extent to which the banks use monitoring to secure the needed information from CEOs to avert operational risk and to improve the financial performance thereof.

### 3.2.6 Types of Information Asymmetry

**Private information:** When one person has access to privileged or confidential information, information asymmetry is most commonly shown to exist. This information might come from specialized assets, be confidential, be shielded by law, or not be needed for reporting (e.g., Ecker, van Triest, and Williams, 2013) or expertise (e.g., Gomez-Mejia, Welbourne, and Wiseman, 2000) as cited by Berg, Ketchen, Orlandi, Heugens and Boyd (2018). Berg, et.al assert that Connelly and colleagues highlight that “because some information is private, information asymmetries arise between those who hold that information and those who could potentially make better decisions if they had it” (Connelly, Certo, Ireland, & Reutzel, 2011)

**Different Information:** As cited by Berg et.al (2018), Stiglitz (2002) information asymmetry can be simply defined as the state in which "different people know different things." Schmidt and Keil (2013) elaborated on this depiction by stating that “information is not homogeneously distributed in the market . . . nor is access to relevant information open to all firms in the market.” Similarly, Semadeni and Anderson (2010) stress that “high information asymmetry arises when market actors possess different and unequal stores of market knowledge.” However, these asymmetries are emphasized in the strategic decision-making process because each member of the team contributes unique viewpoints, specialized knowledge, beliefs, priorities, and goals to the table, which might be hard for other team members to be aware of (Berg et.al 2018).

**Information Asymmetry as the Lack of Perfect Information:** This application depicts how participants in information markets navigate their lack of perfect information about one another (Berg et al 2018). Stigler (1961) as cited in Berg et al provided a seminal insight by comparing informationally disadvantaged buyers and advantaged sellers with respect to their methods of gathering and sharing information. Akerlof’s (1970), as cited in Berg et al, formulation of this tension in asset markets explained how seller and buyer behaviour would be impacted by incomplete and asymmetrically disseminated information among participants in a transaction.

**Information Impactedness:** Williamson (1975), as cited in Berg et al, portrayed information asymmetry in his theory of "organizational failures" as a cause of transaction

costs. According to Williamson, information asymmetries between possible transaction partners increase the search, monitoring, and bonding costs of a transaction by creating "information impactedness." This is because achieving informational parity is expensive and people tend to act opportunistically when they have the opportunity. Since it is expensive for parties with less knowledge to attain information parity, some businesses may take advantage of better knowledge for their gain, driving out sincere businesses from the market.

### **3.2.7 Resolutions to Asymmetry**

As Berg et al (2018) observe, there are five primary means to reduce information asymmetry.

**Incentives to Gather and Disclose Information:** According to some authors, those looking for a mate who possesses the "right" amount of aptitude and willingness (Madhok and Tallman, 1998; as cited in Berg et al., 2018) tend to decrease the drawbacks of information by expanding the range of information that is accessible (Jacobides and Croson, 2001 also cited in Berg et al., 2018). Others propose that learning from current partners can be a useful method of obtaining information (Gerwin and Ferris, 2004; Zaheer et al., 2010, as cited in Berg et al., 2018). This strategy involves "weeding out uncooperative exchange partners" and focusing on those that promote learning between partners (Lumineau and Oxley, 2012, as cited in Berg et al., 2018).

**Pre-commitment:** Pre-commitment is another technique for resolving information asymmetry. In this method, a focused actor shows another player that it is sincere and serious about its goals, for instance by investing in new infrastructure (Smit, 2003; as cited in Berg et al., 2018) or by expressing interest in a certain kind of reward (John and John, 1993; Ryan and Wiggins, 2001, 2002; also, as cited in Berg et al., 2018). Pre-commitment is essential in certain situations, such as debt financing. Berg et al., (2018) assert companies looking for funding frequently need to pay a credit premium to the debt providers since information asymmetry makes suppliers more doubtful about the calibre and long-term goals of a focal organization.

Thus, larger uncertainty, suggests that the debt provider sees more risk and will consequently seek a higher credit premium. Berg and colleagues maintain that companies looking for debt financing are therefore expected to raise the bond's coupon rate in order to make up for the increased risk to the loan providers, leaving money on the table by overpaying for their debt. Berg et al., 2018 go on to say that a company can decrease overpayment through pre-commitment by emphasizing their accountability for previous investments as well as by demonstrating to potential loan investors the kind of future actions they plan to take. As a result, as debt investors gain greater knowledge regarding the firm's sincerity, the information asymmetry gap decreases.

**Monitoring and Rewards:** Monitoring systems help to decrease private information by confirming the actions of agents, preventing them from misleading their principals. Monitoring is typically cast in terms of board leadership structure (Westphal, 1999 as cited in Berg et al., 2018) and composition (W. G. Sanders and Carpenter, 1998 as cited in Berg et al., 2018), regulatory bodies (Ramamurti, 2000 as cited in Berg et al., 2018), the media (Bednar, 2012 as cited in Berg et al., 2018), and advisors (Westphal, 1999 as cited in Berg et al., 2018). To avoid hiding unfavourable organizational outcomes, for instance, shareholders may keep an eye on officers' disclosures (Abrahamson and Park, 1994 as cited in Berg et al., 2018).

The effectiveness of monitoring is, however, constrained Gomez-Mejia and Balkin (1992), as cited in Berg et al., (2019), note that “when an agent has high autonomy, independence, and highly specialized information, monitoring becomes very difficult and expensive, and principals will rely on incentives to reward agents for appropriate outcomes.” Outcome-based incentives attempt to “co-align the preferences of agents with those of the principal, because the rewards for both depend on the same actions and, therefore, the conflicts of self-interest between principal and agent are reduced” (Eisenhardt, 1989 as cited in Berg et al., 2018).

Rewards are one way to lessen the impact of information asymmetry; agents receive incentives when they operate in a way that meets the goals that their superiors have established (Jensen, 1983, as cited in Berg et al., 2018). Stock options (W. G. Sanders and Carpenter, 2003 as cited in Berg et al., 2018), piece-rate contracts (Sharma, 1997 as cited in Berg et al., 2018), flexible benefit plans (Barringer and Milkovich, 1998 as cited in

Berg et al., 2018), and CEO compensation contracts that are contingent on performance (Bloom and Milkovich, 1998 as cited in Berg et al., 2018) are a few examples of outcome-based incentives.

**Convey Information via Actions:** according to Berg et al., (2018), information asymmetry can also be lessened, by taking steps that give external parties access to information. Previous studies, according to Berg et al. (2018), have demonstrated how information signals might lessen information asymmetries connected to unobservable qualities. (e.g., Akerlof, 1970; Spence, 1973), which encompasses the decisions made by managers and their companies. For instance, using reputation to convey messages can reveal details about the focal firm or the companies the focal firm shares ties with.

The majority of Initial Public Offer (IPO) companies aim to assemble a group of esteemed stakeholders who attest to their calibre, such as esteemed venture capitalists, esteemed underwriters, esteemed auditors, and prominent directors (Plummer et al., 2016 as cited in Berg et al., 2018). An authentic indicator indicating to potential investors that the main company has significant worth and promising future possibilities is the relationship between the IPO firm and prominent players.

**Information Intermediaries:** According to Berg et al. (2018), businesses can lessen information asymmetries by using information intermediates. Healy and Palepu (2001) as cited in Berg et al., (2018), identify organizations that function as third parties, interpreting business actions and offering professional opinions on the significance of the observed behaviours. A well-known middleman that stands in between investors and management is the security analyst, who is "in a position to reduce the asymmetry of information between these two groups of actors" (Feldman et al., 2014, as cited in Berg et al., 2018). These authors also note that the fact that analysts are product- and industry-specific specialists further strengthens their credibility as information providers.

### **3.3 CORPORATE GOVERNANCE**

Corporate governance, according to Ramalho (2016), is the governing body's application of moral and capable leadership toward the development of a moral culture, strong performance, efficient control, and legitimacy. Also, Nerantzidis et al (2012) as cited in Agyemang, Ayamba, Tawiah and Twum (2019), define it as "the totality of the institutional

and organizational mechanisms, and the corresponding decision-making, intervention and control rights, which serve to resolve conflicts of interest between the various groups which have a stake in a firm and either in isolation or in their interaction, determine how important decisions are taken in a firm, and ultimately also determine which decisions are taken”.

Lobez (2010), as cited in Nsaibi, Abidi and Rajhi (2020), defines corporate governance in terms of banking governance and asserts that it is a preventive element of banking risk. Kaur (2017), in his research, defines corporate governance as methods of aligning managers' and investors' interests and making sure businesses are operated for the advantage of investors. According to Aldrige and Sutojo (2005), the Organisation for Economic Cooperation and Development (OECD) defines corporate governance as the framework that governs the direction and management of businesses.

In reviewing the definitions of CG as cited above, it is observed that Nerantzidis et al, in Agyemang et.al, (2019), corporate governance refers to all the procedures and associated decision-making, intervention, and control rights that are utilized to address conflicts of interest across different stakeholder groups. Ramalho (2016) on his part, corporate governance aims to create good performance, legitimacy, an ethical culture, and efficient control through both ethics and the leadership of governing bodies. OECD cited in Adrige and Sutojo (2005), sees corporate governance as the systems that regulate and guide businesses. However, according to Lobez (2010), who was quoted by Nsaibi et al. (2020), corporate governance is a preventive measure of banking risk when considered in the context of banking governance. Though Nerantzidis *et. al* definition is lengthy and different from that of the OECD, looking at it critically, they all seem to be talking about how firms' decisions are scrutinized to ensure that various stakeholders' interests are satisfied and risks to them are curtailed to a reasonable level.

Nerantzidis et al in Agyemang et al (2019), Kaur (2017) and Lobez (2010), cited in Nsaibi et al (2020) definitions are pertinent to the aims of this study, given the emphasis their definitions place on corporate governance as mechanisms used to resolve conflict of interest among stakeholder groups and also as a preventive element of banking risk.

### **3.3.1 CORPORATE GOVERNANCE MECHANISMS**

#### **Board Size**

Nsaibi, Abidi and Rajhi (2020), define board size as the total number of directors on the board. According to Nsaibi et. al, some studies corroborate their like; studies by Pathan (2009) and Pathan and Skully (2010), which state that the average size of a board in the banking sector is 13.

#### **Institutional Directors**

Lopez-Hurriaga, Garcia-Meca and Tejerina-Gaite (2014) define institutional directors as being the proportion of directors appointed by institutional investors.

#### **Independent Directors**

According to Neifar and Jarboui (2018), the presence of external administrators who work to enhance their reputation and the worth of their human capital by carrying out an efficient and impartial check over the self-serving actions of leaders is indicative of independent directors.

#### **Board Meetings**

Ntim and Osei (2011) state that board meetings are defined as the number of times a company's board convenes in a given year. According to them, the King II study recommends that corporate boards convene at least four times annually voluntarily.

#### **Financial Experts**

Adams and Jiang (2020) explain that financial are highly skilled accountants who are widely present on the boards of businesses in many industries, including the financial services sector.

## **CEO Duality**

According to Vinlila and Duca (2013), as cited in Neifar and Jarboui (2018), they assert that CEO duality describes a scenario in which one individual holds the dual roles of CEO and chairman concurrently. This deviates from the agency theory tenet since the combination restricts the board of directors' ability to supervise.

## **CEO Shareholding**

Iza and Holly (2022); expound CEO share ownership as the percentage of outstanding stock held by the CEO at the end of the fiscal year. Thus, as part of executive variable compensation, CEOs are often given the chance to own a corporation's share in order to align their interest with shareholders in fulfilment of agency theory.

### **3.4 OPERATIONAL RISK**

Sapovadia (2018) defines operational risk as the possibility of suffering a loss as a result of insufficient or unsuccessful internal systems, people, processes, outside events, or reputational risk. Segal (2023) describes operational risk as being a compilation of the risks and uncertainties a corporation encounters while attempting to carry out its regular business operations in a certain sector or field. There are various categories of operational risk of which Segal (2023), has outlined 7 of them as being; internal fraud, external fraud, technological failures, process execution, safety, natural disasters and business practice. However, for this study, operational risk categories are looked at in the following:

#### **Internal Fraud**

De-Jongh and Vuuren (2012) define internal fraud as losses resulting from actions meant to steal, misappropriate, or evade rules, laws, or corporate policies that affect at least one internal party. For example, money that bank finance officers have embezzled.

#### **External Fraud**

De-Jongh and Vuuren (2012) on external fraud defines it as damages resulting from

actions taken by an outside party to steal property, commit fraud, or evade the law. For example, credit card theft and its subsequent use.

### **IT Disruptions**

On IT disruptions, De-Jongh and Vuuren (2012) define it as a systems failure that causes significant losses and can have a big effect on the specific institution or perhaps the financial system. For instance, according to McPhaid (2003), referenced in De-Jongh and Vurren (2012), there are some possible operational risk issues with the Canadian banking system, including the inability to meet time-sensitive payment deadlines and payment system disruptions and dislocations that may cause serious liquidity shortages in financial institutions.

### **Principal-agent Risk**

De-Jongh and Vurren (2012) describe principal-agent risk as an operational risk category that results from agents acting on behalf of the organization but pursuing their interests rather than the best interests of the owners. For example, according to Lang and Jagtiani (2010) as cited in De- Jongh and Vuuren (2012) principal-agent risk was a major factor in the financial crisis.

### **Government Regulation**

This is a loss resulting from a change in regulations or legislation which can increase costs of operations or even restrict a company from doing business.

### **Declining Profit**

This refers to an internal operational risk where actual profit turns to decline from budgeted profit.

### **3.5 FINANCIAL PERFORMANCE**

The concept of FP is defined by Bhandari (2018), as the analysis of financial statements to identify financial strengths and weaknesses by establishing appropriate relationships among the figures of income statement and balance sheet. Diez-Busto, San-Martin and Perez (2022), define FP as; "Financial Performance is a quantitative measure of how well a company uses its business assets and generates revenues. It refers to the company's overall financial health over a given period". Teixeira, Rafael, and Pardal (2016), on their part, define financial performance as the capacity to create profitability superior to the cost of capital and to guarantee the obligations with the investors.

The researcher, on his part, defines FP as a measure of how well a company's assets have been used to create value; and in this study, FP is measured in ROA and ROE.

#### **Return on Assets**

According to Kijkasiwat, Hussain, and Mumtaz (2022) return on assets is the ratio of earnings to total assets before interest and taxes. According to Isidro and Sobral (2015), referenced in Kijkasiwat et al. (2022), ROA measures how well a company uses its inventive resource to turn a profit.

#### **Return on Equity**

According to Nyamongo and Temesgen (2013), returns on equity (ROE) are defined as earnings produced by shareholders' equity throughout a single fiscal year. They further restate that the corporate metric used to assess a bank's financial health and management success is the team's capacity to strike a balance between profitability, asset management, and financial leverage.

### **3.6 THE RELATIONSHIP BETWEEN THE THEORIES AND CONCEPTS**

#### **Board Size, Operational Risk and Agency Theory**

Haider and Fang (2016), state that there is a negative correlation between operational risk and a large board since a larger board can access more resources from the outside world, which lowers uncertainty. Large boards, however, have agency costs associated

with them because the principal bears the cost of monitoring since each member of the board is paid.

### **Institutional Directors, Operational Risk and Agency Theory**

A study by the European Commission (EUCGF, 2009) found that institutional directors on the board favour variable pay schemes which result in excessive risk-taking and ever-increasing levels of remuneration. Thus, the analysis finds a positive correlation between operational risk and the presence of institutional directors on the board. Another aspect of agency theory is the use of variable remuneration to somewhat align the agent's interests with those of the principal in order to resolve the conflict of interest between the two parties. However, this rather leads to the agent's appetite for risk in order to receive more rewards which also amount to agency cost to the principal.

### **Independent Directors, Operational Risk and Information Asymmetry**

Neifar and Jarboui (2018) found a favourable correlation between operational risk disclosure and the independence of directors. However, since the independent directors are mostly external directors, there is a problem of information asymmetry where they might not have full information on the happenings in the firm. The only solution to this is effective monitoring which results in monitoring cost.

### **CEO Duality, Operational Risk, Performance and Agency Theory**

In their study, Neifar and Jarboui (2018) discovered a negative correlation between risk disclosure and CEO duality. Murando (2006), also on CEO duality and firm performance found that CEO duality is positively and significantly associated with poor performance. Ko, Lee and Anandarajan (2019), however, in their study discovered that although the CEO duality coefficient is negative, it is not statistically significant. However, when all four surrogates of corporate governance used in the study are put together, there is a significant influence on operational risk incidents. The negative relationship established by empirical is supported by agency theory in a study by Yu (2022), which says agency theory believes that CEO duality perpetuates CEO entrenchment and erodes board control. Therefore, CEO duality has negative implications for firm performance.

### **CEO Shareholding, Operational Risk, Agency Theory and Information Asymmetry**

Iza and Holly (2022) in their study to establish a relationship between CEO compensation variability and the risk-taking of firms show that there is no positive relationship between variable pay (share option) and any risk measure. Thus, the research finds a statistically significant negative relationship between variable pay compensation and the riskiness of corporate financing choices. Agency theory supports CEO shareholding to resolve conflict of interest in order to align the CEO's interest with that of Shareholders. However, it appears empirical studies (Waldenström 2009; Dong et al., 2010) as cited in Iza and Holly (2022) show it rather motivates CEOs to be risk-takers. In the case of information asymmetry, a study by Bakarat, Chernobai and Wahrenburg (2014), found that information asymmetry increases more strongly after operational risk events announcements when firms have lower equity incentives of executive directors and for that matter CEO. Thus, the quantum of shares held by the CEO determines the information it is ready to share with stakeholders.

### **Board Meetings, Firm Performance and Agency Theory**

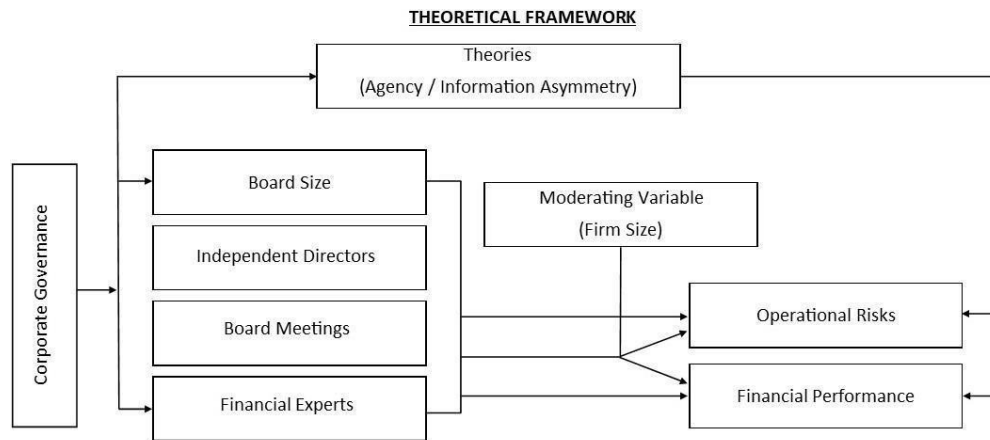
Ntim and Osei (2011) in their study discovered a statistically significant and favourable correlation between the frequency of board meetings held by corporations and their overall performance. Frequent board meetings mean effective monitoring and that has agency cost in terms of monitoring cost. Nonetheless, it aids in closing the knowledge asymmetry gap that separates agents and principals.

### **Financial Expert Directors, Firm Performance and Agency Theory**

Adams and Jiang (2020) conducted a study to investigate the association between six performance metrics and board-level qualified financial competence. The findings indicate that financial specialists have a positive impact on insurers' performance results. The financial experts on the board are able to save the firm costs in the sense that they ensure financial statements are well prepared to meet the expectations of external auditors and therefore bargain to reduce audit fees. This is in satisfaction of agency theory where the board can save the shareholders costs and also to ensure that the needed

information to ensure transparency is achieved.

Figure 3



SOURCE: Researcher 2023

The framework portrays the relationship between CG as an independent variable (board size, independent directors, board meetings and financial experts) and OPR (dependent variable) and also financial performance (dependent variable) as well as firm size (moderating variable) and the theories underpinning the study. The agency and asymmetry theories used in this study help to explain the relationship between CG mechanisms and OPR in the sense that if the four surrogates of CG being used in the study will have a significant impact on OPR, it will be as a result of strong monitoring from the board of directors and in so doing would the FP of the banks be impacted positively. The moderating variable: firm size also tries to establish the relationship between the independent variables and the dependent variables taking into consideration the operational depth, of the banks that are studied in the research thesis.

## CHAPTER FOUR METHODOLOGY

### 4.1 Introduction

The chapter presents the research methodology used for this study and how it has guided data collection, analysis and development of theory. Firstly, essential background and fundamental guidelines common in different approaches to empirical research design are provided. The subsequent three sections describe the data collection phases for this study, which consisted of financial reports of 14 banks in the Ghanaian banking sector of thirteen years from 2010-2022. The analysis approach for the empirical data is explained in the chapter's conclusion.

### 4.2 Research Paradigm

A research paradigm is a research philosophy that underpins research. Chalmers (1982), as quoted in Khaldi (2017), affirmed that the research paradigm is composed of general theoretical assumptions, regulations, and application methodologies that members of a specific scientific community adopt. Wills (2007), as quoted in Khaldi (2017), also states that a research paradigm is a comprehensive worldview, belief system, or framework that directs practice and research in a discipline.

According to Denzin (2005), as cited in Qadir (2020), the research paradigm comprises ontology, epistemology and methodology. Ontology, according to Qadir (2020), is a branch of philosophy that discusses the structure of reality, which he outlines to be objectivism and subjectivism. Regarding epistemology, Qadir (2020) asserts that it is a branch of philosophy discussing knowledge (truth). He goes on to say that epistemology is categorized into objectivism and constructionism.

Qadir (2020) explains objectivism as knowledge that is external and independent of consciousness and experience. Thus, it resides within an investigated object. Qadir, however, on constructionism explains knowledge is not independent of mind but it emerges from the interaction between the mind and the object.

Based on the aforementioned paradigm and further filtering it down to ontology and epistemology, this study is ontologically and epistemologically objectivist/positivist and supports the concept that reality is single, independent of the mind and inherent in observed objects. The study observed the data of selected banks to establish the relationship that exists amongst CG mechanisms, OPR and FP of the banks as well as the impact CG mechanisms have on OPR and FP. Therefore, this study is quantitative research since the study puts forward a hypothesis based on existing research literature and data in terms of panel data of banks and decisions made as to whether to accept or reject the hypothesis.

#### **4.3 Research Design**

Descriptive research is the type of research design employed in this study. Solanki (2022) describes descriptive research design as one that is used in a research study when the objective is to describe the characteristics of a phenomenon or population. According to Solanki (2022), descriptive research design provides and describes the critical features and information about the target population or environment. Solanki (2022), further asserts that descriptive research is divided into cross-sectional research and longitudinal research.

Longitudinal research which sits well with this study, according to Solanki (2022), is ideal when a sample (or group of samples) of a large population is repeatedly measured over a period. Solanki (2022), further states that generally, in longitudinal research, panel methods and panel data are used. Panel is a group of entities being interviewed again and again and panel data represents the repeated measurements (Solanki 2022). Hence, in this study, the panel is the sampled 14 banks that are used and their annual financial reports of a 13-year period that provides the information which represents the panel data measured.

### **4.3.1 Panel Data**

Panel data is the data used in this study. Panel data, according to Berrington and Sturgis (2006), are data that include repeated measurements of the same variable over time, derived from the same set of units. Finkel, (1995), panel data are sets of data collected from the same people or units at multiple time intervals. The study employed panel data rather than cross-sectional data because it aimed to conclude causality rather than merely identify patterns of connection across variables. The use of panel data analysis was also chosen for this study because, unlike static cross-sectional analyses, it incorporates change into the design, allowing for the direct measurement of specific changes in a collection of variables. In contrast to longitudinal data, which necessitates the collection of information on distinct variables throughout time, panel data permits the measurement of the same variables at multiple points in time. The use of panel data was chosen for this study because, as mentioned above, they offer more leverage on causal ordering difficulties than static cross-sectional data.

To achieve the aim of the study, reliance was placed on panel data of operational risk that have been recorded in 14 banks during 2010-2022. Therefore, the study considered some operational risk data recorded in 14 banks during 2010-2022 to establish a relationship between operational risk and four governance indicators: Board size, independent directors, Board meetings and the presence of financial experts on the board. Also, control variables like the age of the firm and firm growth were incorporated into the relationship to establish their influence on the connection between operational risk, financial performance and the governance structure variables. The relationship was further tested using firm size as a moderating variable. Hence, individual changes that were observed in any of the four governance indicators listed were measured in relation to operational risk and financial performance to establish the relationship among them.

### **4.4 Research Approach**

According to Solanki (2022), a research approach is a set of guidelines and plans that determine the entire course of the research. Solanki (2022) goes on to say that the research approach determines the techniques for gathering, analyzing, and interpreting

data. Solanki (2022), states that research approaches are of two types: qualitative and quantitative. To achieve the outcomes of the research activity, this study uses a quantitative research methodology that makes use of statistical techniques and other quantitative approaches for hypothesis testing. Under the quantitative approach, an inferential approach is also used whereby the results of the sample population (14 banks) are linked to the population at large (the rest of the banks that were not used in the study).

#### 4.5 Operationalization of the Variables

**Table 4.1** contains a summary of variables, their meanings and measurement. The variables include two dependent variables, four independent variables two control variables and one moderating variable.

**Table 4.1 Model Description**

<b>VARIABLES</b>	<b>MEANING</b>	<b>MEASUREMENT</b>
<b>Independent Variables</b>		
BDZ	Board size	Number of total board members
IND	Independent directors on the board	Ratio of independent directors on the board
BDM	Board meetings	Number of times of board meetings in a year
FEX	Financial experts on the board	Ratio of financial experts on the board

<b>Dependents Variables</b>		
OPR	Operational Risk (CIR)	Operational cost (minus bad and doubtful debt)/Net interest Income (including non-interest income of the bank)
ROA	Return on Assets	Net profit/total assets
ROE	Return on Equity	Net profit/total equity
<b>Moderator</b>		
FMZ	Firm size	Natural logarithm of total asset
<b>Control Variables</b>		
AGF	Age of the firm	The number of years since the firm was established to operate in Ghana to the data period.
FGRTH	Firm growth	Current firm size minus previous firm size/Previous firm size
<b>Parameters</b>		
A	Intercept or constant	
B	Slope or the coefficient of X (independent variable)	
$\epsilon$	Residual (error) in predicting the value of Y(dependent variable)	
it	The subscript for time series and cross-section (used in panel data)	

**Source:** Researcher-generated data

#### 4.6 Population

Shukla (2008) defines population as the collection or grouping of all the units to whom the research findings are to be applied. Stated differently, a population is a collection of all the units that share the variable characteristic that is being studied and for which research findings can be applied generally. Therefore, in this study, the population was considered to be all the banks in the Ghanaian banking sector.

#### **4.6.1 Target Population**

Bartlett et al., (2001) and Creswell and Zhang (2009) as quoted in Asiamah, Mensah and Oteng-Abayie (2017) assert that a population target is defined as the group of people or participants who have particular characteristics that are relevant and of interest. The target population is typically established in order to set it apart from the overall population, particularly when some units within the general population fail to meet the goals of the study and yield the anticipated outcomes. The target population of the study were the 23 universal banks in Ghana that have been in existence from 2010-2022.

#### **4.7 Sample and Sample Size**

A sample is a group of individuals or occurrences, for instance, from or regarding which information will be genuinely collected. The sample size is a term used in research to define the number of subjects included in a sample. The sample for this study consisted of 14 universal banks. The 14 universal banks that were sampled for the study were arrived at based on the researcher using the inclusion and exclusion criteria.

##### **4.7.1 Inclusion and Exclusion Criteria**

Nikolopoulou (2022) defines inclusion and exclusion criteria as being the criteria used to determine which members of the target population can or cannot participate in a research study. The researcher going by Nikolopoulou's definition decided on the following as the inclusion and exclusion criteria:

Inclusion Criteria:

- Active in operation as a bank at the time of the study
- Legally registered as a bank in Ghana at the time of the study
- Availability of annual financial reports/statements from 2010-2022

Exclusion criteria:

- Inconsistency in producing annual financial report/statement.
- Unavailability of annual financial reports/statements on credible database and the company's website.

The researcher going by the above criteria settled on 14 banks as the sample for the study as out of the 23 targeted population 14 banks fully satisfied the set inclusion and exclusion criteria. The remaining 9 banks that were excluded from the study mostly did not have annual financial reports/statements for the 13 years used for the study (2010-2022).

#### **4.8 Sources of Data**

These are the places or origins from which researchers collect information, evidence, or facts to conduct their research or address specific research questions (Andrew et al., 2019). Cypress (2018) opines that they provide the raw material for analysis and are essential towards the generation of research findings and conclusions. According to Ring et al. (2019) and Sun et al. (2018), depending on the nature of the research, data can be collected from various sources, which are classified into two main types: "primary data sources and secondary data sources". The primary data are original data collected directly from the source. Researchers gather primary data specifically for their research project (Nayak and Narayan, 2019; Sileyew, 2019). Some of the common methods of collecting primary data include "interviews, surveys, observations, experiments, and questionnaires".

Van den Akker et al. (2021) and Morgan (2022) explain that secondary data are pre-existing data that were collected by someone else for a different purpose; however, they can be used for new research questions. Due to this, researchers analyze and interpret secondary data to derive insights (Ruggiano and Perry, 2019). To analyze the study data, secondary data sources were used. The yearly financial reports of the participating banks and any additional sources the study thought pertinent were used as data sources.

## 4.9 Data Analysis Methods

In research and other fields, these are the methods and procedures used to convert unstructured data into useful information, draw conclusions, and make defensible decisions (Rashid et al., 2019). Nonetheless, the selection of data analysis techniques is contingent upon the study's goals and the nature of the data gathered and taking the research design into account (Sovacool et al., 2018). The study employs Microsoft Excel 2021 and Stata version 15 to analyse the research data. Excel is software which handles a wide range of data analysis tasks, making it suitable for preliminary exploration of the study data and basic statistical calculations. It is employed for data cleaning and data preparation, like the removal of duplicates, organizing data, and filling in missing values.

Stata is also a statistical software widely employed in research fields, which is used for a comprehensive set of tools for statistical modelling and data analysis. Because study data are panel in nature, the study uses a panel regression model. According to Imai et al. (2023), it is a regression model of an extension to the standard panel regression model and accounts for both cross-sectional and time-series variations in data. It is often employed when analyzing data collected from a panel of entities and firms over multiple periods (Mishra et al., 2021). This helps to determine the impact of the study's independent variables: board size (BDZ), independent directors on board (IND), board meetings (BDM), financial expert on the board (FEX) and the moderator firm: size (FMZ) on the dependent variables: operational risk (OPR), return on assets (ROA) and return on equity (ROE).

## 4.10 Model Specification

The panel regression model used to estimate the impact of the mitigation mechanism on operational risk and financial performance of the banks is specified as follows.

**Model 1: Objective 1: to assess the effect of mitigating mechanism on OPR of the banks**

$$OPR_{it} = \beta_0 + \beta_1 BDZ_{it} + \beta_2 IND_{it} + \beta_3 BDM_{it} + \beta_4 FEX_{it} + \beta_5 FGRT_{it} + \varepsilon_{it} \quad (1)$$

**Model 2: Objective 2: to investigate the influence of mitigating mechanisms on the FP of the banks**

$$ROA_{it} = \beta_0 + \beta_1 BDZ_{it} + \beta_2 IND_{it} + \beta_3 BDM_{it} + \beta_4 FEX_{it} + \beta_5 FGRTH_{it} + \varepsilon_{it} \quad (2)$$

$$ROE_{it} = \beta_0 + \beta_1 BDZ_{it} + \beta_2 IND_{it} + \beta_3 BDM_{it} + \beta_4 FEX_{it} + \beta_5 FGRTH_{it} + \varepsilon_{it} \quad (3)$$

**Model 3: Objective 3: to assess the moderating role of firm size in the link between mitigating mechanisms and the operational risk of the banks**

$$OPR_{it} = \beta_0 + \beta_1 BDZ \times FMZ_{it} + \beta_2 IND_{it} + \beta_3 BDM \times FMZ_{it} + \beta_4 FEX \times FMZ_{it} + \beta_5 FGRTH_{it} + \varepsilon_{it} \quad (4)$$

**Model 4: Objective 4: to examine the moderating impact of firm size in the link between mitigating mechanisms and the financial performance of the banks**

$$ROA_{it} = \beta_0 + \beta_1 BDZ \times FMZ_{it} + \beta_2 IND_{it} + \beta_3 BDM \times FMZ_{it} + \beta_4 FEX \times FMZ_{it} + \beta_5 FGRTH_{it} + \varepsilon_{it} \quad (5)$$

$$ROE_{it} = \beta_0 + \beta_1 BDZ \times FMZ_{it} + \beta_2 IND_{it} + \beta_3 BDM \times FMZ_{it} + \beta_4 FEX \times FMZ_{it} + \beta_5 FGRTH_{it} + \varepsilon_{it} \quad (6)$$

#### **A-Priori Expectation**

- i. Mitigating mechanism has a positive effect on operational risk.
- ii. Mitigating mechanisms have a positive influence on the financial performance of firms.
- iii. Firm size plays a significant role in aiding mitigating mechanisms to influence operational risk significantly.
- iv. Firm size influences the mitigating mechanism's ability to positively influence a firm's value.

Where:

$OPR_{it}$  = the operational risk of bank i at time t

$ROA_{it}$  = the return on asset of bank i at time t

$ROE_{it}$  = the return on equity of bank i at time t

$BDZ_{it}$  = the board size of bank i at time t

$IND_{it}$  = the independent directors on board for bank i at time t

$BDM_{it}$  = the board meeting for bank i at time t

$FEX_{it}$  = the financial expertise on board for bank i at time t

$Control_{it}$  = the control variables of bank i at time t

$Control_{it}$  = (firm age (AGF) and firm Growth (FGRTH))

$\varepsilon_{it}$  = the error term

The use of firm-level control variables like firm age and firm growth helps to control for any potential confounding effects on the relationship between the mitigation mechanisms and operational risk and financial performance. The study by controlling for AGF and FGRTH can isolate the specific impact of the mitigation mechanisms on the operational risk and financial performance without confounding effects from other variables. Furthermore, the inclusion of control variables helps to better assess the causal relationship between mitigation mechanisms and OPR and FP.

#### **4.11 Diagnostic Testing and Robustness Checks**

These tests are crucial towards ensuring the reliability and validity of a study's statistical models, especially when conducting a dynamic panel regression analysis or any advanced statistical analysis (Bergin, 2018; Keith, 2019). They help to assess whether the model's assumptions are met and whether there are potential issues that need to be addressed (Conn et al., 2018; Alves et al., 2021; Duarte et al., 2018). The study performs the Heteroscedasticity Tests which include the Breusch-Pagan Test and the White Test. The Breusch-Pagan Test assesses whether the variance of the residuals is constant across observations (Abdulhafedh, 2022). Alshaybawee et al. (2018) assert that

Heteroscedasticity can lead to inefficient parameter estimates and incorrect inferences; hence, its tests in the study. Furthermore, the study performs the Durbin- Watson Test which checks for the presence of autocorrelation in the residuals (Aisami et al., 2021). According to Beard et al. (2019), autocorrelation tends to indicate that the model does not account for the temporal dependence in the data. The study also performs the Hausman Test due to the presence of both fixed effects and random effects in the model, and the Hausman test helps to determine which one is more appropriate (Plümper and Troeger, 2019; Joshi and Wooldridge, 2019). Furthermore, Unit root tests, such as the widely used Augmented Dickey-Fuller (ADF) test and Phillips-Perron (PP) test, were utilized to assess the stationarity of the variables under consideration (Enders, 2014). Also, a variance inflation factor (VIF) test was employed yet to evaluate the presence of multicollinearity, with a value of one indicating un-correlation and values larger than five indicating substantial correlation (Musah and Kong, 2019; Elkins and Entwistle, 2018). A VIF higher than 10 should raise red flags as it implies a high degree of connectivity and less credible regression findings.

#### **4.12 Ethical Considerations**

In carrying out a research study of any nature, it is always appropriate to have ethical considerations in mind. Thus, usually, the study centres on humans, animals, and institutions/organizations. Hence, it is suitable to consider ethics to ensure that no harm or potential harm or injury be it physical, psychological or otherwise is brought to the subjects of the study before, during and after the study. In this particular study, the investigation was carried out having ethical considerations in mind. The study is mainly on secondary data analysis which has no direct involvement with humans and animals.

Even though, the identities of the banks used in the study are not exposed the general name '**universal banks**' is used. In terms of the handling of their data, even though, they are already in the public domain, care was taken to ensure that they are used purposefully for the study and nothing else.

#### **4.13 Summary of Key Points**

The chapter began with an introduction that discussed the research methods used to direct the gathering, analysis, and development of theories. The research paradigm which

is the philosophy underpinning the study was considered and it was established that the objectivist/positivist approach was adopted. The research design used for the study was descriptive research design which is used to describe the characteristics of the studied phenomenon. The chapter also established that panel data of Ghanaian banks for thirteen years was used. Fourteen banks constituted the sample population, and the inclusion and exclusion techniques were used to arrive at the sample. The panel data constituted secondary data which was the data mainly used for the study, and the validity and reliability test for it was on the fact that the data was sourced from a reputable institution's database. Ethical consideration in conducting scientific research was given attention and it was established that the documents used are in the public domain and that though, the banks' data are used for the study; their names are not mentioned. Data sourced were analysed through a dynamic panel regression model to establish the relationship between the dependent variables and the independent variables.

## **CHAPTER FIVE**

### **RESULTS AND DISCUSSION**

#### **5.0 Introduction**

The analysis of the data and the interpretation of the results are presented in this section. Descriptive statistics was conducted to give a summary of the variables. Panel models, (fixed and random effect) were employed to assess the study hypotheses. Diagnostic tests were conducted to ascertain the reliability and validity of the data. The findings are further discussed in consideration of previous studies.

#### **5.1 Preliminary Analysis**

##### **5.1.1 Descriptive Statistics**

The summary statistics variables are presented below in Table 5.1. The table includes descriptive statistics like mean, standard deviation, minimum and maximum. As can be seen from Table 5.1, the firms have on average an operational risk value of 0.545 with a standard deviation of 0.147, and this indicates that on average the banks face a moderate level of operational risk, while the std. provides information about the variability or dispersion of operational risk values among the banks. Also, the average ROA for the banks is 0.025 with a std. of 0.025 suggesting that on average the banks are generating a return of 2.5% in profit for every dollar of the asset they possess, while the std. implies some variability in profit among the firms. The average ROE value for the banks is 0.149 with a deviation of 0.231, implying that on average the banks are generating a return of 14.9% on their equity investment, while the std. also shows a significant variability in their ROE, the skewness value of -3.838 shows that the majority of the values are above 0.149.

The average board size for the banks is 8.856 with a standard deviation of 1.654, suggesting that the boards in these banks typically consist of approximately nine members and the std. also suggests some variability in the board size among the banks with some having smaller boards and others larger. Also, on average the banks have average independent board directors of 0.590 with a deviation of 0.198 suggesting that

average, 59% of the members on these banks' boards are independent directors. The average board meeting for the banks was 5.718 with a standard deviation of 3.615, suggesting that these banks hold approximately 5.7 board meetings within a year, while the standard deviation indicates some variability in the banks in terms of the frequency of their meetings. The average financial experts on the board's value is 0.441 with a standard deviation of 0.103 which suggests that these banks have a moderate level of financial experts, while the standard deviation indicates that there is some degree of variability among banks regarding financial experts on their boards.

Also, the firms' average size is 9.460 with a deviation of 0.434, suggesting that the firms have a size of approximately 9.460 units; and the standard deviation shows that there is a minimal degree of variability in the firms' size. The firms recorded an average growth of 0.011 with a standard deviation of 0.009 indicating that these banks have experienced a modest level of growth in their operations or business activities. On average, the firms recorded an average age value of 26.030 with a standard deviation of 17.580 indicating that on average, these banks have been established for a relatively long period, indicating a certain degree of stability and experience in the banking industry.

**Table 5.1 Descriptive Statistics**

<b>Variables</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Skewness</b>
Operational Risk	181	0.230	1.010	0.545	0.147	0.748
ROA	181	-0.090	0.070	0.025	0.025	-1.391
ROE	181	-1.640	0.500	0.149	0.231	-3.838
BDZ	181	5.000	13.000	8.856	1.654	0.262
IND	181	0.000	0.900	0.590	0.198	-0.709
BDM	181	4.000	27.000	5.718	3.615	3.054
FEX	181	0.200	0.700	0.441	0.103	0.280
FMZ	181	8.290	10.410	9.460	0.434	-0.192
FGRTH	181	-0.015	0.056	0.011	0.009	1.587

AGF	181	1.000	69.000	26.030	17.580	0.719
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### 5.1.2 Hausman Test

The Hausman test was employed to determine the most suitable model for banks' effectiveness. Estimates of the random effect on methods are expected to be appropriate and provide similar coefficients (the null hypothesis), whereas estimates of the fixed effect on methods are expected to be appropriate (the alternative hypothesis). The null hypothesis that randomness has no influence would be rejected if the Hausman statistics showed a difference in coefficients between the estimate methods. Hence, accepting that the fixed effect model would indicate a Hausman statistic that can be rejected. From Table 5.2, the null hypothesis of a random-effect model is accepted for CIR, ROA and ROE since the Prob. > chi2 value for CIR = -6.155 >.05, ROA = 2.577>.05 and ROE = 3.058 >.05 from the Hausman tests conducted. This proves that the random effect approach is the best one to utilise when analysing the panel data for CIR ROA and ROE respectively.

**Table 5.2 Hausman (1978) specification test**

Variables	Chi-square test value	P-value
CIR	-6.155	1.000
ROA	2.577	0.860
ROE	3.058	0.802

### 5.1.3 Multicollinearity

As a result, multicollinearity may be avoided by checking for evidence of it amongst the explanatory factors. The multicollinearity amongst the explanatory factors was further investigated using the variance inflation factor (VIF) test. The variance inflation factor quantifies the extent to which multicollinearity artificially inflates the variance of the calculated coefficient. Test-based VIF values for the variables are shown in Table 5.3. Any multicollinearity test result above 5.00 is considered to be very significant (Kutner,

Nachsheim, and Neter, 2004). Test results are shown in Table 5.3. Table 5.3 demonstrates that both the mean and all of the explanatory factors fall below the critical value (5). What this means is that multicollinearity between the variables is at a minimum. For this reason, a panel regression model allows for the simultaneous inclusion of all explanatory variables.

#### 5.1.4 Durbin-Watson (D-W) Statistics

The Durbin-Watson (D-W) statistic is a measure used to identify autocorrelation in regression model residuals. It has a value between 0 and 4, where: A score near 2 suggests that there is no positive or negative first-order autocorrelation in the residuals. This is often thought to be beneficial in regression analysis since it signifies that the observations are not connected with their lag values. A number less than 2 shows that, the residuals have positive autocorrelation. The presence of positive autocorrelation indicates that the residuals from one observation are positively associated with the residuals from the preceding observation. A number considerably more than 2 implies that the residuals have negative autocorrelation. The presence of negative autocorrelation indicates that the residuals from one observation are negatively correlated with the residuals from the preceding observation. The stated Durbin-Watson (D-W) statistic in Table 5.3 is 1.616234. Since this number is less than 2, it suggests that there is a positive first-order autocorrelation in the residuals signifying that the residuals from one observation are positively associated with the residuals from the preceding observation.

**Table 5.3 Variance inflation factor**

	<b>VIF</b>	<b>1/VIF</b>
AGF	2.066	0.484
BDM	1.380	0.724
BDZ	1.290	0.775

FMZ	1.280	0.782
FEX	1.144	0.874
IND	1.123	0.890
FGRTH	1.072	0.933
Mean VIF	1.336	.
Durbin-Watson d-statistic (8, 181) = 1.616234		

### 5.1.5 Heteroskedasticity Test

For the panel estimation, it is assumed that the error or term has a constant variance of two and that the variance of the error term is the same in all observations where it occurs. A homoscedastic error or phrase describes this kind of discrepancy. Heteroscedasticity is the term used when this assumption is true and the variance changes across various observations (Khin et al., 2017). Table 5.4 shows the results. From the table Breusch-Pagan-Godfrey test for heteroskedasticity is (Chi-square = 8.38, 17.55 and 71.28, p-value=0.0000). The p-value is significant at 5% therefore, the null hypothesis is rejected and it is concluded that the variance is non-constant indicating the presence of heteroskedasticity.

**Table 5.4 Heteroskedasticity Test: Breusch-Pagan-Godfrey**

Variable	Chi-square test value	P-value
CIR	8.38	0.0038
ROA	17.55	0.0000
ROE	71.28	0.0000

### 5.1.6 Unit Root Test

The unit root test may be used to determine whether time series data is steady and eliminate any risk of a false positive. When the mean and variance of a time series do

not change significantly during the course of the series, it is said to be steady (Gujarati, 2004). Table 5.5 determines whether or not the series has a unit root by comparing the outcomes of the Augmented Dickey-Fuller (ADF) test with those of the Philip Perron (PP) test. According to (Diehold & Kilian, 2000), unit root tests are useful when deciding on an estimation technique. Others argue that unit root testing should replace econometric models as the standard approach to determining which model of analysis is most suitable. At the initial stage, apart from AGF, all variables remain constant as shown in Table 5.5. This means that all the variables have constant mean and variance confirming the evidence of stationarity.

**Table 5.5 Unit Root Test**

<b>Augmented Dicker Fuller (ADF)</b>				<b>Philip Peron (PP)</b>	
<b>Variables</b>	<b>Z (t)</b>	<b>P-Value</b>	<b>Integration order</b>	<b>Z (t)</b>	<b>P-Value</b>
Operational Risk	-4.994	0.0000	I (0)	-4.699	0.0001
ROA	-8.683	0.0000	I (0)	-8.758	0.0000
ROE	-6.301	0.0000	I (0)	-10.812	0.0000
BDZ	-5.262	0.0000	I (0)	-6.237	0.0000
IND	-4.832	0.0000	I (0)	-5.093	0.0000
BDM	-6.865	0.0000	I (0)	-4.829	0.0000
FEX	-6.865	0.0000	I (0)	-6.827	0.0000
FMZ	-5.983	0.0000	I (0)	-6.055	0.0000
FGRTH	-13.848	0.0000	I (0)	-13.840	0.0000
AGF	-13.676	0.0000	I (1)	-13.697	0.0000

## **5.2 Further Analysis**

### **5.2.1 Correlation Analysis**

The study used Pearson correlation to examine the correlation between the independent variables and the dependent variables. The results Table 5.6 shows that

board size (BDZ) is only positively and moderately correlated with firm size (FMZ) and firm age (AGF) ( $r = .173, P < .05$ ;  $r = .417, P < .01$ ) but weakly correlated with other variables. Independent directors on board (IND) are negatively correlated with financial experts on the board ( $r = -.178, P < .05$ ), positively correlated with AGF ( $r = .241, P < .01$ ) but weakly correlated with other variables. Board meeting (BDM) is negatively correlated with FEX ( $r = -.170, P < .05$ ), ROA ( $r = -.245, P < .01$ ) and ROE ( $r = -.190, P < .01$ ), positively correlated with FMZ ( $r = .243, P < .01$ ), AGF ( $r = .515, P < .01$ ) and operational risk ( $r = .383, P < .01$ ) and weakly correlated with other variables. The correlation results show that the variables have moderate and weak correlations; also, the independent variables have moderate correlations and do not pose any issue of multicollinearity in the data.

**Table 5.6 Correlation Statistics**

Variables	1	2	3	4	5	6	7	8	9	10
BDZ	1									
IND	-0.043	1								
BDM	0.136	0.105	1							
FEX	0.042	-.178*	-.170*	1						
FMZ	.173*	0.002	.243**	-.214**	1					
FGRTH	-0.071	0.029	-0.117	0.033	-.230**	1				
AGF	.417**	.241**	.515**	-.269**	.413**	-.183*	1			
Operational Risk	0.108	.154*	.383**	-0.076	-.296**	-0.049	.181*	1		
ROA	-0.059	0.113	-.245**	0.062	-0.084	.194**	-0.05	-.530**	1	
ROE	-0.065	0.126	-.190*	0.066	-0.091	.215**	-0.021	-.332**	.900**	1

\* Correlation is significant at the 0.05 level (2-tailed).

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

## **5.2.2 Regression Results**

The study is set to evaluate how CG affects the OPR and FP of banks from 2010 to 2022. Panel regression analysis (fixed and random effect) was to examine the specific objectives. The results are shown in Table 5.7 below.

### **5.2.2.1 Model Summary**

Using the data shown in Table 5.7 below, it can be seen that the model's overall  $R^2$  for CIR is 0.171, ROA is 0.101 and ROE is 0.089. This suggests that the explanatory variables accounted for 17.1% of the variation in CIR, 10.1% in ROA and 8.9% in ROE. CIR, ROA and ROE may vary for a variety of reasons where 23.8%, 12.6% and 10.1% are responsible for factors within the scope of the study and 82.9%, 89.9% and 91.1% respectively are attributable to variables outside the study. Also, the Chi-square and the F-test reveal the significance of the model's slope parameters. The Chi-square test for operational risk is 35.919, ROA is 24.168 and ROE is 19.050 respectively with Prob. > chi2 of 0.000 for operational risk and ROA and 0.004 for ROE which is significant at a 5% level of significance. This shows that the model fits the data. The Chi-square test indicates that the implemented model of this study is sufficiently fitted to suggest that CG do influence operational risk and financial performance.

### **5.2.2.2 Mitigation Mechanism and Operational Risk**

The first objective of the study was to examine the impact of mitigation mechanisms (board size, independent directors on the board, board meetings and financial experts on the board) on the operational risk of the banks. The findings show that independent directors on board (IND) and board meetings (BDM) have a negative significant effect on operational risk ( $\beta = -.105$ ; p-value < .010;  $\beta = -.017$ ; p-value < .01). This suggests that there is an adverse relationship between independent directors on board (IND), board meetings (BDM) and operational risk. The negative coefficient implies that a unit increase in independent directors on board and board meetings may result in a decrease of 0.105 and 0.017 in operational risk in the firms.

However, board size (BDZ), and financial experts on the board (FEX) have no significant effect on operational risk ( $\beta = .009$ ; p-value  $>.05$ ;  $\beta = .024$ ; p-value  $>.05$ ) suggesting that any further increase in board size and financial experts on the board may not have any significant effect on operational risk.

### **5.2.2.3 Mitigation Mechanism and Financial Performance**

Objective two was set to examine the influence of mitigation mechanisms on financial performance. The results indicate that board meetings have a statistically significant positive effect on both ROA and ROE ( $\beta = .002$ ; p-value  $< 0.01$ ;  $\beta = .015$ ; p-value  $<0.01$ ). Also, board size significantly affects ROE ( $\beta = .016$ ; p-value  $<0.010$ ). On the other hand, independent directors on board and financial experts on the board do not significantly affect ROA ( $\beta = .003$ ; p-value  $> .05$ ;  $\beta = .009$ ; p-value  $> .05$ ) and ROE ( $\beta = .006$ ; p-value  $>.05$ ;  $\beta = .104$ ; p-value  $> .05$ ). The outcomes show that board meetings and board size are significant predictors of financial performance in the banks.

### **5.2.2.4 The Moderating Role of Firm Size in the Link between Mitigation Mechanism and Operational Risk**

The third objective of the study was to examine the interaction effect of firm size in the link between mitigation mechanisms and operational risk. The findings show that firm size combined with independent directors on board rather increases operational risk ( $\beta = .002$ ; p-value  $< .01$ ) but not firm size combined with both board size and financial expertise ( $\beta = .008$ ; p-value  $> .05$ ;  $\beta = -.015$ ; p-value  $> .05$ ) which do not have any significant effect on operational risk.

### **5.2.2.5 The Moderating Role of Firm Size in the Link between Mitigation Mechanism and FP**

The study also evaluated the conditional role of firm size in the link between mitigation mechanisms and the FP of banks. The findings show that the conditional effect of

firm size in the link between independent directors on board and FP (ROA and ROE) is positive and significant ( $\beta = .005$ ; p-value < .01;  $\beta = .001$ ; p-value < .01), implying that firm size is a conditional avenue under which independent directors on board can positively improve financial performance. The results however, show that the moderating role of firm size is not significant in the link between board size, financial experts on the board and financial performance (ROA ( $\beta = .006$ ; p-value > .05;  $\beta = .002$ ; p-value > .05) and ROE ( $\beta = .0001$ ; p-value > .05;  $\beta = .008$ ; p-value > .05).

### 5.2.3 Control Variables

Variables such as firm growth and age are controlled in the study. The results show that they both significantly predict financial performance ( $\beta = 2.718$ ; p-value < .10;  $\beta = .009$ ; p-value < .01;  $\beta = .003$ ; p-value < .01) but not operational risk ( $\beta = -.297$ ; p-value > .05;  $\beta = -.001$ ; p-value > .05).

**Table 5.7 Random Effect on Regression Result**

	Dependent Variables		
	Operational Risk	ROA	ROE
	<i>Coeffic. (p)</i>	<i>Coeffic. (p)</i>	<i>Coeffic. (p)</i>
<b>Controls</b>			
FGRTH	-.297(.796)	.213(.210)	2.718*(.078)
AGF	-.001(.221)	.009***(.009)	.003**(.003)
<b>Main Effect</b>			
BDZ	.009(.173)	-.0001(.130)	.016*(.069)
IND	-0.105* (.052)	.003(.694)	.006(.933)
BDM	-.017***(.000)	.002***(.000)	.015***(.000)
FEX	.024(.820)	.009(.563)	.104(.439)
<b>Interaction Effect</b>			

BDZ*FMZ	.008(.750)	.006(.899)	.0001(.992)
IND*FMZ	.002***(.000)	.005***(.000)	.001**(.003)
FEX*FMZ	-.015(.180)	.002(.851)	.008(.596)
<b>Model Summary</b>			
Mean dependent var	0.545	0.025	0.149
Overall r-squared	0.171	0.101	0.089
Chi-square	35.919	24.168	19.050
R-squared within	0.238	0.126	0.101
SD dependent var	0.147	0.025	0.231
Number of obs	181.000	181.000	181.000
Prob > chi2	0.000	0.000	0.004
R-squared between	0.123	0.091	0.144

\*\*\* p<.01, \*\* p<.05, \* p<.1

### 5.3 Discussion of Results

The study set out to evaluate how CG affects the OPR and FP of banks from 2010 to 2022. Therefore, the theoretical model and the study's objectives are considered when the discussion of the study's results is presented.

#### 5.3.1 Mitigation Mechanism and Operational Risk

The study's first objective was to examine the impact of the mitigation mechanism (board size, independent directors on the board, board meetings and financial experts on the board) on the operational risk of the banks. The findings showed that IND on board and BDM have a negative significant effect on OPR. This suggests that there is an adverse relationship between IND on the board, BDM and OPR. The negative coefficient implies that a unit increase in IND on the board and BDM may result in a decrease in OPR in the firms. However, board size (BDZ), and financial experts (FEX) have no significant effect on operational risk suggesting that any further increase in board size and financial experts on the board may not have a significant effect on operational risk.

Independent directors are essential in corporate management. They are required to make board decisions with insightfulness, objectivity, and impartiality. The evidence that IND has a negative significant influence on OPR shows that having more IND on the board is linked with reduced OPR. This outcome is consistent with the expectation in CG literature. Research has been conducted to investigate the effect of IND on different areas of business performance and risk. A study by Saravanan (2022) discovered a positive relationship between the share of IND and business value in his research. Also, a study by Altaf et al., (2020), established a significant positive role played by the corporate board on OPR. Furthermore, Neifar and Jarboui (2018), in their study confirmed that IND on the board has a significant impact on OPR. Similarly, INDs are effective monitors of CEO behaviour (Brandes, 2006).

Muntahanah, et al. (2021) claimed that IND may improve business performance by aligning management interests with those of shareholders in the context of OPR. Even though they did not particularly analyse operational risk, their results suggest that independent directors may favourably contribute to overall business risk management. Nsaibi, Abidi and Rajhi, (2020), in their study, confirm IND on the board has a positive and significant relationship on OPR. It is crucial to note, however, that the link between independent directors and operational risk varies by industry and business. According to Liu and Sun (2021), although independent directors may reduce risk in certain companies, they may not be as successful in highly regulated sectors.

Also, board meetings provide a place for significant decisions and risk management methods to be debated and approved. The negative significant impact of board meetings on operational risk means that a greater frequency of board meetings is linked with lower operational risk. This finding emphasises the significance of board participation in risk oversight. Sharma and Kaur (2021) discovered that more frequent board meetings are related to greater company performance and higher firm value. This shows that active board participation may have a favourable influence on several elements of business operations. In terms of risk management, research has underlined the importance of board meetings in risk oversight. Research by Zattoni and Pugliese (2019) emphasised the relevance of board meetings in risk assessment and mitigation.

The results of the BDZ have no substantial influence on OPR, on the other hand, provide important insights into the link between CG structures and risk management practices inside organisations. The number of directors on a company's board, or BDZ, is an important part of CG. The importance of board size stems from its ability to affect decision-making processes, oversight efficacy, and, ultimately, a firm's operational risk management. Several types of research have been conducted to look at the link between BDZ and different areas of business performance and risk management (Alabdullah, 2022; Khatib and Nour, 2021; Musallam, 2020). According to some research, larger committees may have challenges such as diminished communication efficacy, difficulty establishing agreement, and an increased risk of "groupthink."

Other studies, however, have shown that larger boards may give a greater spectrum of experience, more diversified viewpoints, and stronger oversight capacities. A study by Syakirra and Chia (2023) discovered that board size is positively connected with business value, implying that larger boards are associated with better governance. A study by Haider and Fang (2016) also established a negative relationship between large BDZ and OPR. The results that financial competence does not influence operational risk in corporate governance add to the ongoing discussion over the qualifications and duties of directors in risk management.

This finding is consistent with other studies, such as that of Ali and Govindan (2023); extenuating operational risks through digital transformation of agro-food supply chains. Alabdullah and Naseer (2023) found no significant association between financial skill and operational risk. It emphasises the concept that operational risk, which includes non-financial variables like internal procedures and human dynamics, demands a broader skill set than merely financial competence. This is consistent with the results of Bunea and Dinu (2020), who emphasised the need for a diverse board skill set in managing multiple risk categories, including operational risk. While financial competence is useful for managing financial risks, operational hazards can arise from numerous operational issues, necessitating directors with a deeper grasp of technology, internal processes, and organisational behaviour (Choi et al., 2020). Furthermore, the study's findings illustrate the necessity for context-specific considerations in board composition and risk management practises, stressing the need for a one-size-fits-all approach to director credentials for all sectors and enterprises (Spamann, 2022).

### 5.3.2 Mitigation Mechanism and Financial Performance

Objective two was set to examine the influence of mitigation mechanisms on FP. The findings show that BDM has a statistically significant positive effect on both ROA and ROE. Also, BDZ significantly affects ROE. On the other hand, IND on board and financial experts do not significantly affect ROA and ROE. The results indicate that BDM and BDZ are significant predictors of financial performance in the bank.

The findings that BDM has a statistically significant beneficial influence on ROA and ROE highlight the critical importance of board activities in improving FP. This finding is consistent with previous research, such as that of Yermack (1996), who found that more board involvement and monitoring improves business performance (Arvanitis et al., 2022). Frequent board meetings provide deeper conversations, increased monitoring, and better strategic decision-making (Tejerina-Gaite and Fernández-Temprano, 2021). Furthermore, the findings support García-Ramos et al. (2023) notion that active board participation may lead to enhanced business performance. The findings are further in affirmation with the outcomes of the study by Nguyen et al., (2020), which established good CG leads to improvement in bank performance.

More so, Ntim and Osei (2011) in their study established a statistically significant and positive association between BDM and corporate performance. The favorable association between BDM and financial success is consistent with Althagafi and Alalyani (2023) study, which emphasizes the significance of board participation in strategic decision-making processes. It also emphasizes the board's responsibility as a tool for promoting CG and ensuring that management acts in the best interests of shareholders. It is important to note, however, that the nature and quality of board meetings can vary significantly across firms, and more research is needed to investigate the specific mechanisms by which board meetings influence financial performance while taking contextual factors and board composition into account (Kiel & Nicholson, 2003).

Also, BDZ is an important topic in CG research, and it connects with earlier research on the influence of board qualities on business performance. Several research have been conducted to study the link between BDZ and financial outcomes, with typically conflicting findings. This result is consistent with Kyere and Ausloos (2021) study, which stated that larger boards may result in less monitoring and cooperation among directors,

possibly hindering corporate performance. A study by Nyamongo and Temesgen (2013) also established board size impacts performance negatively. On the other hand, it contradicts the findings of certain research, such as Lo and Liao (2021), who claimed that larger boards might bring varied knowledge and resources to the organisation, hence improving performance. However, empirical studies like that of Jensen (1993) claim that smaller boards are more successful at monitoring management and making strategic choices, corroborating the detrimental impact of board size on ROE (Elgad and Ghardallou, 2022). A smaller board may aid in effective communication and decision-making (Lu, 2021).

However, the research found that independent directors on boards had no significant effect on bank financial performance. These findings call to question conventional thinking and have stirred controversy in academic and practitioner communities. It seems to contradict the widely held assumption that independent directors are critical to improving corporate performance and defending shareholders' interests. Previous research by Hamid and Purbawangsa (2022), Nyamongo and Temesgen (2013) and Alabdullah et al. (2021), have claimed that independent directors serve as effective monitors, minimising agency difficulties and favourably improving financial performance. These studies emphasise the need to have a large number of independent directors to guarantee greater supervision of management choices and, as a result, superior financial results. It is important to note, however, that the link between independent directors and business success is not always clear, and study results have been varied. Puni and Anlesinya (2020) discovered that the presence of independent directors does not necessarily result in greater financial performance since their efficacy may be impacted by a variety of contextual variables such as the regulatory environment and industry characteristics. Furthermore, according to Zubeltzu-Jaka et al. (2019), the effect of independent directors on business performance may fluctuate across various metrics of governance and financial performance, and ROA and ROE may not reflect the full degree of their influence. While finding that independent directors have no significant effect on ROA and ROE may appear surprising initially, it highlights the need for a more nuanced understanding of the relationship between board composition, governance mechanisms, and FP, taking into account the complex interplay of contextual factors and multiple dimensions of CG.

The finding that financial competence among board members has no significant effect on both ROA and ROE provides fascinating insights into the wider argument on corporate governance and its impact on business performance. Financial knowledge on boards has traditionally been seen as a critical component in enabling effective financial decision-making and risk management, which should lead to greater financial performance. According to Musallam (2023) and Pekovic and Vogt (2021), board financial competence may favourably affect financial policy, resulting in improved financial results. Adams and Jiang (2020) in their study of the relationship between financial experts on the board and performance outcomes found that there exists a positive relationship between board-level financial experts and FP. They assert that the financial experts on the board can save the firm some cost in the sense that they ensure that financial statements are well prepared to meet the expectations of external auditors, and therefore, bargain to reduce audit costs.

This research emphasized the importance of directors having financial understanding in evaluating investment possibilities, assessing financial risks, and making informed strategic choices. However, the findings are consistent with prior empirical research that has called into doubt the direct relationship between financial knowledge on boards and financial success indicators. According to Wong (2023), the link between board expertise and business success may be more complicated, with other variables such as board independence and CEO power dynamics playing critical roles. Similarly, Noor et al. (2021) stated that the performance of financial specialists on boards might be affected by a variety of contextual circumstances and that their impact may not be reflected exclusively by ROA and ROE. As a result, finding that financial knowledge had no statistically significant influence on these FP metrics emphasizes the need for a more sophisticated approach to assessing the impact of board membership on financial results. It implies that, although financial knowledge is undeniably useful, its effect may appear in ways other than the direct link with ROA and ROE.

### **5.3.3 The Moderating Role of Firm Size in the Link between Mitigation Mechanism and Operational Risk**

The study's third objective was to assess the interaction effect of firm size in the link between mitigation mechanisms and OPR. The findings show that FMZ combined with IND on the board increases OPR but not FMZ combined with both BDZ and financial experts which does not have any significant effect on OPR. According to the research, firm size, when paired with independent members on the board, increases operational risk. Independent directors have traditionally been considered as a way of improving corporate governance and decreasing agency conflicts, which should reduce operational risk.

Studies such as Brandes et al. (2022) and Lu and Zhu (2020) have shown the beneficial effect of independent directors in strengthening governance and lowering risk. They claimed that independent directors contribute impartiality and show a deeper commitment to shareholder interests, which may improve decision-making and risk management. Firm size, on the other hand, has often been connected with more resources, diversity, and risk management skills, implying that larger firms should have lower operational risk. The current research, however, draws this traditional wisdom into doubt and implies that the association between FMZ and IND might have unforeseen repercussions.

This is consistent with more recent research by Ananzeh et al. (2022) and Amoako (2021), which suggested a curved connection between board independence and firm risk, where an overabundance of independent directors could impede effective decision-making and risk management. The finding is also consistent with previous research, such as Khaoula and Moez (2019) and Huu Nguyen et al. (2020), which argued that larger organizations may suffer governance issues owing to their scale, possibly leading to coordination problems that raise operational risk. As a consequence, the findings emphasize the necessity of striking a delicate balance in board membership and governance practices, taking into consideration the distinct features and problems encountered by enterprises of various sizes. It emphasizes the need to develop a more nuanced knowledge of how independent directors and business size interact to impact operational risk, highlighting the possibility that different firms may not achieve the best outcomes via a corporate governance strategy that is tailored to suit all.

The findings that FMZ, in combination with both BDZ and financial experts, has no substantial effect on OPR in banks add to the current literature on CG, risk management, and the banking industry. Scholars have traditionally investigated the link between board features such as size and competence and risk outcomes in financial institutions, often focusing on how these elements individually affect risk. Buallay and Alhalwachi (2022) and Buchetti and Santoni (2022), investigated the significance of board size in affecting risk-taking behaviour, with reasons ranging from the advantages of different viewpoints to worries about increasing groupthink and ineffectiveness.

Similarly, Trinh et al. (2020) and Kalia and Gill, (2023) have extensively explored the value of financial knowledge on boards, emphasizing its ability to improve risk management and decision-making in banks. However, the current findings, which show no significant effect when firm size interacts with both board size and financial experts on the board, call into question the conventional wisdom that larger firms with boards comprised of a diverse set of financial skills would naturally exhibit more effective risk management practices.

This outcome is consistent with previous studies by Cucari et al. (2023) and Raouf and Ahmed (2023), which revealed that the link between board features and risk outcomes in banks may be affected by a variety of contextual variables. It highlights the need for a more nuanced understanding of how these variables interact, which may be mediated by contextual factors such as the regulatory framework, market circumstances, and bank-specific characteristics. Furthermore, the findings highlight the complexities of risk management in the banking industry, where factors other than board composition and firm size, such as loan portfolio quality, macroeconomic conditions, and regulatory constraints, all have a significant impact on operational risk (Jameel and Siddiqui, 2023; Agha et al., 2023).

#### **5.3.4 Moderating the Role of Firm Size in the Link between Mitigation Mechanism and Financial Performance**

The study also evaluated the conditional role of FMZ in the link between mitigation mechanisms and the FP of banks. The findings show that the conditional effect of FMZ in the link between IND on board and FP (ROA and ROE) is positive and significant, implying that FMZ is a conditional avenue under which IND on board can positively improve

FP. The results however show that the moderating role of FMZ is not significant in the link between BDZ, FEX and FP (ROA and ROE).

The study found a positive and significant conditional influence of firm size on the relationship between independent directors on boards and financial performance (ROA and ROE). Previous research has thoroughly investigated the function of independent directors on boards in impacting corporate performance and financial results. Goucha et al. (2020) and García-Ramos (2023) emphasised the monitoring and advising duties of independent directors in improving corporate decision-making and minimising agency difficulties, which may lead to better financial performance. Similarly, Abebe Zelalem (2022) and Tampakoudis et al. (2022) investigated board independence as a tool for eliminating conflicts of interest and increasing shareholder value. The current results, however, show that this link is conditioned by the size of the firms, and is consistent with previous work by Bansal and Sharma (2019), who have emphasised contextual elements that modify the influence of board independence on firm performance. The idea that independent directors are more effective in improving financial performance in

larger firms, underscores the notion that the presence of independent voices can be beneficial, especially in complex and resource-intensive organisations, where governance challenges may be more pronounced (Spiers, 2022; Munyikwa, 2022). This viewpoint is consistent with the concept that in larger and more varied organisations, independent directors are better prepared to supervise management actions and maintain strategy alignment with shareholders' interests (Johnson, 2019). Furthermore, the findings are consistent with Hosny and Elgharbawy (2022) research on the resource-dependency theory, which suggests that larger organisations with more extensive resource needs may benefit from a more independent board to mitigate resource dependency and improve decision-making. Independent directors in such organisations may give crucial oversight, question management, and provide vital strategic direction, all of which can contribute to improved financial results (Musallam, 2023).

Furthermore, the results add to the continuing discussion about corporate governance practices and regulatory changes. For example, regulators and policymakers all over the globe have emphasised the need for board independence and diversity as a method of strengthening corporate governance and protecting shareholder interest (Hopt, 2021;

Mehran, 2015). According to the results, regulatory actions encouraging the participation of independent directors may be particularly helpful for bigger organisations and may result in significant gains in financial performance.

However, the study discovered that FMZ has no moderating effect on the relationship between BDZ, financial knowledge, and financial success (ROA and ROE). Research has carefully investigated the influence of BDZ and financial knowledge on business success. Althagafi and Alalyani, (2023) and Lu, (2021) have investigated the impact of board size on business decision-making processes and financial performance, with various degrees of success. Similarly, Puni, and Anlesinya, (2020) and Gerged and Agwili (2020) investigated the role of financial experts among directors in increasing corporate value and financial performance. According to these studies, larger boards may provide more varied viewpoints and more monitoring ability, but they may also face coordination issues and higher expenditures (Heubeck and Meckl, 2023).

Directors with financial expertise, on the other hand, may contribute to better financial decision-making and strategic advice (Rezaee et al. 2021). However, the current findings, which show that FMZ does not significantly moderate the relationship between BDZ, FEX, and FP, are consistent with studies by Arora et al. (2022) and Amedi and Mustafa, (2020), which suggest that the impact of board characteristics on firm performance may not be firm size dependent. This viewpoint emphasizes that the link between BDZ, financial knowledge, and financial success is impacted by a variety of contextual variables, such as industry dynamics, ownership structure, and regulatory environment (Hordofa 2023; Heaton et al. 2023). Furthermore, the findings add to the current discussion over the ideal composition of corporate boards and director qualifications.

The current results imply that the effect of BDZ and FEX on financial success may not be driven only by the firm's size, highlighting the need for a more sophisticated approach to CG practices. Moreover, when deciding on board membership and competence needs, firms must take into account other contextual elements and industry-specific dynamics. Furthermore, the findings emphasise the significance of continuing study into the complex interaction between board features, business performance, and environmental factors (Tejerina-Gaite and Fernández-Temprano, 2021).

## **CHAPTER SIX**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS FOR FUTURE RESEARCH**

#### **6.1 Introduction**

In conclusion, this research has examined the intricate connection of CG, OPR, and FP within the banking sector of Ghana. Through a comprehensive analysis of the data and an intensive review of existing literature, several key findings have emerged. As a result, the study's last section offers a summary of the results along with recommendations for areas that warrant further investigation. This study takes into account both the full scope of the study and its potential impact on future research.

#### **6.2 Summary of Findings**

The study set out to evaluate how CG affects the OPR and FP of banks from 2010 to 2022. The salient conclusions are emphasized by combining the previously indicated study with the existing corpus of work. The results that have been presented are considered suitable in relation to the objectives of the research.

##### **6.2.1 Mitigation Mechanism and Operational Risk**

The first objective of the study was to examine the impact of the mitigation mechanism (board size, independent directors on the board, board meetings and financial experts on the board) on the operational risk of the banks. The findings showed that IND on board and BDM have a negative significant effect on OPR. This suggests that IND on board and BDM have adverse effects on OPR. The negative coefficient implies that a unit increase in IND on board and BDM may result in a decrease in OPR in the firms. However, BDZ, and FEX on the board have no significant effect on OPR suggesting that any further increase in BDZ and FEX may not have a significant effect on OPR.

## **6.2.2 Mitigation Mechanism and Financial Performance**

Objective two was set to assess the influence of the mitigation mechanism on FP. The outcomes indicate that BDM has a statistically significant positive effect on both ROA and ROE. Also, BDZ significantly affects ROE. On the other hand, IND on board and FP on the board do not significantly affect ROA and ROE. The results indicate that BDM and BDZ are significant predictors of FP in the bank.

## **6.2.3 The Moderating Role of Firm Size in the Link between Mitigation Mechanism and Operational Risk**

The third objective of the study was to examine the interaction effect of FMZ in the link between mitigation mechanisms and OPR. The findings show that FMZ combined with IND on the board rather increase OPR but not FMZ combined with both BDZ and FEX which do not have any significant effect on OPR.

## **6.2.4 Moderating the Role of Firm Size in the Link between Mitigation Mechanism and Financial Performance**

The study also evaluated the conditional role of FMZ in the link between the mitigation mechanism and the FP of banks. The findings show that the conditional effect of FMZ in the link between IND on board and FP (ROA and ROE) is positive and significant, implying that FMZ is a conditional avenue under which IND on board can positively improve FP. The results however show that the moderating role of FMZ is not significant in the link between BDZ, FEX and FP (ROA and ROE).

## **6.3 Conclusion**

The study is set to evaluate how CG affects the OPR and FP of banks from 2010 to 2022. Descriptive research design was used to investigate the relationship between variables. The target population of the study were the 23 universal banks in Ghana that have been in existence from 2010- 2022. However, since not all the banks were listed on the Ghana Stock Exchange, and therefore, they were not obliged by law to annually publish their financial statements, inclusion and exclusion criteria; based on the availability of annual reports were employed to attain a sample of 14 banks that were used the research study.

The 14 banks' annual reports within the period 2010-2022 constituted the secondary data extracted from the annual financial reports that were used for the study. To ensure the robustness or otherwise of the data, the data were subjected to various tests amongst them are Hausman test, multicollinearity test, and Heteroskedasticity test, etc. Descriptive statistics were used to give a general overview of the data. The study's hypotheses were tested using a panel regression analysis (random effect model). The findings showed that IND on board and BDM have a negative significant effect on OPR. However, the BDZ, and FEX have no significant effect on OPR. The findings also showed that BDM and BDZ have positive and significant effects on the FP of the banks. The moderating analysis showed that FMZ combined with IND on board rather increased OPR while the same FMZ positively moderates the relationship between IND on board and FP.

## **6.4 Implications of the Study**

### **6.4.1 Theoretical Implication**

The research holds noteworthy theoretical consequences for the fields of Agency Theory and Information Asymmetry Theory, revealing important insights into the dynamics of CG processes, OPR, and FP in the setting of banks. The negative significant impact of IND on boards and BDM on OPR is consistent with the core assumptions of agency theory. IND, serving as agents for shareholders, are supposed to supervise and govern in order to reduce agency conflicts between management and shareholders. Due to the negative relationship between these governance mechanisms and OPR, the presence of IND and active BDM may effectively lower the risk associated with managerial activities, leading to a more robust risk management framework.

The negative coefficient emphasizes the idea that a unit increase in the presence of IND and BDM may result in a reduction in OPR inside organizations. The finding emphasizes the significance of these governance tools in protecting shareholder interests and reducing the possibility of operational failures. The non-significant impacts of BDZ and FEX on OPR imply that increasing BDZ and financial knowledge may have little effect on lowering OPR. This result emphasizes the complexities of governance arrangements and the necessity for a sophisticated approach to board composition. This also has a theoretical explanation and thus; as BDZ becomes large, there is higher cost in terms of

fees and allowances which when the actions of the board due to possible lack of cohesion amongst them are unable to counter the inefficient managerial decision leads to residual loss and therefore worsen OPR in the bank. While BDZ and financial knowledge are crucial, they may not always translate into better OPR management. This study urges a more targeted examination of board members' effectiveness and synergy in tackling particular risk-related concerns.

Board meetings' impacts on ROA and ROE are consistent with the ideas of Information Asymmetry Theory. Regular and active BDM may increase communication, information sharing, and transparency between management and shareholders, minimizing information asymmetry. The positive coefficients suggest that increasing the number of BDM is linked with greater financial performance, meaning that decreased information asymmetry leads to better decision-making and, as a result, superior financial results.

The study emphasizes the crucial role of active board participation in reducing information asymmetry and improving FP. Furthermore, the strong influence of FMZ on ROE shows that a bigger board might effectively eliminate information asymmetry, resulting in higher shareholder returns. The non-significant impact of FEX on both ROA and ROE, on the other hand, suggests that the presence of financial specialists on the board may not be enough to drive financial success. Instead, it emphasizes the significance of properly using financial knowledge within the board's decision-making processes in order to realise performance gains.

#### **6.4.2 Practical Implication**

These studies have significant implications for banks and their governance practices. First, the large negative impact of IND on boards and BDM on OPR emphasises the significance of strong CG in risk management. Banks should aggressively encourage the inclusion of IND capable of providing impartial supervision, as well as ensuring that BDM are regular and effective in addressing OPR issues. This means that proactive governance measures may reduce OPR, hence improving the overall stability and security of banking operations. The lack of a significant influence of BDZ and FEX shows that merely expanding BDZ or adding financial specialists may not result in significant risk

reduction advantages. Banks should prioritise the quality and competency of their board members above growth for the sake of expansion. It is not just about having additional directors; it is about successfully using the skills and experience of current members.

Furthermore, the effect of BDM on both ROA and ROE highlights the practical necessity of active board participation in improving FP. Banks should prioritise regular and meaningful BDM to promote communication and openness, which will lead to better financial results. Since BDZ has a significant impact on ROE, a larger board might improve financial returns by giving varied viewpoints and experiences. However, banks must find a balance between size and efficiency. An expanded board should not risk efficiency or decision-making agility. Furthermore, the results concerning the conditional influence of firm size on the link between IND and FP underline the importance of banks taking their size into account when building their boards. IND may help larger banks more since they can efficiently negotiate the challenges that typically accompany growth.

## **6.5 Practical and Policy Recommendations**

Based on the study, the following suggestions are made for banks to improve their governance practices, risk management, and financial performance:

- Since independent directors have a negative influence on operational risk, banks should prioritise the selection of independent directors for their boards. Independent directors contribute objectivity and impartiality to governance, assisting in the reduction of operational risk via effective supervision. Banks should ensure that these directors have the credentials and expertise to make a significant contribution to risk management.
- Recognising that BDM has a statistically significant beneficial influence on both ROA and ROE, banks should create a culture of active and regular BDM. These meetings should be organized in a way that encourages open communication, openness and informed decision-making. To get the best results, board members should participate in conversations about risk management techniques, FP and strategic planning.

- While BDZ and financial knowledge did not affect OPR, banks should prioritise board member quality and competency above board enlargement or the recruitment of financial specialists. A well-balanced board of directors with varied viewpoints and experience may have a favourable impact on financial results. Banks should evaluate their board members' abilities and credentials to ensure that each member provides value to the governance process.
- Banks should customise their governance practices to their unique size and complexity, taking into account the conditional influence of FMZ on the link between IND and FP. Because of the increasing complexity of their operations, larger banks may benefit more from independent directors. Smaller banks should still examine successful governance principles, although they may not need as comprehensive a board structure as bigger organizations. The governance system should be in line with the bank's size and strategic goals.

## **6.6 Limitations and Future Research Direction**

One of the study's possible drawbacks is the use of a descriptive research approach, which mainly gives insights into relationships between variables but does not show causality. Future studies might use experimental or longitudinal methods to better understand the interrelationship between CG structures, OPR, and FP in the banking industry. Furthermore, the concentration of the study on the universal banks in Ghana may restrict the results' applicability to other periods or banking situations. Future research might broaden the scope of the study to include a larger variety of financial institutions and investigate how external variables, such as regulatory changes or economic situations, influence the observed associations.

Furthermore, the unique socio-economic and regulatory environment of Ghana may influence the effectiveness of certain governance practices. Therefore, future studies could explore the specific cultural and regulatory factors that shape the dynamics of CG in the Ghanaian banking sector. In addition, using qualitative research methodologies, such as interviews or case studies, may give deeper insights into the mechanisms and processes that drive operational risk and financial performance in the banking business.

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## RESEARCH INSTRUMENT (DATASET)

FIRMS	YEAR	ID	CIR	ROA	ROE	BDZ	IND	BDM	FEX	FMZ	FGRT H
GCB	2010	1	51%	3%	23%	12	0.73	4	0.4	9.32	0.026
GCB	2011	1	86%	0.68%	10%	11	0.73	4	0.4	9.39	0.008
GCB	2012	1	53%	5%	49%	11	0.75	4	0.4	9.47	0.009
GCB	2013	1	47%	7%	50%	12	0.75	4	0.3	9.53	0.006
GCB	2014	1	58%	6%	41%	12	0.75	4	0.4	9.63	0.01
GCB	2015	1	49%	5%	30%	12	0.75	4	0.4	9.67	0.004
GCB	2016	1	56%	5%	30%	12	0.73	4	0.3	9.78	0.011
GCB	2017	1	68%	2%	19%	11	0.75	6	0.4	9.98	0.02
GCB	2018	1	62%	3%	24%	12	0.75	27	0.4	10.03	0.005
GCB	2019	1	59%	4%	26%	12	0.75	19	0.4	10.09	0.006
GCB	2020	1	58%	3%	21%	12	0.3	16	0.4	10.19	0.009
GCB	2021	1	53%	3%	22%	12	0.3	14	0.4	10.26	0.007
GCB	2022	1	54%	-3%	-30%	13	0.3	13	0.5	10.33	0.007
SCB	2010	2	47%	4%	37%	8	0.5	4	0.5	9.22	0.008
SCB	2011	2	43%	4%	33%	7	0.43	4	0.4	9.29	0.008
SCB	2012	2	37%	5%	44%	8	0.5	4	0.5	9.38	0.009
SCB	2013	2	31%	7%	43%	8	0.63	4	0.5	9.48	0.011
SCB	2014	2	38%	6%	39%	8	0.63	4	0.5	9.54	0.006
SCB	2015	2	43%	2%	12%	8	0.63	4	0.4	9.53	-0.001
SCB	2016	2	31%	5%	29%	8	0.63	5	0.4	9.64	0.012
SCB	2017	2	36%	6%	31%	8	0.63	4	0.4	9.68	0.004
SCB	2018	2	40%	4%	20%	8	0.63	6	0.4	9.78	0.01
SCB	2019	2	39%	4%	24%	8	0.63	5	0.4	9.88	0.01
SCB	2020	2	28%	6%	33%	9	0.44	4	0.4	9.9	0.002
SCB	2021	2	35%	4%	27%	7	0.57	4	0.4	10	0.01
SCB	2022	2	36%	-3%	-23%	7	0.43	4	0.4	10.33	0.002
STANBIC	2010	3	59%	2%	17%	8	0.63	4	0.5	8.95	0.011
STANBIC	2011	3	53%	3%	23%	9	0.67	4	0.6	9.06	0.012
STANBIC	2012	3	53%	3%	24%	8	0.63	5	0.5	9.23	0.019
STANBIC	2013	3	44%	4%	36%	10	0.8	5	0.5	9.47	0.026
STANBIC	2014	3	45%	4%	38%	11	0.73	6	0.5	9.56	0.01
STANBIC	2015	3	52%	3%	27%	11	0.73	5	0.5	9.63	0.007
STANBIC	2016	3	51%	3%	25%	10	0.7	5	0.5	9.73	0.01
STANBIC	2017	3	46%	4%	27%	10	0.7	5	0.5	9.72	-0.001
STANBIC	2018	3	53%	4%	23%	9	0.67	5	0.6	9.79	0.007
STANBIC	2019	3	52%	3%	23%	8	0.5	5	0.5	9.97	0.018
STANBIC	2020	3	53%	3%	19%	8	0.63	4	0.5	10.11	0.014
STANBIC	2021	3	48%	3%	21%	7	0.57	5	0.6	10.15	0.004
STANBIC	2022	3	47%	0%	-4%	9	0.56	5	0.3	10.27	0.012
CALBANK	2010	4	53%	2%	12%	7	0.57	4	0.4	8.69	0.005
CALBANK	2011	4	48%	2%	20%	8	0.5	4	0.5	8.89	0.023
CALBANK	2012	4	37%	4%	24%	10	0.6	4	0.6	9.06	0.019

CALBANK	2013	4	34%	6%	33%	9	0.44	4	0.6	9.19	0.014
CALBANK	2014	4	33%	5%	36%	9	0.56	4	0.7	9.43	0.026
CALBANK	2015	4	36%	5%	32%	10	0.5	4	0.5	9.53	0.011
CALBANK	2016	4	41%	0.20%	1.43%	9	0.33	5	0.4	9.56	0.003
CALBANK	2017	4	41%	3%	22%	10	0.5	5	0.5	9.62	0.006
CALBANK	2018	4	43%	3%	21%	9	0.44	6	0.6	9.73	0.011
CALBANK	2019	4	45%	3%	18%	11	0.82	6	0.6	9.58	-0.015
CALBANK	2020	4	47%	3%	19%	11	0.72	7	0.4	9.9	0.033
CALBANK	2021	4	45%	2%	17%	11	0.72	4	0.4	10	0.01
CALBANK	2022	4	53%	-9%	-164%	12	0.67	4	0.4	9.96	-0.004
PRUDENTI AL	2010	5	81%	1%	10%	9	0.7	4	0.4	8.61	0.009
PRUDENTI AL	2011	5	72%	2%	18%	9	0.6	4	0.6	8.74	0.015
PRUDENTI AL	2012	5	74%	1%	11%	9	0.5	4	0.6	8.82	0.009
PRUDENTI AL	2013	5	64%	2%	15%	10	0.5	4	0.5	8.92	0.011
PRUDENTI AL	2014	5	67%	2%	17%	10	0.5	4	0.5	9.05	0.015
PRUDENTI AL	2015	5	71%	1%	7%	10	0.5	4	0.5	9.14	0.01
PRUDENTI AL	2016	5	81%	1%	6%	10	0.5	4	0.5	9.21	0.008
PRUDENTI AL	2017	5	77%	-1%	-11%	10	0.5	4	0.5	9.34	0.014
PRUDENTI AL	2018	5	80%	1%	3%	11	0.6	4	0.4	9.38	0.004
PRUDENTI AL	2019	5	75%	1%	4%	10	0.6	5	0.4	9.5	0.013
PRUDENTI AL	2020	5	61%	1%	5%	10	0.4	6	0.4	9.6	0.042
PRUDENTI AL	2021	5	55%	2%	12%	11	0.36	10	0.4	9.64	0.01
PRUDENTI AL	2022	5	52%	-7%	-97%	11	0.36	11	0.3	9.72	-0.004
GT-BANK	2010	6	57%	3%	12%	7	0.7	4	0.4	8.62	0.019
GT-BANK	2011	6	56%	3%	13%	7	0.7	4	0.6	8.65	0.003
GT-BANK	2012	6	43%	6%	27%	7	0.7	4	0.6	8.83	0.021
GT-BANK	2013	6	41%	6%	28%	7	0.7	4	0.6	8.97	0.016
GT-BANK	2014	6	42%	5%	31%	7	0.7	4	0.4	9.06	0.01
GT-BANK	2015	6	47%	4%	26%	7	0.7	4	0.4	9.13	0.008
GT-BANK	2016	6	44%	5%	28%	7	0.7	4	0.4	9.19	0.007
GT-BANK	2017	6	45%	5%	28%	7	0.6	4	0.4	9.27	0.009
GT-BANK	2018	6	39%	7%	28%	6	0.7	4	0.3	9.36	0.01
GT-BANK	2019	6	37%	7%	28%	8	0.7	4	0.4	9.51	0.016
GT-BANK	2020	6	27%	7%	27%	7	0.57	5	0.3	9.61	0.01
GT-BANK	2021	6	24%	6%	26%	7	0.57	5	0.3	9.7	0.009

GT-BANK	2022	6	23%	2%	9%	7	0.57	5	0.3	9.85	0.015
BOA	2011	7	89%	-3%	-31%	10	0.1	4	0.5	8.59	0
BOA	2012	7	72%	0.37%	3.40%	10	0.1	4	0.5	8.75	0.019
BOA	2013	7	56%	-0.45%	-3.46%	10	0.1	4	0.5	8.8	0.006
BOA	2014	7	47%	3%	26%	9	0.1	4	0.4	8.96	0.018
BOA	2015	7	68%	2%	20%	8	0.1	4	0.5	9.06	0.011
BOA	2016	7	68%	2%	15%	8	0	4	0.5	9.06	0
BOA	2017	7	66%	2%	13%	8	0	4	0.5	9.13	0.008
BOA	2018	7	64%	2%	12%	9	0.1	4	0.6	9.1	-0.003
BOA	2019	7	49%	3%	11%	10	0.1	4	0.6	9.31	0.023
BOA	2020	7	46%	3%	10%	8	0.5	4	0.5	9.32	0.001
BOA	2021	7	46%	2%	10%	8	0.5	4	0.5	9.5	0.019

BOA	2022	7	46%	0.20%	1%	8	0.5	4	0.5	9.56	0.006
ACCESS	2010	8	43%	4%	10%	5	0.2	4	0.4	8.29	0.04
ACCESS	2011	8	45%	3%	9%	9	0.3	4	0.3	8.43	0.017
ACCESS	2012	8	46%	4%	20%	8	0.4	4	0.5	8.9	0.056
ACCESS	2013	8	44%	5%	21%	9	0.4	4	0.7	8.97	0.008
ACCESS	2014	8	42%	5%	29%	8	0.5	4	0.6	9.23	0.029
ACCESS	2015	8	48%	3%	22%	8	0.5	4	0.6	9.38	0.016
ACCESS	2016	8	54%	2%	10%	9	0.4	4	0.6	9.43	0.005
ACCESS	2017	8	63%	1%	6%	8	0.5	6	0.5	9.51	0.008
ACCESS	2018	8	53%	1%	8%	8	0.5	5	0.6	9.55	0.004
ACCESS	2019	8	50%	4%	22%	8	0.5	6	0.6	9.67	0.013
ACCESS	2020	8	56%	4%	23%	6	0.33	5	0.3	9.77	0.01
ACCESS	2021	8	46%	4%	24%	9	0.56	5	0.3	9.87	0.01
ACCESS	2022	8	49%	-3%	-33%	11	0.45	5	0.5	10	0.013
ECOBANK	2010	9	47%	4%	26%	8	0.4	5	0.3	9.18	0.004
ECOBANK	2011	9	53%	3%	28%	9	0.4	5	0.3	9.33	0.016
ECOBANK	2012	9	49%	4%	31%	11	0.5	4	0.2	9.53	0.021
ECOBANK	2013	9	46%	4%	33%	10	0.5	4	0.3	9.67	0.015
ECOBANK	2014	9	45%	6%	39%	10	0.5	4	0.3	9.75	0.008
ECOBANK	2015	9	44%	5%	37%	10	0.5	4	0.3	9.82	0.007
ECOBANK	2016	9	47%	4%	34%	9	0.6	4	0.6	9.9	0.008
ECOBANK	2017	9	52%	3%	25%	11	0.6	4	0.5	9.96	0.006
ECOBANK	2018	9	52%	3%	26%	11	0.6	4	0.5	10.02	0.006
ECOBANK	2019	9	45%	3%	25%	10	0.6	4	0.5	10.12	0.01
ECOBANK	2020	9	47%	3%	22%	8	0.63	4	0.4	10.2	0.008
ECOBANK	2021	9	46%	3%	22%	8	0.63	4	0.4	10.25	0.005
ECOBANK	2022	9	43%	0%	-1%	7	0.57	4	0.4	10.41	0.016
FIDELITY	2010	10	72%	1%	13%	6	0.7	4	0.3	8.81	0.029
FIDELITY	2011	10	67%	1%	17%	6	0.7	4	0.3	9.01	0.023
FIDELITY	2012	10	62%	2%	23%	7	0.7	4	0.3	9.12	0.012
FIDELITY	2013	10	59%	3%	28%	8	0.6	4	0.3	9.23	0.012
FIDELITY	2014	10	56%	3%	21%	10	0.7	4	0.5	9.48	0.027
FIDELITY	2015	10	53%	4%	29%	10	0.7	5	0.5	9.61	0.014

FIDELITY	2016	10	59%	0%	3%	7	0.6	4	0.4	9.62	0.001
FIDELITY	2017	10	61%	2%	17%	6	0.5	5	0.5	9.73	0.011
FIDELITY	2018	10	56%	2%	24%	7	0.7	6	0.4	9.85	0.012
FIDELITY	2019	10	52%	3%	30%	7	0.7	5	0.4	10.02	0.017
FIDELITY	2020	10	51%	3%	25%	9	0.33	5	0.4	9.97	-0.005
FIDELITY	2021	10	49%	3%	28%	8	0.38	6	0.5	10.13	0.016
FIDELITY	2022	10	46%	-3%	-59%	9	0.33	7	0.4	10.14	0.001
SG-BANK	2010	11	64%	3%	17%	11	0.8	4	0.5	8.84	0.009
SG-BANK	2011	11	69%	3%	15%	11	0.7	4	0.5	8.92	0.009
SG-BANK	2012	11	64%	3%	18%	11	0.7	4	0.5	9.04	0.013
SG-BANK	2013	11	60%	3%	19%	11	0.7	4	0.5	9.09	0.006
SG-BANK	2014	11	55%	3%	22%	11	0.7	4	0.4	9.22	0.014
SG-BANK	2015	11	62%	2%	17%	11	0.7	4	0.3	9.3	0.009

SG-BANK	2016	11	60%	3%	19%	11	0.7	4	0.3	9.39	0.01
SG-BANK	2017	11	57%	3%	17%	11	0.7	4	0.3	9.46	0.007
SG-BANK	2018	11	59%	2%	9%	8	0.9	5	0.3	9.54	0.008
SG-BANK	2019	11	55%	3%	16%	11	0.9	6	0.3	9.65	0.012
SG-BANK	2020	11	54%	3%	17%	8	0.33	6	0.4	9.71	0.006
SG-BANK	2021	11	50%	3%	18%	9	0.33	7	0.6	9.74	0.003
SG-BANK	2022	11	44%	2%	10%	12	0.33	7	0.6	9.82	0.008
ZENITH BANK	2010	12	60%	2%	13%	6	0.8	4	0.5	8.82	0.008
ZENITH BANK	2011	12	50%	3%	21%	8	0.9	4	0.4	8.84	0.002
ZENITH BANK	2012	12	52%	3%	22%	8	0.6	4	0.4	8.98	0.016
ZENITH BANK	2013	12	41%	4%	30%	8	0.8	4	0.4	9.28	0.033
ZENITH BANK	2014	12	41%	5%	39%	9	0.8	4	0.4	9.49	0.023
ZENITH BANK	2015	12	55%	3%	19%	8	0.8	4	0.4	9.41	-0.008
ZENITH BANK	2016	12	40%	4%	24%	7	0.9	4	0.4	9.53	0.013
ZENITH BANK	2017	12	39%	4%	23%	6	0.8	5	0.5	9.67	0.015
ZENITH BANK	2018	12	41%	3%	21%	7	0.9	4	0.6	9.75	0.008

ZENITH BANK	2019	12	42%	4%	22%	8	0.9	5	0.3	9.83	0.008
ZENITH BANK	2020	12	34%	4%	23%	7	0.3	5	0.4	9.91	0.008
ZENITH BANK	2021	12	43%	3%	14%	7	0.43	7	0.4	9.95	0.004
ZENITH BANK	2022	12	39%	-4%	-43%	6	0.5	6	0.5	9.98	0.003
REPUBLIC	2010	13	67%	2%	11%	9	0.8	6	0.7	8.56	0.018
REPUBLIC	2011	13	73%	2%	13%	9	0.8	4	0.7	8.63	0.008
REPUBLIC	2012	13	67%	2%	10%	10	0.7	12	0.5	8.77	0.016
REPUBLIC	2013	13	50%	4%	22%	10	0.6	8	0.5	8.99	0.025
REPUBLIC	2014	13	54%	4%	23%	10	0.7	10	0.5	9.12	0.014
REPUBLIC	2015	13	74%	-3%	-22%	8	0.8	6	0.5	9.19	0.008
REPUBLIC	2016	13	93%	-2%	-27%	8	0.8	4	0.5	9.27	0.009
REPUBLIC	2017	13	73%	2%	16%	7	0.9	6	0.3	9.32	0.005
REPUBLIC	2018	13	66%	1%	8%	8	0.9	4	0.3	9.46	0.015
REPUBLIC	2019	13	60%	2%	11%	9	0.9	4	0.3	9.52	0.006
REPUBLIC	2020	13	62%	1%	9%	9	0.67	6	0.3	9.56	0.004
REPUBLIC	2021	13	62%	2%	12%	9	0.67	8	0.3	9.63	0.007
REPUBLIC	2022	13	57%	-2%	-10%	8	0.63	6	0.5	9.71	0.008

ADB	2010	14	87%	1%	10%	8	0.8	4	0.4	8.98	0.012
ADB	2011	14	83%	3%	20%	8	0.8	13	0.4	9.08	0.011
ADB	2012	14	78%	2%	14%	7	0.9	13	0.4	9.16	0.009
ADB	2013	14	59%	5%	30%	8	0.8	13	0.4	9.21	0.005
ADB	2014	14	71%	1%	10%	7	0.7	12	0.4	9.33	0.013
ADB	2015	14	96%	-5%	-30%	6	0.9	15	0.3	9.33	0
ADB	2016	14	101%	-2%	-15%	8	0.9	14	0.3	9.48	0.016
ADB	2017	14	76%	1%	6.00%	9	0.9	7	0.4	9.55	0.05
ADB	2018	14	89%	0.16%	0.92%	8	0.9	17	0.4	9.56	0.001
ADB	2019	14	92%	0.32%	2%	8	0.9	22	0.4	9.66	0.01
ADB	2020	14	78%	1%	8%	8	0.38	16	0.4	9.76	0.01
ADB	2021	14	74%	1%	9%	9	0.44	17	0.3	9.81	0.005
ADB	2022	14	90%	-5%	-56%	9	0.44	14	0.3	9.87	0.006

22<sup>nd</sup> April 2022

**Student number: 22175099**

**Dear Mr B.S. Ofori**

**DOCTOR OF PHILOSOPHY IN MANAGEMENT SCIENCES: BUSINESS ADMINISTRATION**

This serves to confirm the approval of your research proposal by the Faculty Research Committee, at its meeting on **22<sup>nd</sup> April 2022**, as follows:

1. Research proposal and provisional dissertation title:  
**Mitigating mechanisms on operational risk- evidence from the Ghanaian banking sector**

Supervisor: **Dr O Fagbadebo**

Co-supervisor: **Dr P Sarpong**

Please note that any proposed changes in the thesis/dissertation title require the approval of your supervisor/s, the Faculty Research Committee, as well as ratification thereof by the Higher Degrees Committee.

2. Research budget to the amount of: **R10 000.00(Masters) / R15 000(DPHIL)**  
Please note that this funding is not a scholarship or bursary and is therefore not paid directly to you, but is controlled by the Faculty. Any proposed changes to the use of this funding allocation requires the approval of your supervisor and the Dean. Please note that funding will be reimbursed to you after the provision of receipts.

The Institutional Research Committee has stipulated that:

- (a) This University retains the ownership of any Intellectual Property (patent, design, etc.) registered in respect of the results of your Masters/Doctors Degree in Technology studies as a result of the award and the provisions of the above Act;
- (b) Should you find any of the terms above not acceptable then you are given the option to decline the Research budget award to your project in writing.

May we remind you that in terms of Rule G25(2)(b), if you fail to obtain the Masters/Doctors degree within the maximum time period allowed after first registering for the qualification,

Senate may refuse to renew your registration or may impose any conditions it deems fit. You may apply to the Faculty Research Committee for an extension.

Please note that you are required re-register each year until your qualification is completed and graduation is confirmed.

Please note that the following must be adhered to:

**Registration:**

1. Ensure registration has taken place ***(the onus is on the student and the supervisor to ensure registration takes places at the beginning of each year whilst the student is currently engaged with his/her Masters or PhD qualification)***
2. Ensure that application for Conferment of Status has been made in the event of your undergraduate qualification being different to this application. ***Your attention is drawn to the fact that Conferment of Status is required for registration.***
3. Ensure that your proposal is submitted along with supporting documentation to the Departmental Research committee (DRC) for onward submission to FRC for approval and thereafter to IREC (institutional research ethics committee) for ethical clearance. This is in the case of Ethics level 2 and level 3 IREC (in the case of a study dealing with vulnerable populations). See guideline attached. ***It is the researcher's responsibility to check the Ethics requirements and submit to the relevant bodies irrespective of the reviewer's recommendation.***

**Dissertation submission for examination:**

1. Ensure that you submit the intention to submit form **(PG 5)**, signed by the HOD and Supervisor
2. Ensure that the signed checklist is submitted with the **PG 5**
3. Once your dissertation is submitted to the supervisor for examination purposes, communication from here on will only be with you supervisor and not with the faculty.
4. Your supervisor **MUST** nominate the examiners three months prior to submission of the dissertation/thesis for examination.
5. On submission for examination, please note that a PDF signed copy must be submitted to your supervisor along with the completed and signed **PG 7** form, **FMS Checklist** and signed **Turn it in report**.
6. Feedback will be provided to your supervisor regarding the examination result after the result is ratified by the Higher Degrees Committee (HDC).
7. In the event of a resubmission the reports will be submitted to the supervisor who will communicate with you for revision. Once revision has taken place your supervisor will submit to the FRO for resubmission to the examiners.
8. In the case where there is a discrepancy in examiners results, an Arbiter will be nominated via the HOD and supervisor and tabled at FRC and ratified at HDC.  
On completion of this process, the Arbiters report will be tabled at FRC and ratified at HDC.

9. Results of the Arbitration process will be communicated to your supervisor

**Graduation requirements:**

1. Ensure that you submit a completed signed PG10 form
2. pdf version to be sent upon HDC ratification
3. response to post graduate examination form
4. completion of study form (IREC form)

Should you experience any problems relating to your research, your supervisor must be informed of the matter as soon as possible. If the difficulties persist, you should then approach your Head of Department and thereafter the Faculty Research Coordinator.

Please refer to the 2022 General Rule Book and the Postgraduate Students' Guide 2021 concerning the rules relating to postgraduate studies, which include *inter alia* acceptable minimum and maximum timeframes, submission of thesis/dissertations, etc. Please do not hesitate to contact this office for any assistance. We wish you success in your studies.

Kind regards,

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Dr Melanie Lourens obo the FRC Chair/Executive Dean: Professor Netswera  
Faculty of Management Sciences